

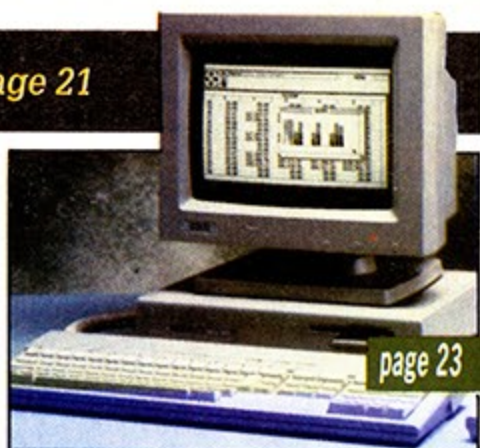
Issue 21 • Apr 1 1989

Only 48p!

DeluxePaint III's creator reveals his secrets - page 21

NEW COMPUTER EXPRESS

First news, first reviews - every week

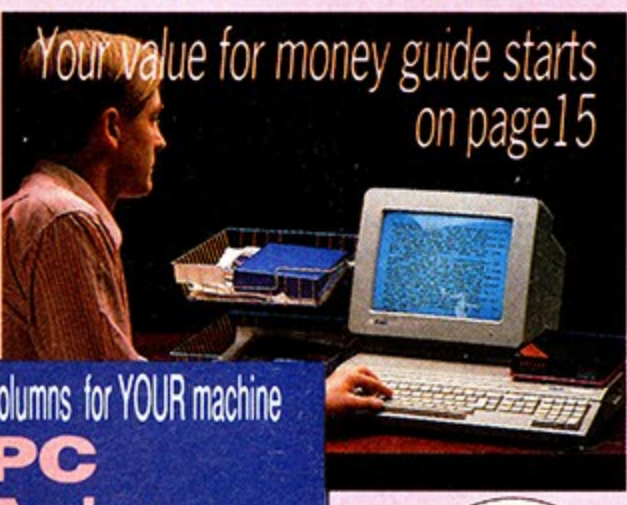


page 23

1ST AMONG EQUALS

How Atari's machine took off

Be a Smart Comms User

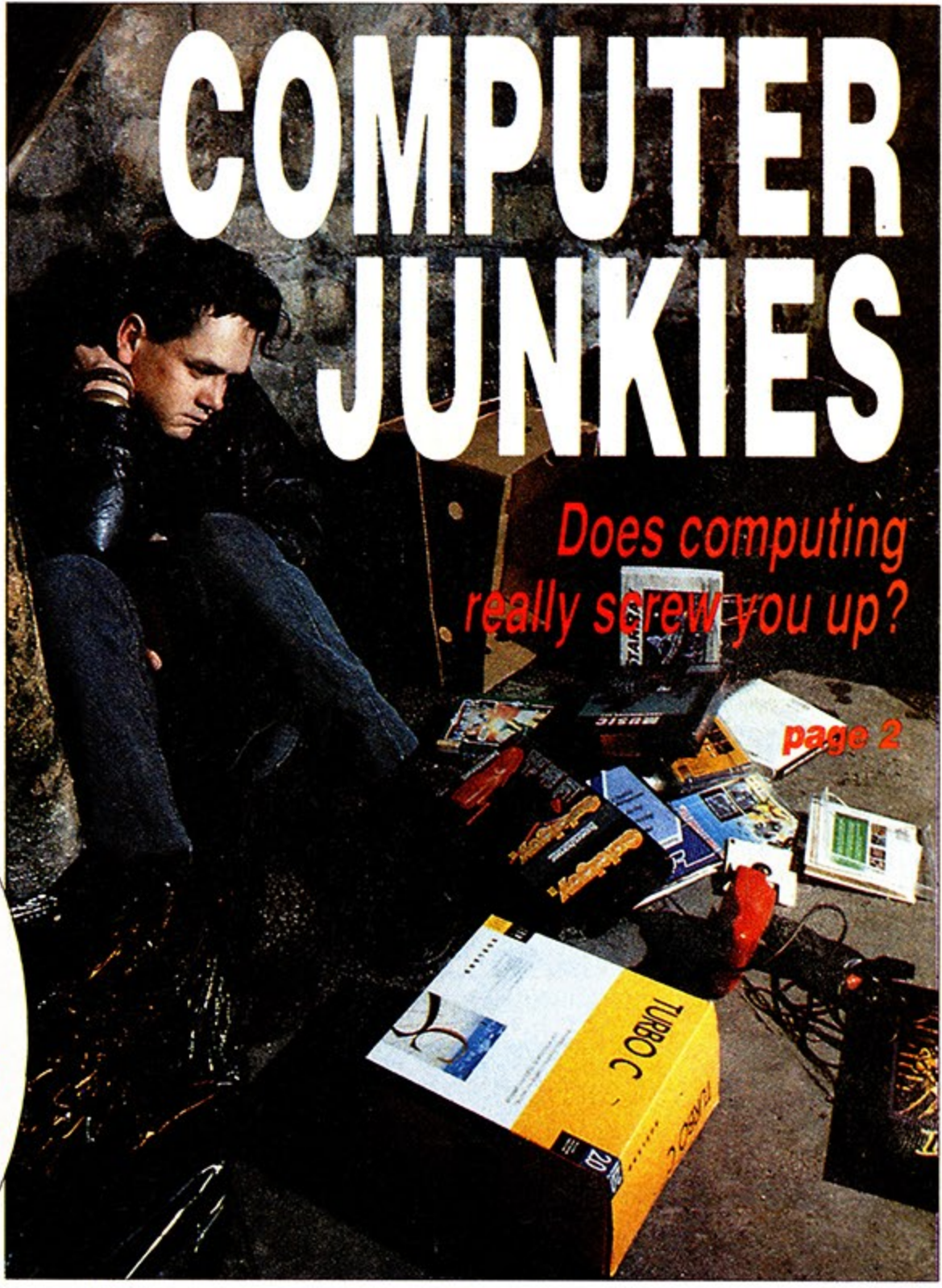


Your value for money guide starts on page 15

- Columns for YOUR machine
- PC
 - Amiga
 - Atari ST
 - Spectrum
 - C64
 - CPC
 - PCW
 - QL
 - BBC
 - MSX
- pages 33-40

PIRATES
 Watch out!
 The Industry's
 out to get you

page 3



COMPUTER JUNKIES

Does computing really screw you up?

page 2



SPECIAL
 4-page
 supplement

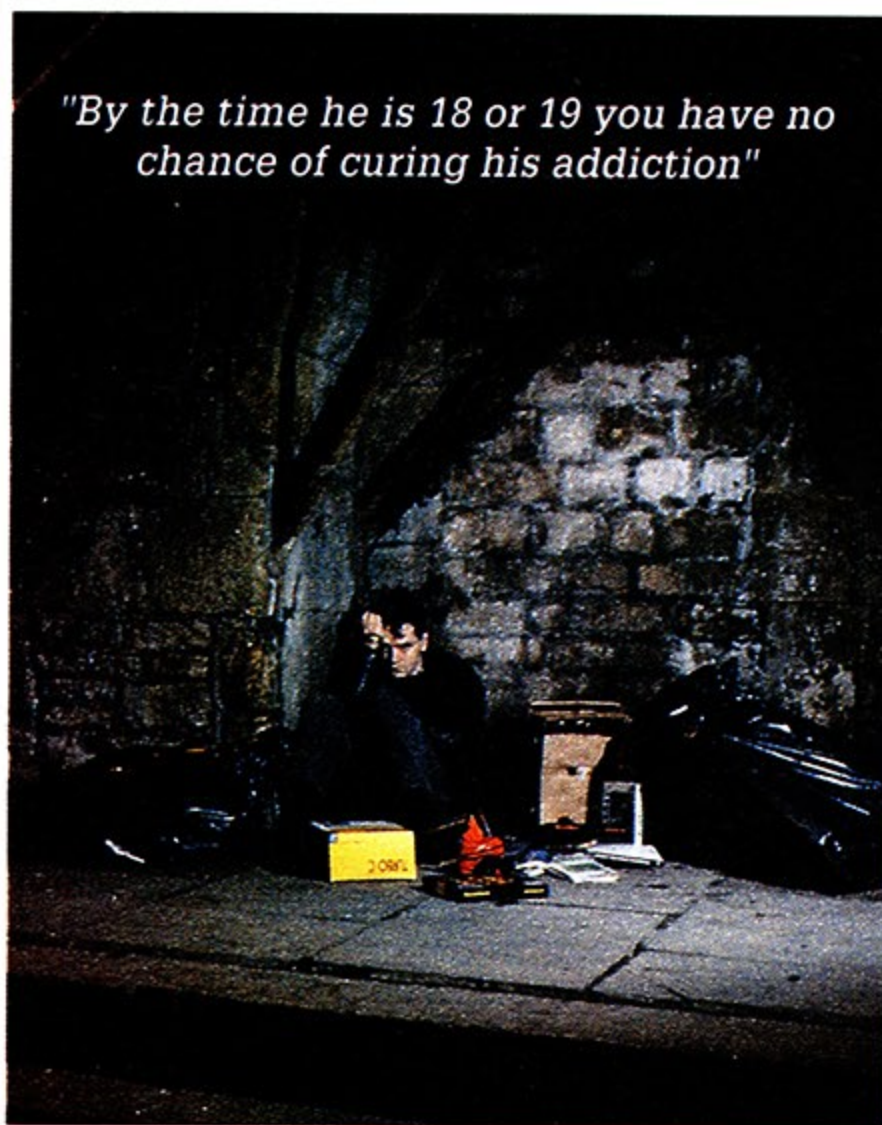


PRODIGIOUS PRISON

Arcade adventure breaks out of Krisalis - page 47

Users warned of dangerous addiction

COMPUTERS CAN REALLY SCREW YOU UP...



"By the time he is 18 or 19 you have no chance of curing his addiction"

• Computer junkie: The computer is the most important thing in his life

Leading child psychologists are warning that young people who use computers excessively are putting their health at risk.

The doctors in the UK and America have pinpointed a socially crippling disease called Technostress. Computer whizzkids who spend their lives with computers are distancing themselves from the real world with devastating results.

Symptoms include fatigue, short attention span, impatience, irritability and an insistence on yes/no answers. The doctors claim that some 3 million children in the US alone suffer from Technostress. No figures are available for the UK - which boasts more computers per household than any other country in the world.

The victims are often gifted youngsters who are shy and clumsy in early youth. As they grow older the kids remove themselves from peers to play with their computers. The computer soon replaces the child's friends and it has the extra bonus of letting him always be in control.

The youngsters who miss out on a normal adolescence grow up to be completely reliant on the computer living a lonely life of keyboard tapping. Even micro shows are out of the question for the computer junkie who is afraid of contact with other people.

Harley Street child psychiatrist Dr Joan Freeman explained: "Boys are

more at risk than girls. They are more likely to be uneasy and shy with other people." She added: "This predisposes them to letting a computer take the place of usual childhood activities and friendships.

"The computer, they soon learn, lets them be in control. It doesn't argue back and it does what you want to. People aren't like that."

Dr Freeman also told of cases of young men who had reached their mid twenties and had never taken a girl out. She warned: "Parents should keep a look out for the symptoms while the child is still young enough to be lured away from the computer. By the time he is 18 or 19 you have no hope of curing him of his addiction."

She told of one typical cyber-junkie who first started playing with computers in his first year at secondary school. He used the computer to steer clear of the other kids during break times but within a matter of months he couldn't bear to be away from the machine.

Today he is 18 and will not speak to anyone, not even his bewildered parents. He has completely withdrawn from any social contact.

Easter bundle

• Muscling in: Easter compilation

Easter is always a jolly good time to go out and treat yourself to a compilation. As such US Gold has launched *Arcade Muscle*. With prices starting at £13, it's only available for the big three 8-bit machines. *Arcades Muscle* contains the likes of *Roadblasters*, *Bionic Commando*, *1943*, *Sidearms* and *Street Fighter*.

Low end Lotus 1-2-3 PC upgrade drafted in

Area/Month	January	February	March	April	May
North	18,843	211,436	212,527	211,785	224,122
South	14,478	15,834	17,145	18,118	211,873
Central	11,847	13,729	11,387	14,768	15,187
WASER	245,123	251,377	265,892	241,117	2187,345
Scotland	13,567	12,217	14,879	12,892	17,741
N. Ireland	1892	11,875	11,143	11,843	11,752
Ch. Islands	234	1817	12,784	11,895	12,317
Total	285,484	476,385	476,829	457,868	2168,837
Cumulative Total	2486,341				

• Lotus 1-2-wait for it: No version 3 yet, but an upgrade to version 2

An upgraded version of the standard spreadsheet Lotus 1-2-3 will soon be launched - but it's not the long awaited Version 3.0.

Lotus has announced a middle man spreadsheet, Version 2.2, which will cater for low end PC users. The firm feels that 1-2-3 Version 3 is far too powerful for 8086/88 PCs and suited more to the 286, 386 and even 486 sector.

Version 2.2 will cost £395 and boasts faster calculations, higher quality graphics and charts and

improved printer functions. However, low end PC owners will miss out on the much delayed 3D Version 3 which will be available late in the summer.

"The PC user base is so broad now that it's difficult to bring out a package to cover everything," explained a Lotus spokesman to *Express*. "We had to make a choice between cutting back on version 3's capabilities or leaving out the low end sector. The solution is to bring in an extra version."

Fury over 'cop killing' game

Furious anti-violence campaigners in the US have erupted in anger over a new game for the Nintendo called *City Connection*.

The game involves a thief escaping from the police through New York, London and Paris. The campaigners are "most disturbed" at one aspect of the game which involves pushing police cars off the roads.

The International Coalition Against Violent Entertainment wants Nintendo to voluntarily withdraw the game. It is currently drawing on the support of influential groups in the US such as the American Police Association.

"We're very concerned about this game," said ICAVE's Dr Vince Hammond. "It's bad enough portraying violence but this makes the criminal out to be a hero. In a real life scenario cops would get killed."

"We're continuing our tests on these games. They contribute to criminality. Playing these games makes children and adults more conditioned to violence and crime."

Nintendo preferred not to comment on this matter. However, the firm has long taken a strong stand at what it calls



• Don't push me: Fury is erupting over Nintendo's new game

"sensationalist charges". A 36-page document produced by Nintendo earlier this year sought to prove that computer and video games are not harmful and contribute to the learning process."

CRACKDOWN

Playground pirates pitched in new campaign



• Sinking the pirate ship: Co-ordinator of FAST Bob Hay

Software pirates, watch out. In an effort to combat the problem of computer piracy, the entire games industry has joined forces for an all-out awareness campaign.

Software houses, the Federation Against Software Theft and a number of leading computer magazines will all be pitching in to stem the tide of software piracy which threatens to submerge the industry.

Already Ocean has pledged to feature warning flashes on its games stating that copying is an illegal activity. Other publishers are expected to follow suit, such as Activision - a hardened anti-piracy campaigner.

Magazines from publishers such as Future, EMAP, Newsfield, Database and Gollner will be offering colour advertising space carrying the message.

And plans are afoot to include a two-minute warning video on the in-store promotional films similar to those at the start of normal video cassettes.

The idea is to increase awareness amongst youngsters that copying software is illegal and that culprits can be prosecuted. Whilst it is accepted that professional crooks will simply ignore the campaign, it is hoped that the "playground pirates"

will heed the warning.

"Leading industry figures have been very receptive to this idea," said FAST co-ordinator Bob Hay. "I'm delighted that this has fallen on fertile ground."

He told *Express*: "We will be sitting down to decide which is the proper way to conduct the campaign. It's no good old fogies like me preaching to kids, we want the talented youngsters which users admire to pledge their support."

Cynics have suggested that the problem is so widespread that punters will never change. Hay commented: "We wouldn't do it if we thought it wouldn't work." FAST hopes that people who think piracy is a normal pattern of behaviour will realise that it is indeed illegal and damaging.

OUT OF SOUTH AFRICA

US giant Hewlett-Packard is to pull out of South Africa because "there appears to be no significant progress in bringing about an end to apartheid".

Hewlett-Packard South Africa contributes about one per cent to the firm's turnover (\$62 million). It is being sold off to South African company Siltek.

Young at heart

Youngsters in selected primary schools have spent the past few months grappling with the Amiga 500 - and they've taken to it like child's play.

Commodore gave away a number of the machines to 20 primary schools around the country "for evaluation". Eight and nine year olds in Berkshire, Northumberland, Norfolk and Cheshire have been using them to learn about colour, symmetry and writing.

The schools used such packages as *Deluxe Paint* and *KindWords*. A Commodore spokesman said: "We didn't want to talk about it before in case the project was a disaster, but it's been a great success."

Numbers game

Around the world, more than one million new computers are installed every month, according to the *Daily Mirror*. And, more than £360 billion is spent on software very year.

CONTENTS

FEATURES

COMMS	15
Get the best out of computer communications - without big phone bills	
SILVA LINING	21
The man behind DeLuxe Paint III reveals his secrets	
HISTORY OF THE ST	23
The machine that's brought in a new age of computing	
SPECIAL SUPPLEMENT	27
Jam packed with incredible news, features, tips and reviews!	

REGULARS

EXPRESS COMMENT	4
CHARTS	5
LETTERS	11
JOBS	42
TECH TIPS	43
CLASSIFIEDS	45
GAMES	47
Prison, Roadblasters, Blasteroids, Hollywood Poker, Roy of the Rovers, Journey to the Centre of the Earth	
GAME PREVIEWS	50
Ghosts'n'Goblins, Paperboy, Starblaze, Ramrod, Forgotten World, Mike Read's Computer Pop Quiz	
VOUCHERS	51
BACK PAGE	54

YOUR MACHINE

ST	33
PC	34
Amiga	35
Spectrum	36
Commodore 64	37
PCW, QL	38
BBC, MSX	39
CPC	40

NEW COMPUTER EXPRESS

COMMENT

What a load of junkie

At last, surprise surprise, the announcement has come that young computer users can become addicted to their machines, and suffer genuine physical symptoms normally associated with addiction to, and withdrawal from, alcohol or proscribed drugs.

Fair enough, but if we're not careful we'll have the rent-a-quote brigade in when the story gets taken up by the tabloids; they'll be demanding health warnings be put on all computers, pointing out the health hazards already associated with prolonged periods of VDU use, and probably pressing for legislation to make all computers automatically switch off after an hour's continuous use after displaying the message 'Now go out and get some fresh air'.

So if and when the Sensible Older Generation start demanding Something Should Be Done about young people using computers too much, the following points should be made. The dangers present in computing are less than those in alcohol, soft drugs, cigarettes, coke or even Mars bars (people have actually died from ODs of coke and Mars bars). Sure, using your computer, whether it be to play games, word process or whatever, can be completely absorbing and addictive in the non-physiological sense; but 99% of us who have grown up with computers treat them for what they are - useful and enjoyable machines, like walkmans or videos or cars (except that computers don't contribute to the greenhouse effect). The 1% junkie mentality is present in all sections of the population, and computing is just as liable to bring it out as anything else.

Ocean wave?

It looks like Ocean, which always dominates the top ten full-price games charts, will be releasing its first £2.99 budget game shortly. Does this signal a new wave of high-quality budget games from the top software houses - perhaps even for the 16-bit machines before too long? Let's hope Ocean has opened the floodgates.

EDITOR.....Rob Ainsley
NEWS EDITOR.....Colin Campbell
REVIEWS EDITOR.....Andy Storer
TECHNICAL EDITOR.....Jerry Glenwright
STAFF WRITER.....Rik Haynes
ART EDITOR.....Julia O'Shea
ART ASSISTANT.....Harriet Athay
PRODUCTION EDITOR.....Rod Lawton
ADVERTISEMENT MANAGER.....Mark Salmon
AD EXECUTIVES:.....Jennie Evans, Sarah King
AD TYPESETTING.....Terry Turner
PUBLISHER.....Greg Ingham

© Future Publishing Ltd 4 QUEEN ST, BATH, BA1 1EJ
TEL: 0225 446034 • FAX: 0225 446019
Printed by Redwood Web Offset, Trowbridge, Wilts

'We can win' say Apple contestors

The future of copying the 'look and feel' of software still hangs in the balance as the software industry waits on the verdict of the Apple versus Microsoft and Hewlett-Packard case.

The latter two firms both claim that they have taken a step toward beating down Apple's claim that the user friendly operating system of its machines was ripped off. Both companies produced PC programs emulating the Apple Mac's graphical user interface. As reported in last



• MacLawsuit: Interface rip off contested

week's Express, a federal judge has dismissed Microsoft's claim that it could use Windows after

a licensing agreement in 1985. However, Microsoft lawyers want to prove that elements in that licensing agreement were used in later versions of Windows, thus nullifying any rip off claims.

Both Microsoft and Hewlett-Packard are confident they will prove that Apple copyrights have not been infringed. The court will decide whether a broad-based idea such as Apple's can or cannot be emulated.

The outcome will not only cover all future software developments but probably innovative achievements of all kinds.



OCEAN HITS FOR POCKET PRICES

After months of speculation it is almost certain that Ocean will be launching a budget label called Hit Squad.

Although at the time of going to press details had not been finalised, it would appear that the label will be in operation within the next six weeks.

Initially, Ocean will launch three games, one of which is almost certain to be *Rambo*.

Hit Squad games will cost £2.99. Ocean insiders say there are still two schools of thought within the

company about a budget label. Some feel that the full-price games are doing so well that energies need not be spent on cheap games.

However, games players will welcome such a move, given Ocean's impressive back catalogue of hits. Also, the Manchester firm cannot help but notice the success of US Gold's budget label Kixx.

Whilst *Rambo* cannot feasibly be described as Ocean's best effort to date the firm still boasts a healthy line-up of hits which could be re-released at budget prices.

Career opportunities

Skilled computer professionals in the North may soon be able to work in their chosen profession without having to move South.

The National Economic Development Council has set up a scheme "to bridge the skills gap". Separate groups of computers specialists and trainees will be situated in Leeds, Doncaster, Birmingham and Leeds. These will all be linked by computer to a

central office in London. Data will then be sent on to contracting companies around the country.

The objective is to bring training and jobs to areas of high unemployment whilst also helping companies in the South which are finding it difficult recruiting skilled computer operators. The NEDC hopes to raise £500,000 for the Frontline scheme.

Play test your next game - on video

A home video cassette is to be launched this month showing off action snippets of the latest in games entertainment.

Gamesters will be able to buy the tape for £6.49 from normal software shops. It will feature animation from some 25 games and will last around three quarters of an hour.

Hot Shot Entertainments Action Screenplay will be updated every two months. Hot Shot feels that regular games players want to be in touch with what's available and want to see the games as they are rather than as ads depict them.

"When you're spending £10 for an 8-bit game and £20 for a 16-bit game you want to see what it's all about. The video will show you the game as it is," said boss Jon Beales.

Beales added: "Software houses are spending a lot of money on licenses and they want the games to be good. They want to be able to show how good they are."



• Making movies: Beales brings games onto video

NINTENDO IS COMING

The Nintendo games console last week got its biggest boost yet as far as the UK is concerned - potential buyers will now be able to pick the machine up in Dixons.

Nintendo must be eyeing UK gamers with a view to cleaning up. The console already completely dominates America. Nintendo has been here in some form for three years, although its efforts thus far have been somewhat lacklustre.

A deal with Dixons represents a chance to push the machine into the mainstream. Computer manufacturers cannot ask for a better chance to get a machine firmly into the public eye (and from there into their homes).

At the moment there are 36 Nintendo games available in the UK. Plans are afoot to ship more over with *Gradius* top of the list. "It's true that this is the biggest thing to happen for the Nintendo here, although it is already in Boots," said UK boss George Lucardie. "Dixons have taken it on because of the quality of the hardware. We have a less than half per cent default rate for instance."

Dixons, always pragmatic, said it took the console because "we think it will sell".



• Ahead in the game: Dixons boost for Nintendo console

Wanted: Innovative Amiga owners

If you're an Amiga owner, Commodore want you to think up the most innovative use of your machine.

It's asking for as many people as possible to send in their ideas, with prizes to be given out at the forthcoming Commodore Show. This is the first time such a competition has been held for the multi-faceted Amiga. A similar scheme

Commodore feels that the Amiga's uses need to be exploited as much as possible. The firm has long shied away from suggestions that the machine is all too often being used solely for gaming purposes.

"It was done before on the Beeb and there was a fantastic response to that," said a Commodore spokesman. "I know the Amiga is

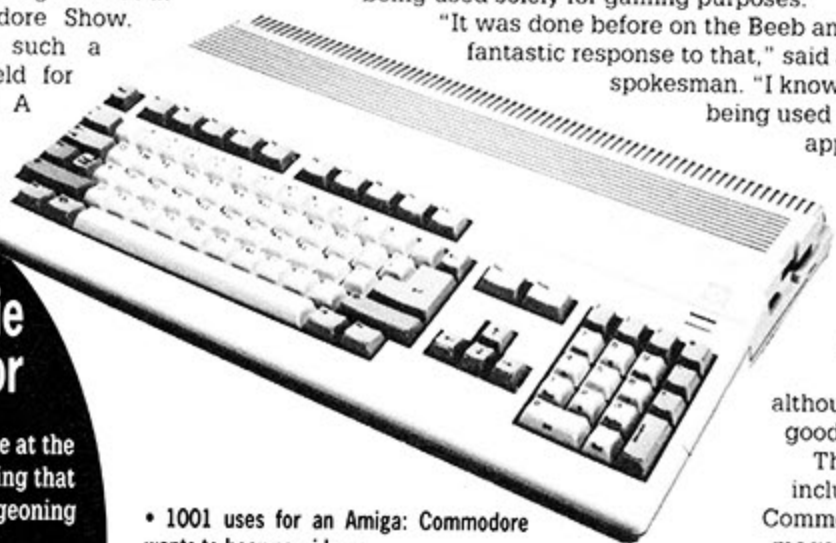
being used for all sorts of

applications. We want to hear about them."

The nature of the prizes hasn't as yet been sorted,

although hardware goodies are likely.

The judges will include editors of Commodore-related magazines such as *ST/Amiga Format* and



• 1001 uses for an Amiga: Commodore wants to hear new ideas

was held for the BBC some years ago with considerable success.

Commodore Computing International as well as *Express*. All will be revealed at the Commodore Show at the London Novotel from June 2nd to the 4th.

If you have any bright ideas you want submitted, send them into *Express* at the usual address.

Eureka! the first Archie games creator

Games creators are all the rage at the moment, so it's hardly surprising that one has popped up for the burgeoning Archimedes.

The first games creator comes from Minerva and is part of an adventure/maze game called *Ivix the Viking*. It should arrive within the month at somewhere around £20.

Minerva has a line up of some seven games for the Archie. More on 0392 37756.

Food for thought

Ever wondered what to do with all the leftovers in the larder? PC owners can lick their lips at the promise of a solution.

Software Circus is offering a program which can receive a list of foods and ingredients and turn them into a menu of delectable dishes. It adjusts quantities to the number of guests and gives cooking instructions. All you have to do is key in the ingredients (and cook the grub).

Called *Bon Appetit*, it will also print out recipes, tips and shopping lists. The domestic wonder costs £39.95.



This is the motor which should be transported to your computer over the next few months.

Artronic has licensed the car racing team Spice Engineering for a new driving simulation. The Spice team are pretty hot stuff when it comes to lightweight C2 racing, having dominated the scene for the past four years.

This year the team is entering itself in the more mainstream C1 division against the likes of Jaguar and Porsche. ST and Amiga versions should be pulling up by the end of May.

TOP 20 Full Price GAMES

1	Robocop	OCEAN	1
		Spectrum, C64, CPC, ST, Amiga	
2	Operation Wolf	OCEAN	6
		Spectrum, C64, CPC, ST, Amiga	
3	Dragon Ninja	OCEAN	2
		Spectrum, C64, CPC	
4	Middle Earth	MELBOURNE HOUSE	16
		Spec. C64, CPC, ST, Amiga, PC	
5	Afterburner	ACTIVISION	11
		Spectrum, C64, CPC, ST, Amiga	
6	WEC Le Mans	IMAGINE	3
		Spectrum, C64, CPC, ST, Amiga	
7	Emlyn Hughes	AUDIOGENIC	4
		Spectrum, C64	
8	In Crowd	OCEAN	5
		Spec. C64, CPC	
9	Thunder Blade	US GOLD	13
		Spectrum, C64, CPC, ST, Amiga	
10	Denaris	US GOLD	12
		C64, Amiga	
11	Double Dragon	MELBOURNE HOUSE	10
		Spectrum, C64, ST, Amiga, PC	
12	Falcon	MIRROSOFT	8
		ST, Amiga, PC	
13	Football Manager 2	ADDICTIVE	RE
		Spectrum, C64, CPC, ST, Amiga, PC	
14	Fun School 2	DATABASEMANDARIN	7
		Spectrum, C64, CPC, BBC	
15	Giants	US GOLD	15
		Spec. C64, CPC	
16	Lombard RAC	DATABASEMANDARIN	RE
		ST, Amiga, PC	
17	Pacland	GRANDSLAM	9
		Spectrum, C64, CPC, ST, Amiga	
18	Batman	OCEAN	10
		Spectrum, C64, CPC, ST, Amiga	
19	Gary Lineker	GREMLIN	RE
		Spectrum, C64, CPC	
20	Galdregon's Domain	PANDORA	RE
		ST, Amiga	

TOP TEN Budget GAMES

1	Treasure Island	CODE MASTERS	2
		Spec, CPC	
2	Gun Boat	MASTERTRONIC	NE
		Spec. C64, CPC	
3	Joe Blade 2	PLAYERS	5
		Spectrum, C64, CPC, BBC, Electron, C16	
4	Ghostbusters	MASTERTRONIC	9
		Spectrum, C64, CPC, Atari 8-bit	
5	World Games	KIXX	3
		Spectrum, C64, CPC, MSX	
6	Spy Hunter	KIXX	NE
		Spectrum, C64, CPC	
7	Super Cycle	KIXX	RE
		Spectrum, C64, CPC	
8	Who Dares Wins 2	ALTERNATIVE	RE
		Spectrum, C64, CPC, BBC, C16, Atari 8-bit, MSX	
9	Footballer of the Year	KIXX	RE
		Spectrum, C64, CPC, BBC, C16, Atari 8-bit, MSX	
10	Commando	ENCORE	11
		Spectrum, C64, CPC, BBC, Electron, C16	

RE re-entry • NE new entry • Last week's positions \
Compiled by Gallup
The charts shown are based on the Open Market, that is retailers who stock a broad range of products. All charts shown are copyright of Gallup.

DISASTER STRIKES FT

FINANCIAL TIMES

America

BUSINESS SUMMARY

Thorn EMI to take

If you're one of those people you subscribe to the theory that computers always decide to crash at the worst possible moment, spare a thought for the poor journalists on the *Financial Times*.

Just as news was pouring in of Nigel Lawson's recent budget the *FT's* super expensive computer system decided to blackout. The assembled hacks and hackettes could only stare at blank screens for nearly two hours.

FT supremos were left pondering the fact that they couldn't get the most important issue of the UK financial year onto the streets.

They decided to draft in a small team of specialists situated a mere 6,000 miles away in Sacramento, California. The team, called SII, tapped into the *FT* network and were appalled to find 300 articles jamming up the Tandem system - all

of which should have been saved onto disks.

The *FT* pleaded with SII to save the day

even though the team had never come across such a problem. "This is like carrying out radical brain

surgery," team leader Eric Gottfredson is reported to have warned. The danger was that all the day's work would be lost.

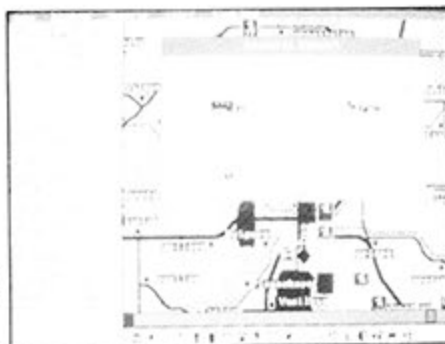
Fortunately, Gottfredson's cure worked perfectly restoring all the data within minutes. However, the cause of the *FT* crash has still not been discovered.

War games up from down under

War games are big news down under. Now you can have a taste of the latest in battle strategy from Australia.

Mindscape in the UK is to start shipping over titles from the acclaimed Canberra based publisher Panther. The firm has done some work for the Australian military and initial reviews of its stuff have been complimentary.

First up will be a World War II title based on the Eastern front called *Fire Brigade*. That should arrive on the ST,



From the wizards of Oz: Australian strategy game to hit UK

Amiga, PC and Mac later this month starting at £29.99.

However, Mindscape reckons it will only be doing about three titles a year. "That crowd like to take their time over games," said the firm's Geoffrey Heath.

Now virus writer turns virus hunter

The man who claims to have written the first computer virus has switched sides - and authored a virus busting package.

Dr Fred Cohen says he first wrote the first virus in 1983 under laboratory conditions. Now he's come up with *Advanced System Protection (ASP)*. It costs £125 for a single user (or £30,000 for a thousand user licence if you so wish) and sports a plethora of gadgets to track down nasty viruses.

The PC program boasts a set of tools including boot block, interrupt table, system files, program and data files.

When asked why he developed the system Cohen grandly replied: "To protect the world from any research I do." *ASP* is available from PC Security on 0628 890390.

A SELECTION OF TITLES FROM PRENTICE HALL

MASTERING FORTH

Revised & Expanded Second Edition

MARTIN TRACY
& ADVANCED MICROMOTION

The most complete beginner's tutorial on the Forth programming language available. The book covers the commands required in FORTH-83 Standard, the programming dialect popular in the Forth Interest Group Hacker Community, and MasterForth, an advanced dialect developed by the author and used by professionals and scholars.

1989 300 pages 13-559957-1 £17.95
Paperback

THINKING FORTH

LEO BRODIE

This instructive guide illustrates the 'elegant logic' behind FORTH and shows you how to apply specific problem-solving tools to software, regardless of your programming situation.

1986 224 pages 13-917568-7 £14.75
Paperback

THE BIBLE . . . STARTING FORTH

Second Edition

LEO BRODIE

A revision of the bestselling introduction to the Forth programming language. An engaging volume which provides a thorough beginner's tutorial on the Forth programming language and operating system. The Second Edition conforms to the Forth-83 Standard.

1987 304 pages 13-843079-9 £20.95
Paperback

FORTH:

A Text and Reference

MAHLON KELLY & NICHOLAS SPIES

Turning readers into accomplished Forth programmers, this book provides a compendium of tools and techniques as well as complete coverage of the words and functions of the language.

1986 224 pages 13-326331-2 £20.85
Paperback

occam 2 Reference Manual

INMOS Limited

A definitive document on the occam 2 programming language. Written by experienced occam programmers at INMOS Ltd, where the language was developed, the manual provides full coverage of how the language may be applied.

1988 144 pages 13-629312-3
£15.95 Paperback

occam Programming Manual

INMOS Limited

"... clearly written, informative and well produced . . . outstanding as a programming manual."

MICROPROCESSORS & MICROSYSTEMS

1985 100 pages 13-629296-8
£15.95 Paperback

occam and occam2 are registered trademarks of the INMOS group of companies.

Programming in occam 2

Geraint Jones &
Michael Goldsmith

A complete introduction to the language and to parallel programming. Jones and Goldsmith introduce occam-2, illustrating the way the language can be used and use a large number of examples which demonstrate the application of parallel programming strategies to real problems.

1988 318 pages 13-730334-3
£15.95 Paperback

Programming in occam

Geraint Jones &
Michael Goldsmith

"... a readable and sound treatise on how to think and program concurrently."

THE TIMES
HIGHER EDUCATION SUPPLEMENT

1987 192 pages 13-729773-4
£15.95 Paperback

Prices are correct at the time of going to press but may be subject to change.

These titles are all in the Prentice Hall International Series in Computer Science, edited by C.A.R. Hoare. For more information on these or other titles in the series, please write to Jean Walmsley, at the address below, for our latest catalogue.



PRENTICE HALL

66 Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RG, England.
SIMON & SCHUSTER INTERNATIONAL GROUP



RENEGADE

THE FINAL CHAPTER

THE FINAL CHAPTER



...the name
of the game

When a guy loses his girl – he loses his mind! Now, in the Final Chapter, Renegade must summon all his strength and lightning reactions as he chases his girlfriend's captors through time itself. Fight against neolithic man,

mediaeval knights, and the tormented undead from within the tombs of Ancient Egypt. Your quest finally takes you BEYOND the present – to a time you'll never forget! ... but remember ... your girl wants to see you alive!

SPECTRUM £8.99 • COMMODORE £9.99 • AMSTRAD £9.99 • ATARI ST £19.99 • AMIGA £24.99

UK HOME

COMPUTERS

UK HOME COMPUTERS

82, CHURCH WARD AVENUE,
SWINDON, WILTS. SN2 1NH

☎ 0793 695 034

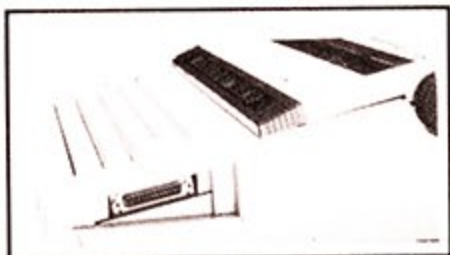
WE ACCEPT EXPRESS VOUCHERS

DAISYWHEEL PRINTER/TYPEWRITER



Manufactured by JUKI, this typewriter doubles as a 10 cps. Daisy Wheel Printer. It has a standard Centronics Interface, and a varying printing pitch of 10, 12 & 15. It can handle paper up to 12" wide and has a keyboard buffer of 12 characters. The correction memory, in

typewriter mode, is 20 characters. In either mode it can print a master and 3 copies. As a printer it has a 2k memory, and weighs in at only 6.8kg. Its overall size is 408 x 343 x 120.5 mm. You would expect over £129.00 for just a Daisywheel Printer of this calibre, and over £90.00 for a Daisywheel Printer. Our Special Price is just £89.95 plus £6.05 Postage & Packing.



HURRY!
Stocks are very limited.

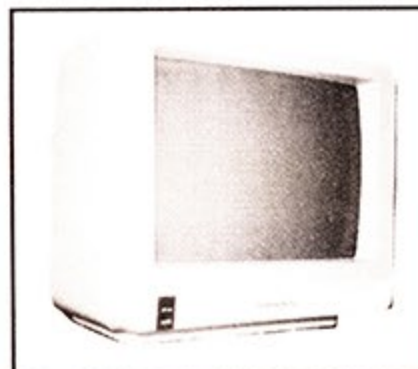
THOMSON COLOUR/MONO MONITORS

MONO

12" Amber/Green Composite Hi-Res£49.95
12" Amber/Green TTL Hi-Res£49.95
15" Amber TTL Hi-Res£59.95
15" Paper White TTL Hi-Res inc. Tilt & Swivel Base£89.95

COLOUR - (RGB/RGBI/COMPOSITE)

12" IBM Compat. 640 x 240 .31 dot£169.95
12" IBM/Commodore etc. 560 x 240£159.95
14" IBM Compat. 640 x 240 .38 dot£169.95
14" IBM/Commodore etc. 560 x 240£159.95
14" 40 col. text for IBM/ATARI Texas etc.£149.95



BELOW HALF PRICE

Please include postage at £7.05 per Monitor
Send your order or for further details TODAY !

ALL GOODS SOLD SUBJECT TO OUR STANDARD TERMS AND CONDITIONS. AVAILABLE ON REQUEST

FUTUREPLACE COMPUTERS

12 Loampit Hill
Lewisham
London
SE13 7SW

TELEPHONE: 01-692 8700

WE ACCEPT EXPRESS VOUCHERS

ATARI ST & AMIGA OWNERS WHY PAY TOP PRICES ALL GAMES SOFTWARE AT 30% DISCOUNT

EXAMPLE PRICES	ST
F.O.F.T.	21.00
The Games	14.00
Lombard Rally	17.50
Barbarian II	14.00
Speedball	17.50
Pacmania	14.00
Hostage	17.50
Spaceracer	14.00
Falcon	21.00
LED Storm	14.00
Galdregon's Domain	14.00

**3 1/2 DOUBLE SIDED DISKS
DOUBLE DENSITY
135 TPI GUARANTEED**

	Price
10	£8.90
25	£22.00
50	£43.00
100	£84.00

Please add £1.00 P&P

Discount Chart

RRP	OUR PRICE
£12.99	£9.00
£14.99	£10.50
£15.95	£11.00
£16.95	£12.00
£17.95	£12.50
£19.99	£14.00
£22.95	£16.00
£24.95	£17.00
£29.99	£21.00

DRAGON'S LAIR £31.50

Atari 1040 Professional Pack	479.00
Atari Super Pack	349.00
Amiga 500 + Modulator	369.00
Star LC10 Colour Printer	245.00
Citizen 120D Printer Parallel Interface	138.00
Citizen 180E Printer Parallel Interface	159.00
Philips CM8833 Colour Monitor	235.00

Atari Mouse Extender	5.95
Atari To Scart Lead	14.99
Mouse Mat	4.99
Amiga Cumana Drive	99.99
Amiga 1 meg Upgrade	139.00
100 Cap Disk Box	9.95
50 Cap Disk Box	7.50

Shop Hours Monday to Friday 10am - 6pm
Saturday 9am - 6pm

OPEN BANK HOLIDAY MONDAY

CREDIT CARD HOTLINE 01-692 8700

ACCESS VISA DINERS CLUB AMERICAN EXPRESS



Free delivery on all hardware. Software add £1.00 per order. All prices include VAT. CWO to Futureplace Ltd. Also Available to order MOBILE PHONES and FAX MACHINES

SEGA®

Number 1 for TV Arcade Action



MASTERSYSTEM PLUS™

£99.95



SUPER SYSTEM™

£129.95



CONTROL STICK™

£14.95



3D GLASSES™

£39.95



MASTERSYSTEM™

£79.95



LIGHT PHASER™

£29.95

Spring Madness

*SUBJECT TO AVAILABILITY FROM PARTICIPATING STOCKISTS

The Sega Mastersystem inclusive of Light Phaser *available to you for only £89.95. Recommended Retail Price £109.90

The No.1 best selling console in the UK

Distributed by
Virgin Mastertronic, 2-4 Vernon Yard, Portobello Road, London W11 2DX.



RAMPAGE

You and your buddy are ready for a little action tonight 'cause you just happen to be in the mood to tear up the town. You'll demolish buildings, grab and chomp horrified spectators and other yummy morsels, and flatten puny helicopters and other antagonists who try to stop you!

Addictive gameplay, marvellous graphics combined with originality and a great sense of humour! C+VG, March 1989



'R' TYPE

They came from a Dimensional plane clear across the galaxy, wreaking havoc and chaos from star system to star system. With an evil that smothers all resistance with fear and terror, the horrid creatures of the Bydo Empire are now knocking on, Earth's front door.

Is by far the best blast available on the Sega, so it goes without saying that no shoot 'em up fan should be without it! C+VG, March 1989



CYBORG HUNTER

The year, 2242 you are Paladin, the toughest bounty hunter in the galaxy. Monstrous Cybags are threatening to take control of the Universe under the direction of their evil leader, Vipron. Your mission is to gain access to Vipron's chambers and destroy him. Sound easy enough? It isn't!

Horizontally scrolling arcade adventure, action packed! C+VG, March 1989



Y's

You are Aron Christian, a swordsman washed ashore by the might and fury of a hurricane. You were found half dead by a kind and humble fisherman and he restored you to health. The fishing village sat at the edge of the great plain. Rising in the distance was a small mountain range with an ominous tower at its peak. 'That is the Tower of the Doomed', the fisherman told you as they made the sign of the evil eye. 'It is the place where the troubles of our land began'. As you watched the tower, you knew that your destiny waited there.

The whole thing looks incredible - the best I've seen on the Sega. Y's offers depth and playability and will keep you engrossed for weeks. It's a must! C+VG, March 1989

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.

520 STFM Super Pack

£349.00

Inc VAT and Next Day Delivery

Super Pack includes:

- ★ 520STFM 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ £450 of games software including BUGGY BOY, TEST DRIVE, MARBLE MADNESS, WIZBALL and 17 more.
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE.
- ★ FREE JOYSTICK!
- ★ All leads, manuals PLUS MOUSE and free mains plug!

REMEMBER! Many ST's do not come with BASIC-ours come with ST BASIC REV D by Metacomco.

Also available with only one free game and no joystick or Organiser -

£269.00 inc.

Amiga A500 System 1

£365.00

Inc Vat and Next Day Delivery

System 1 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.
- ★ Amiga BASIC, Amiga EXTRAS, Workbench PLUS the Amiga Step by step Tutorial.
- ★ All leads, manuals PLUS MOUSE and mains plug!

Amiga A500 System 2

£389.00

- ★ Amiga A500 System 1 PLUS £230.00 worth of software comprising 10 games

1040STFM Super Pack

£439.00

As above but with 1 meg 1040STFM

ATTENTION AMIGA A500 OWNERS!
A501 Ram Clock Card - Dragon's Lair
£174.95

1040STFM Business Pack

£439.00

Business Pack Includes:

- ★ Atari 1040STFM Keyboard with 1 meg memory and 1 meg built-in disk drive plus TV modulator.
- ★ £360 worth of Business Software including MICROSOFT WRITE word processor (£150), SUPERBASE PERSONAL Database (£60) and VIP PROFESSIONAL Lotus 123 Spreadsheet clone (£150)
- ★ All leads, manuals and mouse

Amiga A500 System 3

£399.00

- ★ Amiga A500 System 1 PLUS £250 worth of software comprising 9 games and PHOTON PAINT graphics package.

Amiga A500 System 4

WITH 500 FREE AIR MILES!

£549.00

includes everything in our Amiga System 1 package PLUS SPRITZ Graphics Package, disc storage wallet for 25 discs, Who Framed Roger Rabbit, Nebulus PLUS 500 FREE AIR MILES,

ACCESSORIES

Quickshot II Turbo Joystick	13.95	Branded Memorex 3.5" DS DD Disks	
Competition Pro 5000 Joystick.....	13.95	Box of 10	13.95
Competition Pro with Autofire.....	14.95	Roll Top Disk box for 100	
Konix Speedking Joystick.....	11.95	3.5" disks	16.95
Red Mouse Mar with Amiga lofo....	6.95	Amiga A501 1 Meg Expansion..	139.99

PRINTERS

Star LC10 including interface lead for ST/Amiga	£239.00
Star LC10 colour including interface lead for St/Amiga.....	£269.00
Citizen 120D including interface lead for ST/Amiga.....	£159.00
SEIKOSHA 80 COLUM PRINTERS - AMAZING PRICES	
Seikosha 9 pin NLQ	£139.00
Seikosha 24 pin LQ.....	£279.00

EXTERNAL DISC DRIVES

Atari SF314 1 Megabyte.....	£139.00
Amiga A1010 1 Megabyte	£139.00
Cumana 1 Megabyte Atari or Amiga	£99.95

AMIGA 1 MEG!

£509.00

Announcing the new Amiga 1 meg-an A500 system 1 with fitted 1 megabyte memory expansion and clock card PLUS TV Modulator AND DRAGON'S LAIR a six disk 1 meg megagame!

AMIGA 1 MEG+

£529.00

Our Amiga 1 meg + also includes the £230 worth of games software normally given with our A500 System 2 Games Pack.

MONITORS

Commodore Amiga A1084 Stereo colour monitor inc lead	£279.00
Atari SC1224 Colour Monitor inc lead.....	£269.00
Atari SM124 Mono Monitor including lead	£104.00



CREDIT CARD ORDERLINE ☎ 0908 78008 (Mon-Sat 9am - 6pm)
We've moved to larger premises - Callers most welcome!

DIGICOM

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

All prices include VAT and delivery by courier



PROGRAMMED RESPONSE

It seems that you are the first serious, no-games orientated, multi-format magazine, so, how about a programming series for serious users? C would be a good choice, or maybe BASIC, as its variants are not too bad.

William Hadden, Co. Down, N Ireland

● *I must admit to being very dubious about programming series. There's the problem of language differences between machines, and one or two pages a week is a bit limiting - you can quickly get bogged down in pages of detail. I rather think programming is something better tackled in books, of which there are millions about, and plenty specific to your language and machine.*

IN PRAISE OF AMSTRAD

Some sections of the press dealing with computers, including yourselves, seem to refer disparagingly to Amstrad, its boss and its computers at every opportunity.

I think you are doing a grave disservice to prospective PC buyers by intimating that Amstrads are not a good buy. Just give the facts and leave them to make up their own minds.

Amstrad is a very successful British company who brought a new dimension to home computing and made work for a lot of extra journalists. It doesn't help to knock them all the time. In your own columns last week you report that Amstrad have by far the largest share of the market in the UK, forcing IBM to bring prices down. 'Nuff said; I'm sure that Amstrad have a trick or two up their sleeves yet.

Soon I hope to buy a PC to complement my PCW and it will probably be an Amstrad PC1640. I was rather taken with the Fred Nerk Turbo Special, but I don't think Fred will be around as long as Amstrad. And by the way, tell Neil to stop knocking in nails with his computer keyboard, or the Tandons won't last longer either.

Ron King, Bedford

● *Come on, it's not as simple as that. When someone asks you the*



• Amstrads cheap and nasty? Not at all, says Ron King (In praise of Amstrad)

In Express 19, a letter from Neil Barnes stated that "Amstrad PCs are rubbish, have bits missing, break down a lot and corrupt data". You apparently agreed with this, saying that "Many people feel that they are clanky, and built down to a price rather than up to a specification".

I am a design engineer of forty years' experience and for some time was a plastics mould designer in a major plastics company. I am fairly new to computing and just over two years ago I bought a PCW8256 which I bought as a word processor, but use mainly now for programming as a hobby.

I have found the machine to be very sound mechanically, with good quality mouldings, and it has been reliable. When I upgraded the memory I had a good look inside (another of my hobbies is electronics) and found good design and workmanship throughout.

On reading the comments noted above I made a visit to my local Dixons to compare the Amstrad PCs with IBM, Olivetti, Atari and several good quality typewriters. Quite frankly I could see no difference in quality in the mouldings or keyboards, nor in 'feel'.

points for and against various PCs, reliability and workmanship have to come into it. It is a relevant and important fact to mention that many people are not over-enthusiastic about, for example, Amstrad PC keyboards.

This is not to say that Amstrads are unreliable or badly put together or anything - in fact, if you look again at the letter and my reply, I actually disassociated myself with the correspondent's experiences with his Amstrads, not just because I don't want to be sued, but also because the Amstrad PC and PCW I've bought have given me no trouble whatever.

Maybe this particular reader had just been unlucky, but again, different people are bound to have different views on a machine that is built to a price.

I think it would be a bit of an exaggeration to say that Amstrad has caused IBM to lower its prices; the PC market generally has seen prices falling and specifications rising.



Dear Reader

More pages packed with another selection from our postbag and Rob Ainsley's replies. Have you got something to say? Make your voice heard in computing's liveliest letters page!

Send your contributions to:

Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

PS. Sorry, we just don't have the time to give personal replies, whether you include an SAE or not. We're too busy putting Express together!

FALCON GOOD

Could you tell me if there is a new version of Falcon out for my ST? It's just that some other (and much inferior) computer mags which have reviewed the game show via their screen shots that their version has a different title page to my version 1.0.

Also, do you know anything about the ST+? Rumours have been flying around for ages about this new machine but Atari have said nothing. Well, not to me anyway.

Finally, how do you subscribe to your brill mag? Keep up the good work!
Chris Howell, Coventry, West Midlands

● *The ST Plus, we reckon, will be launched in September. People have been talking about it having a 68030 chip, being five times faster than the current ST, TOS-compatible, one*

drive, having 2Mb RAM and will be about £999. We were told by Atari it would be for "the real guy who's buying power". See this week's Club ST for some up-to-the-minute info.

As for Falcon, there are no new versions out (unless you count newer bug-fixed Falcons as 'new versions') and the difference in screens is probably down to the fact that the versions reviewed were pre-production and hadn't had all the graphics fully finished.

Subscription to Express costs £24.95 for 56 issues, £12.50 for 26, from Express Subscriptions, The Old Barn, Somerton, Somerset TA11 7PY.

POKES IN THE EYE

Could you please answer a few questions for me, about these laws they are trying

BY THE BOOK

A tip to anyone going to The Alternative Micro Show, which is being held on April 1st at the New Horticultural Hall. Whilst in London, they should consider a trip to Charing Cross Road, to visit Foyle's Book Shop. There are plenty of books there in the Computer Department for our information-starved owners of the less popular micros.

I have seen books on the Dragon, the Lynx, the Einstein, Electron, the Oric, Texas TR90/4a, QL, Atari 8 bit, MSX, and would you believe, I even managed to procure a book for my poor old Aquarius - do you remember them? I didn't manage to spot any books on the Jupiter Ace, Enterprise or Memotech, but they may well be there amongst the hundreds of books.

Owners may be interested to know that Interface Publications are selling off their books on the obscure micros very cheaply (from 50p to £1), so they may well be worth writing to. I actually own an Amiga amongst my computers, but there's nothing like trying to obtain

information and software for the obscure computers. It's a challenge, which is enjoyable and usually far cheaper than maintaining the mainstay of my hobby, the Amiga.

Anyway, I hope that this information is of some help to fellow owners of 'odd and old' micros. See you all at the show!
T A Blay, Romford, Essex

● *Thanks for the info - and no, all you 16-bit owners, the Alternative Micro Show isn't an April fool! We'll be reporting on it in Express for those of you that can't go.*

And just to show that we do recognise there are people out there in the world who enjoy using machines other than the PC, ST, Amiga et alia, we're sending you the mystery prize for this week's best letter.

Sorry, we don't have any software for the Aquarius - will you settle for an Amiga program instead?



DISTRUST OF COMMIES

Why is it that Commodore (in the UK at least) always manages to come across as hopeless at selling its Amigas? The announcement (*Express* 19) of its new bundled package looks extremely weak as against Atari's (*News*, *Express* 18).

I cannot imagine many people wanting to pay £100 over the odds just to get £160 of air miles vouchers when there are several suppliers offering Amiga 500s with 9 or 10 games (or more), plus a paint package, modulator, etc. for the normal price of £399, or less.

Also, if Commodore wants to sell to 'yuppies', most of these will want a dedicated monitor, and not a TV modulator. Just doesn't make any sense (and not for the first time). Now if Commodore put together a bundle including word processor, music and paint package, spreadsheet and database, a half meg memory upgrade, and at least 5 good games - all for £500 or less - maybe then people would take it seriously.

It is about time Commodore got its act together otherwise Atari is going to run it into the ground, which would be a shame seeing that Amigas appear to be better machines (although with Super STs (TTs) and ATWs coming, etc. for how long one wonders?)

Why does the Amiga have such a dodgy reputation for crashing? Is it due to a hardware fault, or is it badly implemented software?

Vee Van Dam, Glastonbury, Somerset

I finally got my Amiga and have now found out why people moaned at *Workbench* 1.2. It's awful. It would be awfully nice of Commodore if they offered free-ish upgrades to 1.3 (I'd gladly send my disk back and pay for postage and packing). I think this idea would sell more Amigas than adding £100 to the price and offering 'free' plane tickets with it! If they are going to give vouchers away why not software

vouchers - surely even yuppies would find that more useful. Adding £100 is a bad move especially as the ST is coming down. I have now used both machines and can say that a price increase is not warranted; Atari will clean up.

Beware all you Amiga owners with 2.5 volt power packs. Your time is limited. My mate had his Amiga for two hours before it packed in, he took it back and went through four power packs before finding one that worked (a 5 volt one). At this point a free flight to AIDS-riddled Amsterdam would not have cheered him up!

Give the Amiga a free MIDI interface and improved OPERATING SYSTEM then Commodore could be in with a chance.

My favourite games so far are *Hybris* and *Tetris* but *Hybris* costs £25, and sometimes all your smart bombs go off at the same time, which is mildly annoying. (I had messed about with the options).

Sorry about the anagram of *New Computer Express* I sent you that didn't work. It should have been 'super wops excrement'. I hope you're not offended!

Neil Barnes, Birmingham, West Midlands

● **We've had a lot of letters commenting on the various bundles offered by Commodore and Atari, and everyone comes to roughly the same conclusion as the correspondents above.**

The Amiga's reputation for crashing rather a lot probably comes from the fact that it crashes rather a lot. This is down to the operating system - the software - rather than the hardware. Quite a surprise to anyone coming from a machine run on MS-DOS or CP/M - systems which are admittedly much simpler, but which hardly, if ever, fall down.

● **The legalities of software copying are very, very involved and there's no simple answer to the points you raise. The good news is that pokes are here to stay; whatever technical points might be made about the alteration of copyright material (i.e. the game's code) software houses are not going to get after magazines for printing pokes, or games players for discovering them and telling people about them - provided of course it's all harmless fun to spice up a game, and not a way of deprotecting a game to copy it.**

As for the deprotecting devices you mention, this is dodgier ground. We may well be seeing legislation introduced in the future which makes manufacture and possession of these grounds for legal action, and the current attitude of the computer industry is certainly hardening against piracy.

YOU DIG

You may be interested to hear of a recent archaeological find. During a dig, a scroll was found, which when translated was entitled 'New Abacus Express'. This covered many aspects of abacus ownership, and was a very good read. It was particularly memorable for its letters

section. Letters poured in over such subjects as why the Amigacus was better than the Ataracus, why the Ataracus was better than the Amigacus. Why was there no section devoted to other, much less popular abaci, eg the Psiocus, and letters about letters about why one abacus was/was not better than another. Fortunately, being civilised peoples, we have left such things behind in the past.

Matthew Wood, Croydon, Surrey

● **Hmm. Funny, I always thought Amiga, Atari, Psion and so on were Latin and Greek anyway. (Amiga, Amigam, Amigae, Amigae, Amiga - first declension feminine; Atari, Ataros, Atarorum, Ataris, Ataris - second declension masculine plural; Psion, Psion, Psiou, Psio - neuter).**

RAMM BAM

May I inform your readers that 'Ramm', the independent user group for the Ram Music Machine, is now being run by myself.

The club is expanding its scope to cover other hardware such as the Spectrum, XR1, Cheetah interfaces for the Spectrum and so on, as well as continuing support for the Music Machine. We will be publishing articles on all aspects of music on the Spectrum - MIDI, MIDI programming, sampling etc.

The club particularly aims to encourage people taking their first steps into music as well as catering for the more knowledgeable. Information about the club can be had from 05242 62258 in the evenings. I'll also be at the Northern Sinclair Show at Leyland.

Sean Sanderson, Lancaster

CLASSIFIED INFORMATION

Have you ever thought of starting up a classified section like most magazines such as ACE? Then people can sell their computers and things like that and so on.

Dean Barrett, Bargoed, Wales

● **Aha! A timely question. Turn to the inside back page and, for free, you can advertise your computers, things like that, and so on.**

BLOT ON THE COPYBOOK

I have been reading *Express* now for the past eight weeks or so and will continue to do so providing the standard is kept high. (That wasn't a threat!)

I don't have a computer at present (I got rid of my Speccy a few years ago) but I intend to buy an Amiga as soon as I find some cash. I'm going to be rich and famous once I get my paws on the Steinberg PRO 24 - just you watch me!

Seriously though, I have a query. In issue 18 under the 'Cut to the Quick...' article the enclosed picture caught my eye. It seems to be identical to the cover of an LP by the German group Software (they make some great music with computers). I would be obliged if you could enlighten me.

Steven Porter, Craigavon, N Ireland

● **It's quite possible that they used the Mandelbrot demo from 'QuickBasic' on the cover, and they certainly look very similar.**

Rorschach devised a system to gauge people's personality from the shapes they 'saw' in patterns like this. Most people used to just say 'ink blots'. Now they just say 'Mandelbrot sets'.

SOMETHING WONDERFUL

Bless you gentlemen for your very timely article which appeared in *Express* 19.

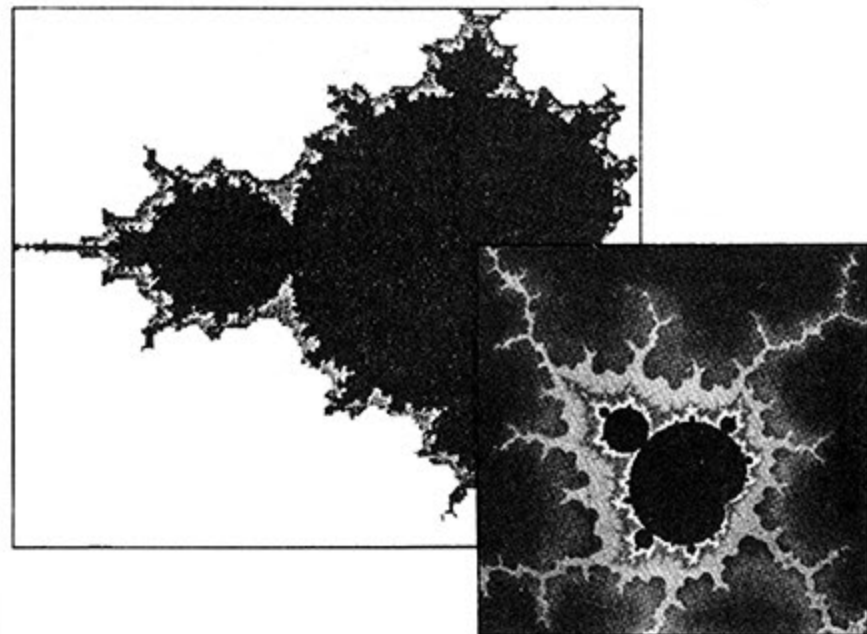
Until yesterday I had never experienced the horror of these viruses as I had, quite wrongly, assumed that such things were not man made but were something that had crept into systems by some computing fluke.

I am a young chap of nearly seventy summers and winters with a history of a major by-pass behind me. Otherwise I'm fit. But when I saw on my recently acquired Amiga the message 'Something wonderful has happened' etc. it nearly caused me to have a second heart attack. I immediately thought that my seven hundred quid's worth of computer and monitor were disease-ridden and that I would be better off with my poor old Amstrad and Commodore which have been relegated to dusty suitcases...

I contacted a friend who reassured me that all was not lost and explained what could be done. Also, today I read your article on the subject and the sun started to shine again.

This opportunity must be taken to thank you very fervently for your excellent article which has saved my sanity and has prevented my shuffling off this mortal coil before I am ready to go.

In conclusion I must say that when it is time to shuffle off, I would dearly like to take with me all the scumbags who have



● Amazing likeness: (Left) Album cover for German group 'Software', (Right) Mandelbrot set in QuickBasic (Blot on the copybook)

SNIPPETS

MACHINE SPECIFIC

...I can understand why people argue about the different machines. Naturally, the machine you've got is the best (even if you know it isn't) because it's yours - and it would be silly if you had a machine that you didn't like or were not satisfied with.
P Harrison, Leicester, Leics

COFFIN FIT

The final nail in the coffin of the Amiga for me as an engineer is the amount of Amigas that seem to be breaking under the slightest strain...
Andy James, Plymouth

SODAN DEATH

I was surprised to see the *Sword of Sodan* cheat in Amiga Blit (Express 18) which was credited to me - first

because I didn't write it, and second because it doesn't work!...
Basil Pigg, Devon

FINAL DEMAND

My advice to people who are frustrated with waiting awful lengths of time for games is to phone up and demand your money back. Then you should receive your games within a few days...
G Jones, Boldmere, Birmingham

STRIKE AGAINST REDUNDANCY

...My glowing praise of Express has to be qualified, however, by mentioning that many of the 'debates' featured on the Mail pages attempt to perpetuate redundant arguments...
Jim Black, Muckamore, Antrim, Republic of Ireland

think it's a cop-out to say 'oh, I'm too old to start anything new now'. Second is the fact that you still place Cottingham firmly in East Yorkshire (as I do, being Hull born and bred) despite this 'North Humberside' nonsense that they tried to foist on us in 1974, exactly fifteen years ago, on April Fool's Day. I'm all for new technology and progress, but some things remain sacrosanct!

ENGINE ROM

Please tell me where I will be able to obtain more information on the PC Engine because I haven't seen it advertised much, and this is a shame because they

are losing out on sales.

I think this will be a hit machine, bigger than the ST, Sega, Amiga etc. The PC Engine is reliable, fast and has brilliant graphics. I also hope they will make this machine compatible with joysticks because the games are ruined without them.
Blain Brown, Sutton Coldfield

● Though widely available in Japan (for well under £100) few PC Engines have been imported into the UK. Micro Media on 0584 75604 will sell you one for £200 (£225 to use with a TV set, or £400 with a monitor). As far as we know the PC Engine is not planned to work with a joystick.



● You can pick up NEC's PC Engine for well under half the UK price in Japan. Unfortunately the plane fare is £580 return (Engine ROM)

perpetrated such a lousy, filthy and malignant trick on innocent people.
Robert Lamb, Cottingham, East Yorkshire

● Thanks very much, gosh it was nothing, all in a day's work etc. Incidentally, erudite and precise research shows that the chances of a working computer virus being generated by chance (through

faulty copying of a disk, for example) are so small you would only expect one to occur every 10²⁸³ years - that's a one followed by 283 zeroes.

Two things I find very encouraging about your letter. First is that, despite the reputation computing has of being a young people's thing, you're buying and happily using up-to-the-minute technology (I always

MERRYMODOE

**BUSINESS, UTILITY
EDUCATIONAL GAMES
& PERIPHERALS**

MAIL ORDER
133 TUDOR ROAD, HAYES, MIDDX UB3 2QF
TEL: 01 573 4314

**ALL PRICES
INCLUDE VAT P&P**

GAMES

	AMIGA	ST
Falcon.....	21.95	18.95
Operation Wolf.....	18.95	15.50
TV Sports F/Ball.....	21.95	—
Dungeon Master.....	18.95	18.95
Stos.....	—	21.95
Elite.....	18.95	18.95
Afterburner.....	18.95	15.50
Batman.....	18.95	15.54
Speedball.....	18.95	18.95
Baal.....	15.50	15.50
Obliterator.....	18.95	18.95
Double Dragon.....	15.50	15.50
Captain Blood.....	18.95	18.95
Sword of Sodan.....	21.95	—
Falcon.....	21.95	18.95
Purple Saturn Day.....	18.95	18.95
Thunderblade.....	18.95	15.50
Flying Shark.....	18.95	18.95

**MERRYMODOE
GIFT VOUCHERS
SOLVE THOSE GIFT PROBLEMS**
£5, £10 & £20
POSTAGE FREE

**AMIGA 500
WITH MODULATOR
PHOTON PAINT
WORKBENCH 1.3
ONLY**
£350
INCLUDING
VAT & POSTAGE

**PLEASE NOTE
THIS OFFER EXCLUDES ALL
EXISTING OFFERS**

AMIGA UTILITIES

Animator.....	39.95
Audio Master.....	32.95
Amigafile.....	34.95
Digi Paint.....	42.50
Digicalc.....	29.95
Drum Studio.....	29.95
Excellence.....	149.95
Express Paint.....	50.95
Superbase Personal.....	69.95
Wordperfect.....	172.50

**TELEPHONE OR WRITE FOR FREE
PRICE LIST AMIGA, ATARI ST, C64,
AMSTRAD, SPECTRUM,
IBM & COMPATIBLES**



Disk Box 3.5 holds 50 Lockable.....	6.95
Amiga Dust Cover durable clear plastic.....	8.50
3.5 Drive Cleaner.....	5.95
Top Quality mouse mat.....	4.95



CUSTOMERS IN EIRE PLEASE CONTACT: MERRYMODOE, PO BOX 26, CARLOW. TEL 0503 41543

TRADERMAIL

ASK FOR YOUR FREE NEW BOXED SHUGGART HARD DISK WITH EVERY ITEM BOUGHT FROM THIS ADVERTISEMENT

**MINISCRIBE 40 MEGABYTE
HARD CARDS £249
NEW BOXED AND GUARANTEED**

**THOMPSON 12 INCH MONO
GREEN MONITORS
NEW AND BOXED £45**

**15" HIGH RESOLUTION
VGA**



£95

PAPER WHITE
MONITORS AT
UN-REPEATABLE
PRICES
AT, PS2 & TTL
VERSIONS
ALL GUARANTEED

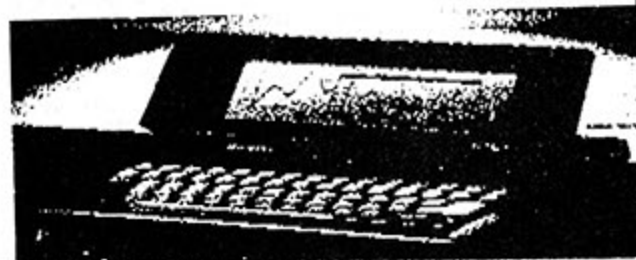
RICOH A4 SCANNERS £495
NEW BOXED WITH FULL GUARANTEE
300DPI WITH CONTROLLER CARDS AND
SOFTWARE, FULLY PAGEMAKER/VENTURA
ETC COMPATIBLE

WESTERN DIGITAL £259
WD60Ti TAPE STREAMERS
NEW BOXED WITH A FULL GUARANTEE INCLUDING DRIVER
CARD AND FULL SOFTWARE IN BLACK OR GREY FONTS

MBC 16LT LAPTOP
640K, 8MHz, TWIN 720K
DRIVES, 640X200 SCREEN

£649

INTERNAL
BATTERIES
LESS THAN
8 LBS.
SERIAL/PAR
OGA
INTERFACE
MSDOS 3.2



THE **star**
COMPUTER PRINTERS

brother

Tandon

VICTOR

AND MANY MORE

PCA20 £949
PCA20+ £999
PCA40+ £1099
PCA70+ £1269
PAC286+ £849
386-16SF £1499
386-16/40 £1649
386-20/40 £1999
386-20 DP £2349



A4 VGA PAPER WHITE
MONITOR COMPLETE
WITH CORNERSTONE
DRIVER CARD AND
SOFTWARE
£695

**JUKI 6200 DAISY WHEEL
PRINTERS WITH CUT SHEET
FEEDERS £140**

256K-10 DRAM CHIPS 9 FOR **£49**

3.5 INCH 720K DISKS 50 FOR **£35**

5 1/4" 360K DISKS 50 FOR **£30**

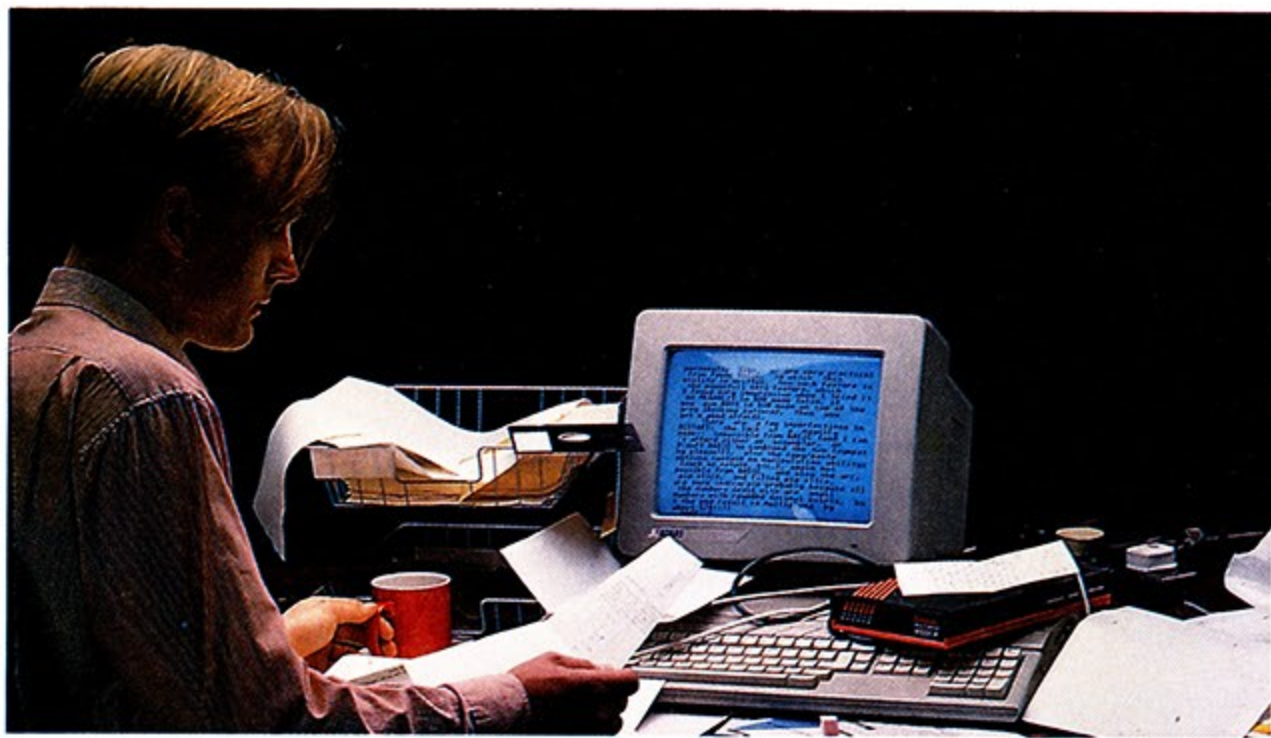
PC/XT MULTIFUNCTION CARDS
CLOCK/CAL/SER/PAR
UP TO 384K **£39**



TELEPHONE
0527 575486



Comms to us all



The urge to communicate is a basic human instinct. Telephone users, Radio Hams, CBers, chat liners – someone, somewhere is trying to contact others to exchange information, or just for fun. And with a micro, you can communicate with any other computer in the world through the phone lines. A huge range of services, information and leisure awaits you.

But how much does it cost? How can you avoid those legendary huge phone bills that comms users always seem to have?

Jerry Glenwright tells you what it's all about – and shows you how to be a Smart Comms User...

• Both comms users, both accessing the same service. But guess which one ends up with a phone bill over ten times the other's. The World of Communications offers a wealth of services and facilities – but you have to know how to make the best of it all...

Do you visit the theatre? Use airlines, buy flowers, play computer games? With your computer and a modem, you can reserve your theatre seats in advance and pay for the tickets using an electronic transfer of funds from your bank account to the theatre. Likewise, airline tickets. If you want to send flowers to someone, contact with one of the larger florists will allow you to do this from your terminal screen.

Games? On-line, interactive games are the latest (and possibly the most enjoyable) form of computer 'play'. You can battle your way through jungles, caves, houses – anything – in conflict with other on-line users who are far more responsive than anything computer generated.

If you're a wholesaler about to supply a large

quantity of products to a company which is new to you, and you are unsure of their 'credentials', you can request a thorough report of the company's status. This will include a list of registered assets and share-holders, and a summary of their financial standing.

Lonely heart? Just type your details into one of the many on-line dating services, sit back, and wait for the flood of electronic sweethearts aching to meet you!

The latest news, share prices and stock movements are all available and updated constantly. You can send a telex or fax, contact ships at sea, download software, cross-question prominent figures or simply make contact with other computer users to discuss life, the Universe and everything.

EVERYTHING COMMS TO HIM WHO HAS A MODEM

So what is comms? How can two computers of quite different architecture and operating systems be joined together to allow the transfer of data between them? What do you need to effect this connection, and will it all be possible using your machine?

'Comms' is the term used to describe the joining together of two or more computers, (irrespective of type or model – micro, mainframe or whatever) to allow them to communicate information to each other. This is via some medium such as the PSTN or Public Switched Telephone Network – the phone lines to you and me.



• Two of the services on offer on Micronet's pages. PC Base is an on-line PC 'magazine' with literally up-to-the-minute news and reviews; Shades is a multi-user game, or MUG, a sort of computer-controlled D&D game

In an ideal world, it would be possible to plug your computer straight into the BT wall socket and begin transmission to the service of your choice (although you appear to be doing just that with machines such as the PPC640, you are in fact transmitting via a built-in modem).

Unfortunately, when telephone transmissions began, no-one envisaged the use of the lines for anything other than voice-grade communications. Consequently, the telephone lines cannot handle digital transmissions directly from the computer. This is where the modem comes in. If you are going to attempt communication using your computer, then the modem is an indispensable piece of equipment.

'Modem' is an acronym for modulator/demodulator and is an electronic device which transmits a continuous tone into the telephone line. This tone is known as the carrier. By varying the tone an 'intelligent' signal can be sent down the telephone line. The process is known as modulation. At the receiving end, the modem interprets the signal by separating the information from the carrier tone - demodulation.

Comms software on your computer translates the information to be sent into a digital signal which is then transferred from the computer to the modem via a serial cable. The serial cable is one in which data is transmitted one bit after another (imagine a queue, with each person in the queue progressing in single file) until all the data has been sent.

As data is received by the modem from the computer, so it is sent down the telephone line to the receiving modem, there to be translated and passed to the host computer. This is why computers of entirely different architecture can 'talk' to each other.

The signals transmitted and received by the modems are common to all machines, and it is the communications software which translates these common signals into information specific to that computer.

What you need

Presupposing you have a telephone line with a modern jack-plug style socket, the next most obvious requirement is a modem.

You must decide just what it is that you want to do. If your only activity on-line will be dialling up the occasional bulletin board, then a 300 baud acoustic modem will probably suffice. Anything more adventurous, and you will need a direct-connect modem with speeds in the range 300-2400 baud, preferably with auto-answer and auto-dial. This will allow you to contact all the major services as well as hobbyist BBSs. You will even be able to run your own board if you want to!

Software? A myriad of comms packages exist for all the well-known machines, so, as with modems, work out your requirements and scan the mail order ads in the computer magazines. If, after buying your modem, your bank-balance is in a sorry state, then try the public domain. Some of the best comms software around is available free, especially for the Atari ST and the PC.

MODEM LOVE

Modems come in all shapes, sizes and configurations. They can be automatic or manual, acoustic or direct-connect, and before choosing a modem, you must decide what you want it to do.

The first modems available to the home market were the acoustic couplers. These had a solid oblong body, with a rubber cup at each end. The handset of the telephone was plugged into the rubber cups, and the modem generated an audible 'whistle', which was heard by the telephone and transmitted down the line. Unfortunately, the telephone could also hear any other noises that happened to be in range of the handset, and transmissions were frequently corrupted.

Nowadays, with the introduction of the BT wall socket, acoustic modems have been superseded by widely available direct-connect machines. This type of modem has a cable with a plug at one end, which can be inserted straight into the wall socket. If your modem has an automatic dialling facility, you don't even need to have a telephone. The signal is transmitted directly into the telephone line, cutting out the possibility of extraneous noise being overheard by a telephone and corrupting the transmission.

Some of the first direct-connect modems were of the manual variety. This meant that before communications could begin you had to select, via a controlling knob on the front panel, the speed and configuration of the modem. If you wanted to communicate with an information service at 1200 Baud, then you had to 'dial' 1200 originate, dial the telephone number, replace the telephone handset once the modem had made contact and then start your communication - there was obviously room for improvement!

The more modern automatic direct-connect modems can offer facilities such as auto-answer and auto-dial. An auto-dial modem means that you can type the number of the service you wish to contact into the communications software that you are running, and the modem will automatically dial the number for you. No messing around with telephones! Using an auto-dial modem, the process of contact can be speeded up, thereby saving you time. In computer communications, time really does mean money. Phone calls are not cheap, so the quicker the procedure is, the less money you are going to spend.

An auto-answer modem is one which will pick up (or 'answer') the telephone line when another machine is calling yours. With an auto-answer modem, and the correct type of software, you can start your own information service (bulletin board). The computer can be left unattended, and will happily answer all calls to your service.

TAKING SPEED

Another area in which greater speed can reduce transmission times is the actual speed of the information across the telephone lines. The data can be transmitted using a range of speeds, and

Some of the best...

Software

Mirror II: A fully-featured comms package which is bundled with the Amstrad portables but which can be bought separately for other PC compatibles. Contains interesting features such as the ability to reside in the 'background' whilst you run a DOS application, it can then be switched back into the foreground to allow you to continue with your communication. Contact: SoftKlone/Management Data Processing Ltd on 0225 604901. Prices around £83

Dial-Up Personal: Comms package aimed squarely at the home user but which is still a very usable piece of software. Contact: PMS on 021 643 7688. Around £90

GEM Comm: Not surprisingly (given the name) a GEM-based communications program which runs only on the Amstrad machines. Incorporates many of the advantages of GEM applications - and also lots of the disadvantages! If you like using GEM then maybe this is for you, otherwise don't bother. Contact: Digital Research on 0635 35304. £70 or so.

Modems

Pace Linnet: Budget priced modem with partial Hayes compatibility and a serial cable incorporated in the price. Contact 0274 488211; prices c. £163.

WS4000: A budget modem from Miracom which markets quite a range of modems and has been doing so for several years. Hayes compatible with speeds of V21 and V22. Auto-dial and auto-answer as standard. Contact 0473 233888; price c. £92

Dataphone Designer: Cheap modem with a large range of features available from the front panel as well as under software control. Reset, speaker on/off etc. Contact 0733 230240; price c. £115

these are indicated by a Baud rate value. The baud rate is measured in terms of signals per second (each variation in the carrier tone), and not bits/second as some sources would have you believe. At the slower speeds these two equations are identical, but at the higher speeds, the baud rate is slower than the equivalent bits per second rate.

The most commonly used speeds for communications across the telephone system are 300, 1200, 1200/75 and 2400. As with every aspect of computing, each speed has been assigned (jargonised) names, and these are V21, V22, V23 and V22bis respectively.

V21 is the speed employed by most acoustic modems, as greater speeds lead to an unacceptable error rate in the transmitted data. Due to its popularity in early modems, V21 is still widely available on information services.

V22 and the newer V22bis appear to be the current favourite for computer communications, and are used on almost all services. Using these speeds, data transfer is fast and reliable (although V22bis can cause problems on 'noisy' lines).

V23 (known as a 'split baud rate') is peculiar to the UK, and is used almost exclusively for Viewdata (a.k.a. VideoTex) services such as Prestel. You receive the host computer at 1200

Prestel and Home Banking subs and charges

You're interested in having a rummage through one of the large public information services or you'd like to slobber over the enormous amounts of cash in your bank account (you'll need the latter to execute the former) - how much is it going to cost you? Before you rush out and buy a modem, peruse the charges...

Prestel: Quarterly subscription rates vary with the type of user you are (i.e. business, private etc.) - £8 for private users and £18 for businesses. On-line charges are 7p per minute during peak times and 1p per minute between the hours of 6pm and 8am. You've got telephone bills on top of that, of course. You can contact Prestel on 01 822 1122.

Home Banking: This is being offered by a number of banks and building societies via several viewdata services. Effectively you can access the bank's computer and set up standing orders, do transfers etc. Nottingham Building Society (the first to offer home banking) charges £2 per month for the homelink subscription or free for users who keep a balance of £1,200 or more. Homelink is executed via Prestel, so you have to cope with the charges mentioned above and the telephone charges. Nottingham Building Society can be contacted on 0602 481444. Prestel (on the number quoted above) will be able to tell you of other banks offering similar services.

baud, and communicate back to it at 75 (!) baud - i.e. incredibly slowly. In spite of this, a relatively large proportion of private bulletin boards are adopting the 1200/75 V23 standard.

COMMS CAN BE FUN, HONESTLY

Learning comms jargon is one thing, but what can you really do with it? Perhaps the answer is another question: what do you do with your computer? Play games, home accounts, bit of word processing, maybe keep a database... Computer communications isn't going to revolutionise the average home user's hobby, but there are a lot of ways you can increase the enjoyment of your computer by allowing it to talk to the outside world. Several major public information services exist, some with large quantities of software for you to download, all with news, travel information, facilities for fax and telex and home shopping, and the ability to make contact with others with the same interests as yourself.

Micronet is one such service. It was launched on the Prestel network in March 1983 and now consists of 35,000 pages of diverse information and interactive services. The system supports most home computers and all you need to hook up is a modem operating at 1200/75 baud (V23), some viewdata communications software and a subscription. Once on-line, you are presented with a huge multi-faceted database which can be navigated with single key-presses - just hit a number and you're somewhere else. Unfortunately, the 40 column graphics are a bit simplistic too - screen updates are slow - but the range of interesting material more than makes up for this.

The on-line services can be broken down into five areas: Communications, entertainment, Information, Telesoftware/shopping and Business and Personal finance. You can send electronic mail to users of Prestel and Telecom Gold as well as to those of Micronet and link your mailbox to a radio-pager for instant access. Combine this with telex and faxing facilities for an extra fee of £1 a month, and you have world-wide communications for a fraction of the usual cost. Also useful is the teleconferencing facility - Dialtalk - which allows up to 64 users to talk to each other real-time. Chatlines, classified ads and technical helplines

```

MICRONET (c)                               80030010e   Op
-----
XTRA
-----
SATURDAY
ORIGINAL XTRA! for Gilbert Factor,
plus Waveguide >>> 21
-----
21 Original Xtra! Music, films, TV,
travel, gossip and gore: every day.
22 Money Xtra Daily guide to the
complex world of personal finance.
-----
Prestel What's New 6
23 Hamster Prize games, quizzes
24 Treadmill Make new friends, chat
25 Shades Realtime multi-user game
26 Bazaar Monday-Friday small ads
27 Starnet Strategy game (CUG)
-----
8 Browse ----- 5 CUG? ----- 9 Mnet -----
    
```

• XTRA is an interactive magazine on Micronet - you can add your contributions on-line

Put your money where your modem is

Eric Smart and Wally Burke are both keen comms fans. Each day they are to be found logging-on to their favourite boards and downloading files. Both Eric and Wally have seen a useful-looking PD utility on their favourite bulletin board that they'd like to

download - and why not? After all, it's only going to cost them price of a phone call. Read on to find out why BT is going to be a dirty word to Wally at the end of the quarter...

Time	Cost	
09.00	£0.00	Wally turns on his modem to go on-line - if only he could have waited until the cheap rate starts in the evening!
09.01	£0.10	Wally manually dials the board, (during the most expensive charge-band time) makes connection (at 300 baud), replaces his handset, and taps frantically at the Enter key of his machine until he is invited to enter his password.
09.04.21	£0.30	Wally has finally managed to get the host to accept his password at the third attempt (his typing isn't all that it could be) and is now logged-on. Now, if he can just find out where that utility is kept...
09.15	£0.95	Wally, having rummaged through 5 wrong directories and reading several text files, (at 300 baud) has managed to locate the utility.
09.19	£1.05	Wally has accepted the default XMODEM to transfer the utility (he knows nothing of protocols), is unaware of compression utilities and is 2k into a 31k file transfer
09.50	£2.75	Poor old Wally. He's downloaded the file, but can't remember the command to exit the board. In desperation, he switches off his computer. This ensures his departure from the BBS but also leaves it 'hanging' - the SysOp ain't going to be very happy about that, as it means no-one else can use the board! Also guess who didn't dump the captured file to disk before switching off the computer? At the end of the session, he has no file, no status on the board, and a 'phone charge of £2.75!

Time	Cost	
21.00	£0.00	Eric turns on his modem ready for a session on-line after a nice dinner, during cheap rate phone charge band.
21.01	£0.10	Eric's modem dials the number of the board, selects 2400 baud and waits to be connected then begins the automatic log-on procedure by transferring his password to the board.
21.01.30	£0.10	Eric is logged-on and changes to the directory where he knows the utility to be, using a single keypress. (He'd downloaded the help-files from the board during his first contact, and now knows he way around).
21.02	£0.10	Eric is in the directory containing the utility, and is about to start his download.
21.04	£0.15	Eric has selected the ZMODEM protocol for file transfer (he knows how fast it is), used a file compression utility and is 2/3 through the download.
21.05.30	£0.20	Eric, having downloaded the utility, leaves a thank-you message for the SysOp and exits the board. Total cost: 20 pence.

complete the person to person communication services.

All this and an on-line, multi-user adventure game, *Shades*. Featuring a D&D world of 1,000 locations, *Shades* allows up to 64 players to interact simultaneously in a bid to gain points, treasure and become wizards. It's been on-line for a couple of years now and Micronet reckons it attracts at least 4,000 hours of access per week; a popularity it wishes to exploit further by introducing a new game in the next couple of months. Also available is *Starnet*, a multi-user, interactive strategy game set in the 21st century, a selection of competitions and puzzles, and a gallery area for posting your own art and literature.

Contact with a service such as Micronet will really expand your computer horizons - and if you tire of Micronet, there are lots of others.

If you don't want to pay a monthly subscription fee, then you can make contact with one of the many BBSs (Bulletin Board Services), which are invariably free, and at their best can rival many of the public services. (The BBS is a piece of software running on a single machine, usually from someone's home and, as its name implies, is a kind of electronic notice board, allowing you to post and receive messages to and from other users of the board.) They will also have areas containing public domain software which will be available for you to download to your own machine. Help with computing problems, general advice and friendly communication are all part of the bulletin board's appeal.

TOP OF THE BILL

OK, you're convinced of the benefits and advantages to be had by connecting your computer to a modem and getting on-line. You can't wait to download all the free software - but

Technobabble Express assault on computer jargon

Comms

Baud: Measure of transmission speeds given in signals per second e.g. 300, 1200, 2400 etc.

BBS: Bulletin Board Service. A piece of software usually running on a single machine, and which acts as a kind of electronic notice board. Callers can leave and receive messages, download and upload files.

Download: The act of transferring a file across the telephone network from someone else's computer to yours.

Upload: Opposite of download.

Modem: Device used to connect a computer to a telephone line, thereby allowing it to communicate with other computers.

SysOp: SYStem OPERator. Person in charge of and responsible for a bulletin board.

Auto-answer: Feature allowing modems to answer the telephone to incoming calls (usually from other machines).

Auto-dial: Feature allowing modems to dial the number of the service you require automatically, thereby ending the need for a telephone.

Full-duplex: Communication between two computers in both ways at the same time. The host computer communicates using one band range, the replying uses another.

Half-duplex: Communication between two computers in one direction at a time.

is it free? What is it all going to cost? Will you be the next candidate for a tabloid shock-horror story about enormous 'phone bills?

Apart from the initial outlay for a modem and comms software, the major cost of connecting your machine to the outside world will be the actual charges for your telephone calls. These, unfortunately, are dictated by BT, but there are ways of reducing your charges to a minimum. The first thing to do is to restrict your on-line periods to cheap-rate times (between 18.00 and 08.00 and all day Saturday and Sunday).

Next, always choose the fastest communication speed offered by the board that can be handled by your modem - although if you're downloading files, higher speeds are accompanied by a higher error and re-transmission rate which can defeat the object.

During your first call to a new board, download any available help-files and study these thoroughly. Speed up your access times to a board by being able to find your way around quickly and

easily, and you will make a significant reduction in your telephone bills.

If you want to leave a message to other users of a board, compose the message before going on-line. Don't sit with a blank screen and a blank mind whilst the phone bill is running up.

Use one of the many file compression utilities before up-loading or down-loading files from a board. These are small programs which compact text and program files by 50% or more. The compression utilities themselves are usually available from bulletin boards and will greatly reduce file transfer times.

If your comms software allows you to set up a RAM disk, then do so. Capture text files in the RAM disk and read them off-line. Try reading a 10-15K text file scrolling up your monitor screen at 300 baud - it takes forever and costs megabucks!

Used sensibly, comms can open up a whole new world for your micro at modest cost. Remember, you pay £14.99 or so for 8-bit disks and more for 16-bit software. By comparison, comms is cheap! ●

FREE MOUSE MAT WITH EVERY ORDER FROM THIS AD

All prices include VAT and Carriage, Finance Available via Avcotrust

AMSTRAD PCW

CPS 8256 RS232 Interface	£67.50
FD1 1MB Disk Drive Upgrade 8256/8512	£169.00
FD4 1MB Disk Drive Upgrade 9512	£169.00
Extension Cables for PCW, Set of 3	£22.95
Master Scan Scanner	£64.95
Master Pack, Scan and Paint	£74.95
Amstrad PCW Joystick Interface	£14.95

MICE

AMX Mouse with Art for CPC	£64.95
AMX Mouse with Stop Press for PCW	£84.95
AMX Mouse with Desk Top for PCW	£74.95
AMX Mouse with Desk Top for BBC	£74.95
AMX Mouse with Art for Spectrums	£64.95
Genius GM6 with Dr. Halo for PC	£49.95
Neos Mouse with Cheese for C64	£22.95
Kempston Mouse with Jeeves for PCW	£64.95
Kempston Mouse with Toolkit for Spectrum	£49.95
Kempston Mouse with Blueprint for CPC	£64.95

PRINTERS

Citizen 180E	£159.95
Star LC10	£219.95
Star LC10 Commodore	£219.95
Star LC10 Colour	£269.95
Star LC10 Colour Commodore	£269.95
Amstrad DMP 3250	£219.95
Panasonic KXP 1081	£169.95

AMIGA

A501 Memory Upgrade 512k	£149.95
520 T.V. Modulator	£24.95
AF880 2nd Disk Drive	£109.95
1084 High Res. Colour Monitor	£289.95
"Digiview Gold Digitiser"	£125.95

COMPUTERS

Amstrad 464 with T.V. Modulator	£159.95
Amstrad PC1512 dual drive colour	£679.95
Sinclair PC200	£339.95
Spectrum +3 with free software	£199.95
Amiga 500 with free software	£389.95
Atari 520 STFM Explorer Pack	£289.95
Atari 520 STFM Super Pack	£389.95
Commodore 64C Hollywood Pack	£149.95

ATARI ST

Atari ST Multiface	£59.75
Cumana 2nd Disk Drive	£109.95
Atari mouse for ST	£24.95
4 Player adaptors	£5.95
Animatic Sprite Master	£23.95
Music Studio music composition	£16.95

COMMODORE PC1

RF552C 2nd Disk Drive 5.25"	£129.95
AF880 2nd Disk Drive 3.5"	£109.95

SINCLAIR PROFESSIONAL

PC200 Joystick	£22.95
SD1 3.5" External Disk Drive	£199.95
SD2 5.25" External Disk Drive	£199.95

PERIPHERALS & DISKS

Cathay Cassette Recorder	£19.95
Universal Metal Printer Stand	£17.95
Clear Plastic Printer Stand	£12.95
14" Monitor Filter Colour or Mono	£17.95
12" Monitor Filter Colour or Mono	£16.95
CF2 Amsoft 3" Disks, per 10	£24.95
Sony 3.5" Disks, per 10	£18.95
Unbranded 3.5" Disks, per 10	£11.95
Mimic 5.25" Disks, per 10	£6.99

AMSTRAD CPC

DD1 Disk Drive for 464	£159.95
FD1 2nd Disk Drive for 6128	£99.95
MP2 T.V. Modulator for 6128	£29.95
RS232 Interface for CPC	£59.95
DMP2160 Printer for CPC	£159.95
Multiface II Interface	£44.75

SPECTRUM

Ramprint Printer Interface	£34.95
Multiface 1 Interface	£39.75
Multiface 128 Interface	£44.75
ZX Microdrive	£29.95
Multiprint Interface	£44.75
Multiface 3 Interface	£49.75
Trojan Lightpen for Spectrum + 2	£18.95
Trojan Lightpen for Spec + 3	£23.95

COMMODORE 64

Sprint 128 Printer Interface	£29.95
Oceanic Disk Drive	£129.95
Commodore 1541 Disk Drive	£159.95
Citizen 560 Printer for C64	£29.95
Comprint Centronics Printer Interface	£19.95
BBC Emulator (Cassette)	£8.99
C2N Datarecorder	£29.95
Micromate Power Supply	£22.95
Unbranded Mono Monitor	£49.95

AMSTRAD PC

FD5 2nd Disk Drive for PPC	£189.95
FD3 Disk Drive for PC1512/1640	£189.95
PC Card Modem	£114.95
Linkmaster PC/PPC Transfer Kit	£22.95
2400 Baud PC Card Modem	£219.95
Amstrad Network System	£458.85
Timeworks DTP Lite	£44.95

LION COMPUTERS, 778 BOROUGH ROAD, BIRKENHEAD, MERSEYSIDE, L42 9JG
TEL: 051 608 0435

Send your orders enclosing Cheque/Postal Orders or quote your Credit Card details with expiry date. Alternatively, telephone your orders using your Credit Card. Visit our shop, Open 6 Full Days 9.15 - 5.45

K & M COMPUTERS

THE LEADING AMSTRAD MAIL ORDER SPECIALISTS

* FAST...FRIENDLY...RELIABLE...SERVICE *

ADVENTURE	CASS	DISC
Time and Magik.....	£10.90	£10.90
Gnome II: Ingrid's back...£10.90	£14.45	
Lancelot.....	£10.90	£14.45
Jinxter (6128).....	£14.45	
Corruption (6128).....	£14.45	
Return to Doom.....	£12.50	
Not a Penny More.....	£10.90	£14.45
Mindfighter.....	£10.90	£14.45

COMPILATIONS

The In Crowd.....	£9.99	
History in the Making.....	£15.95	£21.50
Taito Coin-op (inc. Rastan) £9.90		
Supreme Challenger (Inc Elite) £9.90		£13.10
Gold Silver & Bronze.....	£11.90	£21.50
Giants.....	£10.50	£15.95
Flight Ace.....	£11.90	£13.95
Ten Great Games V. III.....	£7.99	£11.90
Command Performance.....	£7.99	£15.95
Frank Brunos Big Box.....	£9.90	£13.10
We are the Champions.....	£7.50	£13.10
Fists N Throttles.....	£9.90	£13.10
Supreme Challenge (inc. Elite) £9.90		£13.10
Mega Games I.....	£10.50	
Game Set & Match II.....	£9.90	£13.10
Space Ace.....	£10.50	£11.90

STRATEGY/SIMULATION

Football Manager II.....	£7.50	£10.90
Pirates (6128).....		£14.45
Football Director II.....		£14.45
Gunship.....	£10.90	£14.45
Ancient Battles.....	£10.90	
Micropose Soccer.....	N £10.90	£14.45
Times of Lore.....	N £7.50	£10.90
Chuck Yeagers Ad Trainer.....	£7.50	£11.90
Espionage.....	£7.50	£10.90
Bards Tale.....	£7.99	£11.90
Question of Sport.....	£10.90	£14.45
Football Director (464).....	£6.99	
Roy of the Rovers.....	£7.99	£11.90
Risk.....	N £7.50	£10.90
War in Middle Earth.....	£7.50	£10.90
Heroes of The Lance.....	£7.99	£15.90
Steve Davis Snooker.....	£1.80	£7.99
Trivial Pursuit (New Edition) £10.90		£14.45
P.H.M. Pegasus.....	£7.99	£11.90
Track-Suit Manager.....	N Phone	
Vulcan.....	£6.99	
4 Soccer Simulator.....	£7.50	£10.90
Archon Collection.....	£7.99	£11.90
Classic Games 4.....	£7.50	£10.90
Night Raider.....	£7.99	£11.90

EDUCATIONAL

Answer Back Jnr.....	£7.95	£11.95
Factfile 500s.....	£3.75	£6.75
Fun School (U5s, 5-8, 8-12) £5.50		£7.95
Maxi Maths (Geometry).....	£8.50	£13.95
The Three Bears.....	£15.95	£15.95
Giant Killer (9-14).....	£12.95	
Migic Maths (4-8).....	£8.50	£12.95
Maths Mania (8-12).....	£8.50	£12.95
Chemistry GCSE.....	£11.90	£14.95
Physics GCSE.....	£11.90	£14.95
Biology 1 (12-16).....	£8.50	£12.95
Wordhang.....	£7.50	£11.95
Happy Writing.....	£7.50	£11.95
Physics 1 12-16.....	£8.50	£13.95
Mapwork Geography Quiz.....	£8.50	£15.95
Spanish Tutor.....	£12.95	£15.95
French Mistress.....	£12.95	£15.95
Italian Tutor.....	£12.95	£15.95
Iankey Crash Course (6128/PCW) £19.90		
Iankey Two Finger (6128/PCW) £19.90		
Fun School 2 Available February (Phone)		

ARCADE	CASS	DISC
Blasteroids.....	£7.50	£10.90
Operation Wolf.....	£7.50	£10.90
Last Ninja II.....	£9.99	£11.90
Thunderblade.....	£7.99	£11.90
Motor Massacre.....	£7.99	£11.90
Guerrilla War.....	£7.50	£10.90
Robocop.....	£7.50	£10.90
Rambo 3.....	£7.50	£10.90
Run The Gauntlet.....	£7.50	£10.90
Live N Let Die.....	£7.50	£10.90
4 x 4 Off Road Racing.....	£7.99	£11.90
Scate or Die.....	N £7.99	£11.90
Road Blasters.....	£7.99	£11.90
Barbarian II.....	N £7.50	£10.90
Game Over II.....	£7.50	£10.90
Total Eclipse.....	£7.50	£10.90
Crazy Cars II.....	£7.50	£10.90
1943 (Midway).....	£7.99	£11.90
Afterburner.....	£7.99	£11.90
The Train.....	£7.99	£11.90
Munsters.....	£7.50	£10.90
WEC Le Mans.....	£7.50	£10.90
Led Storm.....	£7.99	£11.90
Savage.....	£7.50	£10.90
Netherworld.....	£7.90	
Return of the Jedi.....	£7.50	£10.90
Laser Squad.....	N £7.50	£10.90
Victory Road.....	£7.50	£10.90
R-Type.....	£7.99	£11.90
Batman (new).....	£7.50	£10.90
Dragon Ninja.....	£7.50	£10.90
Echelon.....	£10.99	£13.10
Captain Blood.....	£7.50	£10.90
Inc. Shrinking Sphere.....	£7.99	£11.90
Fernandez Must Die.....	£7.50	£10.50
Titan.....	£7.50	£10.90
Spitting Image.....	£7.50	£10.90
Typhoon.....	£7.50	£10.90

BUDGET	CASS ONLY
Commando.....	£2.75
Battleships.....	£1.80
Quest / Golden Eggcup.....	£1.80
Split Personalities.....	£1.80
Frank Bruno Boxing.....	£1.80
International Speedway.....	£1.80
Thai Boxing.....	£1.80
Powerplay.....	£1.80
Peter Pack Rat.....	£1.80
Knightmare.....	£1.80
Video Classics.....	£1.80
Formula Grand Prix.....	£1.80
A.T.V. Simulator.....	£1.80
Peter Pack Rat.....	£1.80
Scuba Kidz.....	£1.80
Elevator Action.....	£1.80
Ace II.....	£2.75
Bombjack.....	£1.80
Uridium.....	£2.75
Shockway Rider.....	£2.75
B.M.X. Freestyle.....	£2.75
Beach Buggy Sim.....	£1.80
Kickstart II.....	£1.80
Rocky Horror Show.....	£1.80
Turbo Boat Sim.....	£1.80
Rik The Roadie.....	£1.80
Glider Rider.....	£1.80
Skateboard Kidz.....	£1.80
Treasure Island Dizzy.....	£2.75
Software House.....	£1.80
Adv. Pinball Sim.....	£1.80
Space Trader.....	£1.80
Slug.....	£1.80
Spy Hunter.....	£2.75

464 Upgrade Rom
Now available
ONLY £16.99 From us

**Special prices on
A.M.S. Software**

StopPress.....	£39.95
StopPress & Mouse.....	£72.95
Mouse & Art.....	£61.95
Mouse Mats.....	£4.95
Max.....	£16.95
Extra Extra.....	£21.95

**KDS Electronics
Special Offers**

Rombox.....	£24.95
51/2 Second Drive.....	£158.95
8 Bit Pr. Port.....	£18.75
Serial Int + Rom.....	£44.95
Printer T Switch.....	£24.95
Screen Master.....	£14.95
Ramdos (Disc).....	£23.95
Romdos (Rom).....	£27.95

**KDS Modems are no
longer available**

Mini Office II
Still our No1 Seller
Cass £10.95 Disc £14.45

Amsoft 3" Disc/Maxell

One.....	£2.50
Five.....	£12.50
Ten.....	£24.95
Ten.....	£3.90
Ten.....	£9.50

**Romantic Robot
Quality Products at
Discount Prices**

Insider.....	£13.95
Multiface II +.....	£44.95
Rodos (on rom).....	£25.95
Rodos extra.....	£8.75

All our prices include
VAT + P&P. Nothing extra to
pay. In stock items sent by
return of post. No
minimum order

SPECIAL OFFER
ORDER ANY FIVE
£1.80 Budget games and pay
only £8.00

**DMP 2000/2160/3000
Ribbons**
£3.99 each
£6.99 for Two
£15.50 for Five

ACCESSORIES

Rombox Rombox.....	£34.95
464 Keyboard Ext Leads.....	£6.99
6128 Keyboard Ext Leads.....	£7.99
Cover Set 464 or 6128.....	£7.50
Cover Set DMP 2000/2160.....	£4.50
Joystick Splitter.....	£7.99
Mouse Holder.....	£3.95
6128 Cassette Leads.....	£3.50
Lockable 3" Disc Boxes (60).....	£9.99
AMS 20L Disc Box.....	£12.50

JOYSTICKS

Amstrad JY2.....	£13.95
Cheetah Starfighter.....	£13.95
Konix Navigator.....	£13.95
Gunshot.....	£5.75
Delta (Microswitch).....	£9.50
Cheetah 125+.....	£7.95
Quickshot II Turbo.....	£12.95
Cheetah Challenger.....	£4.75
Konix Autofire.....	£11.95
Konix Speedking.....	£9.99
Cruiser (Microswitch).....	£9.50

BUS/UTIL	DISC
Mastercalc 128.....	£27.95
Qualitas+.....	£12.99
Masterfile III.....	£32.95
Plan-It.....	£14.99
Professional Adv. Writer.....	£24.95
Tasspell.....	£13.95
Poke Easy Plus £9.99.....	£14.99
Protext.....	£20.95
Prospell.....	£20.95
Promerge.....	£20.95
Protext Filer.....	£22.95
Protext CPM (Spell & Merge).....	£50.95
Tasword 6128.....	£20.95
Personal Banking System.....	£23.95
Protext (on Rom).....	£32.50
Promerge+ (on Rom).....	£29.95
Prospell (on Rom).....	£29.95

HARDWARE ETC

2160 Printer.....	£159.95
DDI Disc Drive (Phone).....	£159.95
MP2 Modulator (Phone).....	£29.95
FD1 Second Drive.....	£99.95
54K Memory Expansion.....	£47.95
Screen Filter.....	£19.99
Surge Plugs.....	£12.50
2000 Continuous Paper.....	£16.50
DKT Colour TV Tuner.....	£72.95
464 Speech Synthesiser.....	£29.95
6128 Speech Synthesiser.....	£35.95
C15 Cassettes.....	45
Fanfold Labels (1000).....	£5.90
CMP+ (disc).....	£18.95
CPC6128 Manual.....	£14.95
Printer Cable.....	£8.99

NEW LINES AT LOWEST PRICES

Atari ST Super Pack.....	£369.00
Amiga A500 Inc Mod.....	£379.00
PCW8256 (Inc VAT).....	£389.00
PCW8512 (Inc. VAT).....	£499.00
PCW9512 (Inc VAT).....	£510.00
PPC512 (Inc VAT).....	£449.00
PC1512 (Inc VAT) from.....	£449.00
PC1640 (Inc VAT) from.....	£725.00
PC2086 (Inc VAT) from.....	£675.00
Utax GRP, 3 fax (Inc VAT).....	£999.00
DMP 4000 Printer.....	£375.00
DMP 3250 Printer.....	£220.00
LQ 3500 Printer.....	£375.00
Epson LX800 Printer.....	£229.00
Commodore PC 1 from.....	£349.00
80 C Printer Muffler.....	£85.00

PCW Owners write or phone for
new catalogue. PC200 Software
available. Prices in this advert are
for Amstrad 464/6128

Buy with confidence from the leaders in Amstrad Mail Order
50p vouchers sent with every order. Use the vouchers to deduct 50p of further
orders over £10. We use and specialise in the complete Amstrad range.

K & M Computers (NCE)
40, Fairstead,
Birch Green,
Skelmersdale,
Lancs, WN8 6RD
24 Hrs Phone 0695 29046

When ordering please state make of computer, please make
cheques & P.O. payable to K & M Computers. Overseas inc.
Eire add £1.00 per item of software. We supply government &
educational establishments.

Access orders by phone or Mail
N = New releases
Please Phone for availability
and other new releases



Athene Consultants (Media Centre)

16 Stoke Road, Gosport, Hants. PO12 1JB

Tel: 0705 511439 (Office Hours)

0705 511648 (24 Hours)

Fax: 0705 511646

* Same Day Despatch* Stock items

* CREDIT CARDS WELCOME*

* Access & Visa*



THE LOWEST PRICES IN THE UK GUARANTEED. CALL FOR QUANTITY DISCOUNTS

3.5" DS/DD 135TPI High Quality Bulk

High Clip (KAO/Maxell)
Lifetime Warranty,
recommended for Amigas
97p
Also Standard Bulk at
86p

5.25" DS/DD 48tpi High Quality Bulk

High Clip
Lifetime Warranty
For IBM PC 360k
37p
Minimum Qty 25
Order in Units of 25

5.25" DS/QD 96tpi High Quality Bulk

High Clip
Lifetime Warranty
45p
Minimum Qty 25
Order in Units of 25

5.25" HD AT 96tpi High Quality Bulk

High Clip
Lifetime Warranty
For IBM AT 1.2 Mb
£1.13 inclusive
Minimum Qty 25
Order in Units of 25

DISKS

Prices per Pack of 10

DYSAN

5.25" AT Only £15.00
5.25" DS/QD 96tpi £11.50
5.25" DS/DD 48tpi £9.10
3.5" DS/DD 135tpi £16.50
3.5" DS/HD £47.50

Branded Disks
at
Low Prices

3M

5.25" AT Only £19.00
5.25" DS/QD 96tpi £16.50
5.25" DS/DD 48tpi £8.00
3.5" DS/DD 135tpi £18.50
3.5" DS/HD £45.50

DISKS

SONY

3.5" DS/HD £45.00
3.5" DS/DD £15.00

SPECIAL OFFER * * * *

5.25" DS/HD Branded Verbatim only £16.00 while stocks last
3.5" DS/DD Branded Verbatim only £13.00 while stocks last
Amiga 500 Systems from £379

STAR COMPUTER PRINTERS

Registered Dealer, Official UK versions only

LC10	£199.00 (inclusive)
LC10 Colour	£259.00 (inclusive)
LC 24/10	£345.00 (inclusive)
NB 24/10	£488.00 (inclusive)
Star NX15	£320.00 (inclusive)
Star NB 24/15	£510.00 (inclusive)
Star LP8 Laser Only	£1600.00 (inclusive)
Panasonic Laser	£1840.00 (inclusive)
Citizen 120D (Commodore)	£139.00 (inclusive)

Price includes delivery & VAT

AMIGA HARDWARE

AMIGA A500	£389.00 (inclusive) + FREE Software
AMIGA A500 1MEG	£528.00 (inclusive) + FREE Dragon's Lair
1084 S Stereo Monitor	£279.00 (inclusive)

A2000 MACHINES, PLEASE CALL FOR PRICING

"APD Unlimited! Now part of Athene PD. Full Range of Amiga PD from £2.50 a disk
Special Offer: Starter Collection of 4 PD Demo disks. Latest releases £6.50
inclusive. Ever growing library, please send S.A.E. for Catalogue

We also Supply Verbatim, Fuji, Xidex, Maxell, Nashua
The Full STAR Printer Range at Low Prices

Disk Storage Systems

DATA CARTRIDGES - RIBBONS - PAPER - TONER CARTRIDGES - CABLES

3.5"

10	3.5" Disk Box	£1.30
40	3.5" Disk Box	£6.00*
100	3.5" Disk Box	£10.00*
28	3" Disk Box	£6.00*

5.25"

10	5.25" Disk Box	£1.30
50	5.25" Disk Box	£7.00*
100	5.25" Disk Box	£9.00*
140	5.25" Disk Box	£11.00*

* Lockable Full Range of Printer Ribbons for EPSON, STAR, AMSTRAD etc.

PC HARDWARE
AMSTRAD
EFI
SAMSUNG
OPUS

PLEASE CALL FOR THE BEST
QUOTES

SCHNEIDER EURO PC
Complete Mono System Now
Available
£389.00
+ VAT

All Orders £1 Delivery Charge
All Prices Include VAT
Courier Next Day Delivery £5.75

Silva tongued

The latest Amiga paint package - DeluxePaint III - has taken the state of the art to new frontiers. Rik Haynes discovers DeluxePaint III's inner secrets by talking to its creator, Dan Silva.

- **When did you start writing DeluxePaint III?**
I think it was about a year and a half ago.
- **What were the most difficult parts to write?**
Without a doubt the most difficult part to write was the animation code - particularly compressing animation on the fly so you could edit the picture but immediately give the difference between that, the following picture and the previous picture and store them all in memory and have that working fast.
When I first implemented that, it took about 5 seconds to make any change to the picture.
- **How fast is the animation compression routine now?**
It's so fast now you don't notice it.
- **Was the animation portion of the program the largest section to write?**
Yes, it takes up 50% of the program and took over half the development time.
- **What software and hardware did you use to develop DeluxePaint III?**
We use Electronic Arts' own custom-designed development system which we call the Artist's Work Station using IBM 286s and 386s, and our own cross-debugging set-up - which is a very good interactive debugger, allowing you to single step thru the code on the PC and simultaneously see the results displayed on the Amiga. The code itself was mainly written in Aztec C, with all the time-critical parts - such as the perspective fill and color-cycling code - written in Assembler language.
- **You've included extra-halfbrite mode in DeluxePaint III, so why didn't you include HAM mode?**
HAM is a real pain - I just want individual pixels. Every time I look at including HAM, the impact on the program architecture is just too major for me,

and it would make portability to other micros even more difficult. Up till now I've managed to find better uses of the other graphics modes without resorting to HAM.

- **Why didn't you use the ARP file requester?**
That's another area I could improve. I've seen the ARP and it's really neat - but I've already built my own shell over the top of Intuition, so I can generate requesters using only a limited amount

of memory. I'd rather spend time developing new animation routines than rewriting something that already works OK.

- **What do you think is the worst feature in DeluxePaint III?**

I should wait for users to find that out - but I think the most annoying feature of DeluxePaint III is that I didn't get to include all the elements of animation that I wanted to incorporate. However, I can't think of anything that I'd call a bad feature.

- **What do you think is the best feature in DeluxePaint III?**

I'd say the three dimensional move capability which lets the non-artist produce quite complex animations in a simple, quick and fun to use way.

- **Why should people buy DeluxePaint III - what makes it stand out from the competition?**

First of all, it's a big improvement in the paint program's capabilities alone. Almost every part of the program has been retouched in some way - either speeded up or the interfaces cleaned up, things like that. Secondly, it opens up a whole world of art where the difference between static art and animation is blurred. I'm very excited by the possibilities of this combination.

- **Is this how you foresee DPaint developing in the future?**

I think you'll see from the animation stuff I do now with DeluxePaint III that I've already started in that direction - with you able to create free form animation and save out standard moves and effects, and make it more of a push button tool for anybody to use.

- **What do you think is the worst feature of the Amiga?**

I do have problems with the system software - it's complicated to use, hard to work with and multi-tasks when it doesn't need to.

- **What do you think is the best feature of the Amiga?**

The custom-designed graphics and sound chips.

- **If you could change three things about the Amiga, what would you alter?**

The operating system, I'd make the hi-res not flicker, and I'd make the Amiga have 256 colors - a sort of extra extra-halfbrite mode.

- **What are your five favourite pieces of Amiga hardware and software?**

This is embarrassing, I don't really use the Amiga except for Dpaint. I don't play games, although I recently got hooked for weeks on a Public Domain game called Grav Attack. I'd like to have time to keep up with Amiga hardware and software developments like the Video Toaster and Sculpt 4-D.

- **Where would you like to see the Amiga in five years time?**

I'd like to see it become "The Standard" for low-cost video production - and to see desktop video

production become reality, with people able to produce their own MTV videos - with the Amiga at the centre of it all.

- **Did you enjoy working at Lucasfilm?**

It was a very interesting and educational experience - but I think the film industry's expectations for how long computer graphics in the movies would take to become a reality were totally unrealistic. That's why I got out of it.

- **If you weren't a programmer, what do you suppose you'd do?**

I think I'd be a musician... perhaps.

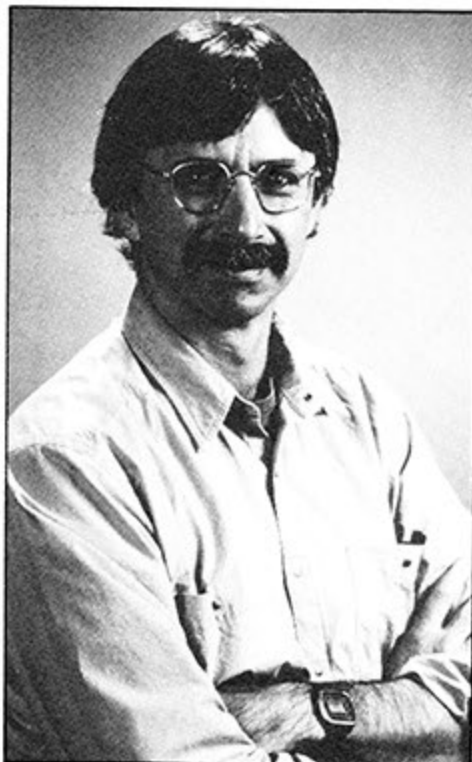
- **What's your favourite food and drink?**

To be real specific it's the red and green enchiladas at Pancho's Mexican

restaurant in Fairfax, and margaritas.

- **What other EA projects have you worked on in the past?**

I've worked on Cut and Paste and I ported One



Technobabble

Enchiladas

Enchiladas are a Latin American food dish made up of a Tortilla (thin flat maize cake) filled with meat, peppers and chilli sauce.

on One and Pinball Construction Set to the IBM - things like that.

- **What project are you currently working on?**

I'm beta testing an EA MIDI sequencing product on the Mac.

- **What's going to be your next project?**

I can't say exactly, but it will be in the graphics and animation area.

- **Will DeluxePaint III be converted over to any other micro formats?**

I don't know the precise details at present. Our IBM programmer Steve Shaw is currently working on a PC version which will incorporate aspects from Amiga DeluxePaint III, but it's oriented a little differently because of the different PC and Amiga markets. I believe there are plans for an ST version in Europe, but I'm not totally sure on that.

- **Are there plans for DeluxePaint IV?**

I've a growing list of things to include in DeluxePaint IV - tweaking what's already in DeluxePaint III, that sort of thing. I can't think of anything major to include right now. Though while I take a rest from DeluxePaint I may think of something new to include... ●

Dan Silva Bio

- Born in Van Nuys, Southern California on 12th December, 1942
- Studied Mechanical Engineering at Stanford University - he eventually got a BSM and MSM in M/E. Stanford saw his interest in computer technology awaken when he used a computer to synthesise kinematic linkages.
- He then worked for four years at Informatics, a contractor to the NASA Ames laboratory, reinforcing his interest in computing by writing an interactive language for displaying mathematical equations.
- By 1978, he joined Xerox where he worked on user interface design for the Xerox Star System.

- Then followed a year at Lucasfilm designing a video editor for its computer graphics division setup by George Lucas to integrate computer graphics, video editing and computer audio into mainstream moviemaking.
- After that, he went back to Xerox to work on a next generation bitmap editor with Bill Bowman. This project developed into the black and white paint program, Doodle, running on the Xerox Dandelion computer.
- In 1983 he joined Electronic Arts and started work on an in-house paint program called Prism. With the release of the Amiga in 1985, Prism became DeluxePaint and the rest (as they say) is history...

CLIK-ST

WE ACCEPT EXPRESS VOUCHERS

Unit 2 Willowslea Farm,
Spout Lane North, Stanwell Moor,
Staines, Middlesex TW19 6BW
Telephone: (0753) 683965

TITLE	S.S.P	OUR PRICE	TITLE	S.S.P	OUR PRICE	TITLE	S.S.P	OUR PRICE
Advanced Rugby Sim	19.99	13.50	Night Hunter	24.99	17.50	NEW RELEASES		
Afterburner	24.99	16.50	NightRaider	19.99	13.50	Barbarian II	19.99	13.50
Airball	24.99	16.50	Nigel Mansell's G.P.	24.99	17.50	Batman	19.99	13.50
Airball Con. Set	24.99	16.50	Obliterator	24.99	16.50	Baal	19.99	13.50
Alien Syndrome	19.95	13.50	Out Run	19.95	16.00	Billiards	19.99	13.50
Alpine Games	9.99	7.50	OverLander	19.99	13.50	Billiards (French Version)	19.95	13.50
Altair	19.99	13.50	Offshore Warrior	24.99	16.50	Custodian	19.99	13.50
Arcade Force Four	24.99	19.50	Ogre	24.99	16.50	Dragon's Scape	19.95	13.50
Arctic Fox	24.99	17.50	Operation Wolf	24.99	16.50	Fusion	24.95	19.50
Arkanoid II	19.99	13.50	Pluto's	19.95	13.50	Incredible Shrinking Sphere	19.99	13.50
Armageddon Man	19.99	14.50	Pool of Radiance	24.95	16.50	King's Quest 4	29.99	19.50
Barbarian	24.99	16.50	Pothole Pete	9.99	7.50	Borrodino	29.99	19.50
Barbarian	19.99	10.50	PowerDrome	24.99	17.50	Flying Shark	29.99	13.50
Bards Tale I	24.99	17.50	PacMania	19.99	13.50	Kenny Dalglish	19.95	13.50
Better Dead Than Alien	19.95	13.50	Pandora	19.99	13.50	LED Storm	19.99	13.50
Beyond The Ice Palace	19.99	13.50	Pawn	19.99	13.50	Mad Flunky	14.95	10.50
Bionic Commando	19.95	16.00	Peter Beardsley	19.99	13.50	Menace	19.95	13.50
BMX Simulator	14.99	10.50	Phoenix	19.99	13.50	Raffles	19.99	13.50
Bubble Bobble	19.99	13.50	Pink Panther	19.99	13.50	Realms of Trolls	19.95	13.50
Buggy Boy	19.99	13.50	Platoon	19.95	13.50	Roy of the Rovers	19.99	13.50
Bomb Jack	19.95	13.50	Predator	19.99	13.50	ST Ballistix	19.99	13.50
Captain Blood	24.99	16.50	Power Struggle	14.99	10.50	The Deep	19.99	16.00
Captain Fizz	19.99	13.50	Purple Saturn Day	24.99	16.50	Willows	24.99	16.50
Casino Roulette	19.99	13.50	Perfect Match	24.99	16.50	Wizard's Crown	24.99	17.50
ChessMaster 2000	24.99	17.50	President is Missing	24.99	16.50	Zak McKracken	24.99	16.50
Corruption	24.99	16.50	Quadralien	24.99	16.50	"SPECIAL OFFERS" While stocks last !!		
Carrier Command	24.99	16.50	Questron II	24.99	19.50	Annals of Rome	24.95	12.50
Champion Wrestling	19.99	16.00	Question of Sport	24.99	16.50	Borrowed Time	29.95	12.50
Champion Water Ski	19.99	16.00	Return To Genesis	19.99	13.50	Crazy Cars II	24.99	12.50
Chess	24.99	16.50	Rampage	14.99	10.50	Golden Path	24.95	12.50
Crash Garrett	19.99	13.50	Rolling Thunder	19.99	16.00	Hacker	29.99	12.50
Dark Castle	24.99	16.50	RoadWar 2000	24.99	19.50	Hacker II	29.99	12.50
Defender of the Crown	29.95	19.50	RoadRunner	24.99	16.50	Hollywood Hijinx	29.99	12.50
Double Dragon	19.99	13.50	Revenge II	9.99	7.50	Hits Disc	24.99	12.50
Dugger	19.99	13.50	Rockford	19.99	13.50	I Karate	24.99	12.50
Dungeon Master	24.99	16.50	Rambo III	24.99	16.50	Manhattan Dealer	24.99	12.50
Deflector	19.99	16.00	Ranarama	19.99	16.00	Metro Cross	19.99	12.50
Daley Thompson	19.99	13.50	RoadWars	24.99	16.50	Mind Fighter	24.99	12.50
Deja Vu	29.99	19.50	RoadWar Europa	24.99	19.50	Mind Shadow	29.99	12.50
Diablo	14.99	10.50	Shackled	19.99	13.50	Moon Mist	29.99	12.50
Dizzy Wizard	19.99	13.50	Side Arms	19.99	16.00	Off Shore Warrior	24.99	12.50
Elf	19.99	13.50	Sapiers	19.99	13.50	Shanghai	29.99	12.50
Empire	24.99	17.50	Sky Fox	14.99	12.50	Spell Breaker	29.99	12.50
ECO	19.99	13.50	Sky Fighter	14.99	10.50	TASS Time	29.99	12.50
Eddie Edwards Ski	19.99	13.50	Space Quest I	19.99	13.50	Trinity	29.99	12.50
Elite	24.99	16.50	Star Trek	19.99	13.50	Wish Bringer	29.99	12.50
Empire Strikes Back	19.99	13.50	Scenery Disk No 7	19.99	13.50	Ultima II	24.99	12.50
Epyx	29.95	19.50	Scenery Disk No 11	19.99	13.50	Zork I	29.99	12.50
Espionage	19.99	13.50	Scenery Disk Europe	19.99	13.50	Zork II	29.99	12.50
Extensor	9.99	7.50	Scenery Disk Japan	19.99	13.50	Zork III	29.99	12.50
Fahrenheit 451	24.99	16.50	Shadowgate	24.95	16.50	UTILITIES		
Falcon	24.99	16.50	Shutdown	9.99	7.50	Adventure Art Studio	69.99	50.50
Fire & Forget	24.99	16.50	Side Winder	9.99	7.50	Animator	79.95	60.50
Firezone	24.99	16.50	Silent Service	24.99	16.50	Architectural Design Disk	29.95	21.50
Five Star Compendium	24.99	16.50	Space Harrier	19.99	13.50	Art Director	49.95	32.50
Flight Sim. II	39.99	26.50	Space Quest II	19.99	13.50	Back Pack	49.99	32.50
Flintstones	19.99	13.50	Spitfire 40	24.99	16.50	CAD 3D V 2.0 + Cybermate	89.95	62.50
Football Manager 2	19.99	13.50	StarWars	19.99	13.50	CAD 3D Fonts & Printives	29.95	21.50
F.O.F.T.	29.99	19.50	StarGlider II	24.99	16.50	CAD 3D Architectural Design	29.95	21.50
Formula One	19.95	13.50	Stellar Crusade	32.99	26.50	Craft	99.95	72.50
Fernandez Must Die	24.99	16.50	Star Crazy	19.99	13.50	Cyber Control	59.95	45.50
Fright Night	19.95	13.50	ST Olympiad	9.99	7.50	Cyber Paint	69.95	45.50
Galdregon's Domain	19.99	16.50	STOS	29.99	19.50	Cyber Sculpt	59.95	45.50
Gambler	14.95	10.50	Street Fighter	19.99	16.00	Cyber Studio	79.95	60.50
Games Winter Edition	19.95	13.50	Street Gang	14.99	10.50	Cyber Texture	Phone for Details	
Garrison	24.95	16.50	Strip Poker II	14.99	10.50	Data Management Pro	69.95	50.50
Gunship	24.99	16.50	Summer Olympiad	19.99	13.50	Degas Elite	24.95	17.50
Get Dexter	19.99	13.50	Super Hang-On	19.99	13.50	DEV-PAC Ver 2.0	59.95	45.50
Gauntlet II	24.99	19.50	Super Sprint	14.99	10.50	Digital Home Accounts	24.95	17.50
Gary Lineker Super Skills	19.99	13.50	Space Ace	19.99	13.50	Digital Mail Shot Plus	49.95	32.50
Gold Runner II	19.99	13.50	Soccer Supremo	14.99	10.50	Disc Library	Phone for Details	
Garfield	19.99	13.50	Staff	19.99	13.50	Easy Draw II	59.95	45.50
Hardball	24.99	16.50	Star Fleet	24.99	17.50	Easy Draw II Supercharged Ver	99.99	72.50
Hollywood Poker	14.99	10.50	Sinbad & Throne of Falcons	24.99	16.50	Easy Draw II General Library	29.95	21.50
Hellfire Attack	24.99	17.50	SpeedBall	24.99	16.50	Easy Draw II Technical Library	29.95	21.50
Helter Skelter	14.99	10.50	Superman	24.99	16.50	Fast Assembler	19.95	16.50
Heroes of the Lance	24.99	19.50	ST Karate	19.99	13.50	Film Director	59.95	45.50
Hollywood Poker Plus	14.95	10.50	Skrull	24.99	16.50	Fleet Street Publisher	115.00	95.50
Hostages	24.99	16.50	Tanglewood	19.99	13.50	F.T.L. Modulator II	69.95	50.50
Hot Shot	19.99	13.50	Tetris	19.99	13.50	Future Design Disc	24.95	17.50
Hunt for Red October	24.99	16.50	Three Stooges	24.99	16.50	G.F.A. Artist	49.95	32.50
Ikari Warriors	14.99	10.50	Thrust	9.99	7.50	G.F.A. Compiler	45.99	32.50
Impact	14.95	10.50	Tracker	24.99	16.50	G.F.A. Basic Interpreter V3	45.95	32.50
Impossible Mission	19.99	16.00	Turbo Cup	19.99	13.50	G.F.A. Draft	99.99	72.50
Insanity Fight	24.99	16.50	Typhoon	19.99	13.50	G.F.A. Draft Plus	139.95	115.00
Int'l Soccer	24.99	16.50	Thundercats	19.99	13.50	G.F.A. Sheet	45.99	32.50
IK*	24.99	16.50	Time & Magik	19.99	13.50	G.F.A. Vector	34.95	26.50
I Ball	9.99	7.50	Trivial Pursuit (New Beginning)	19.99	13.50	G.I.S.T.	34.95	26.50
Jet	39.99	26.50	Trivial Pursuit	19.99	13.50	Graphic Sheet	59.99	45.50
Jewels of Darkness	19.99	13.50	Terramex	19.99	13.50	G.S.G.C. Compiler	24.95	17.50
Joan of Arc	19.99	13.50	Terrorpods	24.99	16.50	Hi-Soft Basic	79.95	60.50
Joe Blade II	19.99	13.50	Transputer	24.99	16.50	K. Data	49.99	32.50
Juggler	24.99	16.50	ThunderBlade	24.99	19.50	K. Graph II	49.99	32.50
Karate Kid 2	24.95	16.50	Techno Cop	24.99	19.50	K. Minstral	29.95	21.50
Kennedy Approach	24.99	16.50	Times of Lore	24.99	16.50	K. Roget	49.99	32.50
King's Quest Triple Pack	24.99	16.50	Ultima III	24.99	16.50	K. Word II	59.95	45.50
Knight Orc	19.95	13.50	Ultima IV	24.99	16.50	K. Sega	49.95	32.50
KnightMare	19.99	13.50	Uninvited	24.99	16.50	K. Occam	59.99	45.50
Las Vegas	9.99	7.50	U.M.S.	24.99	16.50	Lattice C V3	89.95	72.50
Leather Goddess	29.99	19.50	U.M.S. Disc I	12.95	8.50	Lisp	89.95	69.50
Leatherneck	19.99	13.50	U.M.S. Disc II	12.95	8.50	Macro Assembler	24.99	17.50
Leisure Suit Larry	19.99	13.50	Victory Road	24.99	16.50	Modula II Developer	149.95	110.50
Leisure Suit Larry II (Duel sided Disc to be used)	24.99	16.50	Virus	19.99	13.50	Modula II Standard	99.95	72.50
Living Daylights	19.99	13.50	Vampire Empire	19.99	13.50	Music Studio	24.99	21.50
Lombard RAC Rally	24.99	16.50	Vegas Gambler	24.99	16.50	M.C.C. Pascal	89.99	69.50
Lords of Conquest	24.99	17.50	War Games Con Set	24.99	16.50	Paintworks	34.95	26.50
Lurking Horror	29.99	19.50	Warlocks Quest	19.99	13.50	Pascal	89.95	62.50
Legend of the Sword	24.99	16.50	Where Time Stood Still	19.99	13.50	Power Basics	39.99	26.50
Mach III	19.99	13.50	Whirligig	19.95	13.50	Publishing Partner	159.99	115.50
Manhunter	29.99	19.50	Winter Olympiad	19.99	13.50	Sage Accountant	171.95	150.50
Mickey Mouse	19.99	13.50	Wizards Crown	24.99	16.50	Sage Accountant Plus	228.85	175.50
Mini Golf	19.99	13.50	Wizards Warz	19.99	13.50	Sage Bookkeeper	113.99	85.50
Mission Genocide	9.99	7.50	Wizball	19.95	13.50	Saved	29.99	21.50
Mean 18	24.99	17.50	Wanted	19.99	13.50	ST Data Manager	79.99	60.50
Mega Pack	24.99	16.50	Xenon	19.99	13.50	ST Eurotek	149.95	110.50
Maria's Xmas Box	14.99	10.50	Xevious	24.99	16.50	ST Swift Calc	79.99	60.50
Moebius	24.99	16.50	Zany Golf	24.99	17.50	ST Word Writer	79.99	60.50
Moonmist	29.99	19.50	Zynaps	19.99	16.00	ST Replay	79.99	60.50
Marble Madness	19.99	14.50	20000 Leagues Under the Sea	19.99	13.50	Super Conductor	49.99	32.50
Mind Forever Voyaging	29.99	19.50				Superbase Personal	99.95	72.50
Maniac's Diary	24.99	16.50				Timeworks DTP	99.95	72.50
Munsters	24.99	17.50				Timeworks Partner	49.95	32.5

You'd be forgiven for thinking the ST a newcomer. Only this last year has the machine become the darling of the press; barely a week goes by without it making the headlines.

Yet the ST has been lurking around for almost four years. Richard Monteiro tells its tale...

The ST story starts back in January 1983 – Friday 13th of all days – when Jack Tramiel abruptly left Commodore. If Commodore's chairman, Irving Gould, hadn't disproved of Jack's idea of placing the Tramiel sons in senior executive positions at Commodore, the ST might not be here today. At the time of Jack's departure, the once-thriving Atari was a billion dollar headache for owner Warner Communications. After hitting \$2 billion sales in 1982, Atari's sales flopped. Instead of making money, it lost hundreds of millions – around \$538 million in '83.

That's when Warner approached Jack. The final deal, which has amazed securities analysts for years, involved Warner selling Atari to Jack and Jack borrowing the money from Warner to buy Atari. Warner got the bum side of the deal, if you haven't worked it out yet.

Sex crime

1984 was the year that Atari slung a \$100 million lawsuit at Commodore. It transpires that Atari had bankrolled Amiga Inc – this was before Jack appeared on the scene – to the tune of \$500,000. Apparently Amiga gave back the money to Atari and sold the developments to Commodore for over \$20 million. Those developments, of course, appeared later as the Amiga A2000 and then the A500.

ST tech spec

16-bit in computerspeak is the equivalent of 16-valve in fastcarspeak. Both conjure images of speed and power. The ST – with its high powered initials – could almost be a fast car. In fact, ST stands for Sixteen Thirtytwo (not Sam Tramiel, son of Atari's president Jack Tramiel, as many romantics would have you believe). Unless you're a programmer sixteen thirtytwo is meaningless.

At the core of all STs lies Motorola's 68000 micro processor running at 8Mhz; this chip talks to the rest of the circuitry using 16-bits (hence 16-bit machine) while it talks to itself in 32-bits. Generally, the more bits flying about the faster program execution takes place.

Amongst its armoury the ST has a minimum of 512K memory (expandable to 4Mbytes); 128K ROM which contains GEM and TOS; the graphics chip Shifter which is capable of a 320 by 200 16-colour resolution, 640 by 200 4-colour resolution and 640 by 400 monochrome resolution (colours are chosen from a palette of 512); YM-2149 sound generator that produces three-channel square sound waves. The Megs also have a blitter chip which speeds up graphics operations.

Connections include cartridge port (which can accept 128K of ROM), monitor socket, second drive slot, DMA port, MIDI sockets, parallel (or printer) port and serial interface.

HISTORY lesson



Not to be outdone, Jack ordered his engineers to get to work on a 68000-based machine. This wasn't such an impossible task as it sounds because much of Commodore's top talent joined Jack at Atari. With them, they brought the numerous ideas that had been floating around during Jack's time at Commodore.

It was at the January 1985 CES show in the States that the ST was first shown. An extraordinary turn around. Something that wouldn't have been possible if many off-the-shelf items weren't packed into the machine. The most obvious time saver was the inclusion of the GEM operating system. Europeans saw the ST for the first time at the Hanover show in March of the same year. Five months later the machine was displayed at the PCW show in the UK.

Atari baby

Shortly after the PCW, it was actually possible to buy the ST in Britain. At that time a 512K machine plus monochrome monitor cost £749.99. Bad news for the bank balance. The first STs came in several bits – processing unit, disk drive, power supply and operating system on disk. The machine was

Amazing facts 1

- Nolan Bushnell, who created the first fragrantly titled video game Pong, was also responsible for naming his company 'Watch out or I'm going to get you on your next move' – the translation for Atari which appears in the Japanese game called Go.
- Digital Research commissioned Bristol-based Metacomco to write a version of BASIC for the PC – Personal BASIC. It was converted for and supplied with earlier Amigas until Microsoft, who had originally been drafted in to write Amiga BASIC, finished their version. Commodore switched to Microsoft's BASIC when it was completed and Atari adopted the cast-off, now known as ST BASIC.
- It's not generally known that during a freezing night in September 1980 Jack Tramiel was almost killed when the jet he was flying in caught fire at 20,000 feet. Along with several executives, Jack was in a burning plane for around 45 minutes before the pilot managed to land. It's a miracle the fire didn't reach the fuel tanks.

MICRO BIOGRAPHY

ATARI ST

known as the Atari 520ST.

Software at that stage was in short supply – and pretty awful, the most notable exception being the wonderfully addictive Megaroids.

During the first half of '86 the STM appeared; the only difference to the original model being the inclusion of a modulator (hence the M) which meant owners could use the ST with a television. At long last there was a way of getting at the ST's colour modes. The STFM appeared later the same year. The floppy disk and power supply were combined with the processing hardware and keyboard to provide the now familiar ST unit.

Amazing facts 2

- Several models of the ST have been proposed – some have even reached prototype stage – but have never been publically available. For instance, the 260ST with 256K of memory (they say it's big in Canada), the 780ST which was said to have 750K and the 4Mbyte 4160ST. The 4160ST is available, in a different box; it's called a Mega ST4.
- TOS – the operating system (not Tramiel operating system as many would have you believe) – is continuously being updated. The latest, 1.4, should be complete in a few months time. The OS is kept in ROM; with the help of a good memory editor you can discover messages left by the programmers.
- Bob Gleadow, Atari UK's MD, was once a Commodorian; with many top Commodore people, Bob moved to Atari when Jack left Commodore.
- STs are put together by Taiwanese whose average age is 12, and who are cheaper than STs.

Four years of the Atari ST...

1985	January	First sightings of the ST at the CES show.	February	with a blitter.
	September	UK is shown the machine at the PCW show; shortly afterwards it becomes publically available. The first ST comprises a disk drive, keyboard and processing unit, and power supply.		Atari drops ST prices; 520STFM costs £399. The SC1224 colour monitor is introduced at the same price.
			May	Megas are at last available... but shipping without blitter.
1986			September	Megas still shipping with no blitter.
	February	The ST gets a modulator and an M tagged to its title. It's now possible to hook the computer to a television. TOS now in ROM.	1988	
	March	All the bits and pieces of the ST are brought together into one box. An F has also been added to the name. The machine is now called the 520STFM.	June	Laptop ST rumours.
	April	The 1040STF appears. A 1Mbyte machine with a £799 plus VAT price. Also, Sam Tramiel announces that an enhanced ST will be available in late '86 or early '87. Shome mishtake shurley?	July	The 1040 now has a modulator built in. Its title changes to 1040STFM.
	September	The Atari village at the PCW had some surprises on show: the blitter chip, and Mega 2 and Mega 4 machines.	September	520 reduced to £299. A special bundling deal which consists of 21 games and Organiser is put together for the 520. The price for the bundle is £399.
			December	Stacey laptop not shown at Comdex.
1987			1989	
	January	Megas are due in the shops in the second quarter of the year and will come supplied	January	More news on the Super ST. It's going to have a '030 processor and lots of colours. But then again it might have a 16MHz-rated 68000 with no graphics.
			February	A new 1Mbyte ST is announced. This one will look like standard Mega STs, but will only have 1Mbyte.
			March	Stacey is seen at Hanover. Shipment is expected any day.

Future shocks

From '86 onwards things become blurred because of Atari's habit of announcing hardware months before it's available. It's a good policy because if something is announced and it gets a luke warm reception, there's little point in marketing the product. So far this has worked well – can you think of anything Atari has officially launched in recent times that has flopped?

The ST is certainly the most sought after micro currently. Something to do with price and there being a machine for every application. At the moment there are four machines: 520, 1040, Mega 2 and Mega 4. But the end of the year there could well be another four: laptop (Stacey), Mega 1, EST (enhanced ST) and console. If Atari keeps launching more powerful versions of the machine, the ST's success is guaranteed well into the '90s. ●

IT'S WICKED!
TALK TO US - WE'VE GOT TIME FOR YOU!



£219 inc VAT & carr.

LC10 COLOUR ONLY £279.99 inc. SOFTWARE

C64 TAPE DECK£29.95
POWER SUPPLY£24.95
ACTIONREPLAY Mk 5 PROFESSIONAL.....£34.95

OCEANIC OC118N DISK DRIVE

Commodore 64 Compatible.
PLUS Superb Adventure Software Bundle - DRAGON WORLD - SPIRIT OF THE STONE - ZORK II (limited stock, titles may vary)

ONLY £129.99 inc carriage

MORE SOFTWARE THAN YOU CAN HANDLE!
MORE HARDWARE THAN YOU CAN USE!

STAR LC10

PRINTER + FREE CABLE
Commodore Serial/Centronics Interface
PLUS FREE Integrated Software Package. Word Processor - Database - Comms (worth £34.95)

WE STOCK SOFTWARE FOR ATARI 65XE/C16 MSX ELECTRON/BBC + SEGA & ATARI 2600 GAMES CONSOLES

JOIN OUR SOFTWARE CLUB:

GENEROUS DISCOUNTS TO ALL CLUB MEMBERS. VISIT YOUR NEAREST STORE FOR DETAILS.

VISIT US SOON. YOU WILL LIKE WHAT YOU SEE.

Unable to visit? Never mind. Our Mail Order Service will see you right.

MAIL ORDER:

Ring our Stoke-on-Trent store to place your order. We accept Access & Visa (we might even take cash or a cheque). Craig will despatch your order speedily & safely. Same day despatch on all stock items.

SHEFFIELD

6Waingate
Sheffield
Manager: Andy
Tel: 0742 721906
Closed Thursday

STOKE-ON-TRENT

11 Market Square
Arcade, Hanley
Stoke-on-Trent
Manager: Dave
Tel: 0782 268620
Open 6 Days

Software
SUPERSTORE

STOCKPORT

6 Mealhouse Brow
(Off Little Underbank)
Stockport
Manager: Wayne
Tel: 061 480 2693
Closed Thursday

ST HELENS

27 Baldwin Street
St Helens
Manager: Adrian
Tel: 0744 27941
Closed Thursday

YOUR ONE STOP SHOP

FOR A COMPLETE RANGE OF SOFTWARE - HARDWARE - PERIPHERALS - 2nd DISK DRIVES - RAM UPGRADES - MONITORS - PRINTERS - DISKS - DISK BOXES - JOYSTICKS - MOUSE MATS & A WHOLE LOT MORE!
AMIGA + FREE SOFTWARE PACK - MORE THAN 5 DIFFERENT PACKS TO CHOOSE FROM.
ATARI ST 520 & 1040 - AGAIN MANY SYSTEMS TO CHOOSE FROM & ALL WITH GREAT FREE SOFTWARE BUNDLED WITH THEM. PRICES ARE CHANGING ALL THE TIME - RING FOR LATEST DEALS.

SEND LARGE S.A.E. FOR FREE 20pg CATALOGUE

Our Showroom is only 1 mile from Junction 23. M6. Just Past, Haydock Park Racecourse (Open Six Days)

COMPUTERS SADDLER COMMUNICATIONS

(Please ask for M.O. Dept. quoting NCE)
Telephone (0942) 719122 (24hrs)
Fax: (0942) 271226

Saddler Computer Services Ltd, 71/77 Warrington Road, Ashton-in-Makerfield, Nr Wigan. WN4 9PJ

AMSTRAD PC1512/1640

PC 1512	SD MD	£366.00
PC 1512	SD CD	£444.00
PC 1512	DD MD	£444.00
PC 1512	DD CD	£522.00

SPECIAL OFFER - Buy an Amstrad DMP 3160 Printer with any PC1512 this month for only **£95.00**

PC 1640	SD MD	£455.80
PC 1640	SD CD	£545.00
PC 1640	SD ECD	£630.00
PC 1640	DD MD	£519.00
PC 1640	DD CD	£608.00
PC 1640	DD ECD	£699.00
PC 1640	HD MD	£699.00
PC 1640	HD CD	£786.00
PC 1640	HD ECD	£875.00

THE NEW AMSTRAD PC2086 RANGE

SD 12MD (SINGLE DRIVE WITH 12" MONO)	£565
SD 14CD (SINGLE DRIVE WITH 14" COLOUR)	£695
SD 12HRCD (SINGLE DRIVE WITH 12" HIGH RES. COLOUR)	£785
SD 14HRCD (SINGLE DRIVE WITH 14" HIGH RES. COLOUR)	£865
DD 12MD (TWIN DRIVE WITH 12" MONO)	£670
DD 14CD (TWIN DRIVE WITH 14" COLOUR)	£800
DD 12HRCD (TWIN DRIVE WITH 12" HIGH COLOUR)	£890
DD 14HRCD (TWIN DRIVE WITH 14" HIGH RES. COLOUR)	£970
HD 12MD (SINGLE DRIVE WITH 30 MEG HD AND 12" MONO)	£890
HD 14CD (SINGLE DRIVE WITH 30 MEG HD AND 14" COLOUR)	£1020
HD 12HRCD (SINGLE DRIVE WITH 30 MEG HD AND 12" HIGH RES. COLOUR)	£1110
HD 14HRCD (SINGLE DRIVE WITH 30 MEG HD AND 14" HIGH RES. COLOUR)	£1190

**THE AMSTRAD PC 2386 NOW IN STOCK !!
(CALL FOR PRICES !!)**

THE **star** COMPUTER PRINTERS



LC-10

**LC10
£185
LC10
COLOUR
£205**

**ORIGINAL UK VERSIONS ONLY!
NO CHEAP IMPORTS**

- ✦ Low cost 9 pin, 10" printer
- ✦ 144cps Draft, 36cps Near Letter Quality
- ✦ Centronics or Commodore versions available.
- ✦ 4K buffer (Commodore version 1 line)
- ✦ Automatic single sheet load, push tractor and "Paper Parking" standard
- ✦ Colour Version Available

TV ADAPTOR

NOW FOR THE AMSTRAD PPC AND 1640 COMPUTERS

PPC	£36
PC1640	£41

**FULLY REFUNDABLE IF
UNHAPPY WITHIN 7 DAYS**

PRINTERS

CITIZEN 120D	£128
AMSTRAD 2160	£133
AMSTRAD 3250 di	£169
AMSTRAD 3500 di	£258
AMSTRAD DMP 4000	£260
AMSTRAD LQ5000	£335
CITIZEN HQP 45	£395
BROTHER HR20	£380

+BROTHER HL8 £1540

WORD PROCESSORS

PCW 8256	£316
PCW 8512	£399
PCW 9512 (Trade in offer - Please call for details)	£404



**FOR THE OFFICE,
SCHOOL AND
HOME**

SINCLAIR PC 200

16 Bit Processor, 512K RAM,
Built in TV Modulator, 3 1/2 D/Drive
2 IBM Comp. Exp. Slots parallel
Cent. Port and more...
Call us Today!

Without Monitor	£275
Mono Monitor	£359
Colour Monitor	£439

LC24-10

£272



- ✦ Low cost Letter Quality, 24 pin 10" printer
- ✦ 170cps Draft, 57cps Letter Quality
- ✦ Industry compatible.
- ✦ 7K buffer expandable to 39K
- ✦ Selectable font & RAM cards.
- ✦ Automatic single sheet-load, push tractor and "Paper Parking" standard.
- ✦ Eight Resident Fonts.

**EXTERNAL 5 1/4" D/D
FOR THE
PC 2086/PC200
ONLY £109**

AMSTRAD PORTABLES

PPC 512 SD	£372.90
PPC 512 DD	£482.90
PPC 512 DD + 12" MD	£507.00
PPC 640 SD	£456.71
PPC 640 DD	£565.71
PPC 640 DD + 12" MD	£589.00



**PORTABLE HARD
DISK DRIVES FOR
AMSTRAD PPC'S**

CUMANA 20Mb	£395
CUMANA 30Mb	£420

AMSTRAD VGA MONITORS!

12" MONO DISPLAY	£96
14" COLOUR DISPLAY	£240
12 HIGH RES. COLOUR MONITOR	£336
14" HIGH RES. COLOUR MONITOR	£432

HARD CARDS

MINISCRIBE 20Mb	£192.50
MINISCRIBE 30Mb	£203.50

SOFTWARE (Please specify 5 1/4" or 3 1/2")

Wordstar Express (Amstrad)	£53.00
Wordperfect Personal (Sentinel)	£106.00
DTP Lite (GST)	£36.00
Timeworks (GST)	£95.00
Mini Office Professional (Database)	£26.00
Infomaster (Amstrad)	£49.00
dBase IV (Ashton-Tate)	£385.00
Supercalc 3.21 (Amstrad)	£53.00
Lotus 123 (Lotus)	£289.00
Accounts Master (Amstrad)	£106.00
Integrated Accounts (Map)	£105.00
Accountant (Sage)	£96.00
Accountant Plus (Sage)	£159.00
Turbo Pascal V5 (Borland)	£69.00
Autoroute (Next Base)	£109.00
Autoroute Plus (Next Base)	£224.00

Laser Printer 8



£1360

- ✦ 8 page per minute, series 2 laserprinter
- ✦ 1 megabyte memory standard, expandable to 2 megabytes.
- ✦ Centronics and serial interfaces fitted as standard.
- ✦ 4 standard emulations: HP, IBM, Epson, Diablo.
- ✦ First toner cartridge included.
- ✦ 12 Months On-Site Warranty included.



REMEMBER:

Our knowledgeable staff are always willing to give help and advice to help you choose what's best for you!

SERVICE CONTRACTS AVAILABLE FROM ONLY £36 PER YEAR

EDUCATIONAL & EXPORT ENQUIRIES WELCOME
Please send cheque today, payable to:

Saddler Computer Services Ltd

or phone us with your Access/Visa details.

All items * will be despatched same day.
(Cheques over £500 subject to clearance)

*Subject to availability



PRICES SUBJECT TO CHANGE WITHOUT NOTIFICATION

**ALL PRICES
EXCLUDE
VAT & CARRIAGE**

CARRIAGE:

Value up to £100 (post)	£4.00
Value up to £100 (carrier)	£10.00
Value over £100	
Printer	£6.00
Computer	£8.00
Printer and Computer	£10.00

ATARI

We Accept EXPRESS VOUCHERS

HOMESoft (UK)

Software and Hardware

We Accept EXPRESS VOUCHERS

AMIGA

ALMOST PROBABLY THE CHEAPEST MAIL ORDER /RETAILER IN EUROPE

COMMODORE AMIGA 500 MILES BETTER PK.

COMPLETE WITH STANDARD A500
PLUS T.V. MODULATOR, SPRITZ ART PACKAGE
WITH THREE MYSTERY GAMES
ALSO 500 AIR MILES

ENOUGH FOR A RETURN JOURNEY TO PARIS
ONLY £470.00

Philips CM8833 Medium Resolution Stereo Monitor ONLY £235.00	Commodore 1084S Medium Resolution Stereo Monitor ONLY £255.00
Cumana External 1MB Drives ST or Amiga ONLY £95.00	WATCH THIS SPACE: PC ENGINE COMING SOON!!

COMMODORE AMIGA 500

COMES COMPLETE WITH
KICKSTART 1.3 TUTORIAL DISK, BASIC,
MOUSE AND WORKBENCH 1.2
PLUS FREE T.V. MODULATOR AND ART PACKAGE
ONLY £358.00

OFFER ONLY WHILE STOCKS LAST
OFFICIAL PRICE INCREASE AS OF 31/3/88

AMIGA 500 Pack 6 Philips CM8833 Med Res Monitor Games Starter Pack with Modulator ONLY £585.00	AMIGA 500 Pack 7 Commodore 1084s Med Res Monitor Games Starter Pack with Modulator ONLY £615.00
--	---

PERIPHERALS

Competition Pro extra Joystick	£11.50
Competition Pro 5000 (Black) Joystick	£11.35
Cheetah 125+ Joystick	£6.40
Cheetah Starfighter Joystick	£11.50
Quickshot II+ Joystick	£8.90
Quickshot II Turbo Joystick	£10.55
Konix Speedking Joystick	£9.70
Konix Speedking Joystick + Autofire	£10.20
Konix Navigator Joystick	£12.50
3.5" DS/DD Disks per Ten	£9.50
3.5" DS/DD Disks per Fifty	£47.00
3.5" DS/DD Disks per Ten in case	£10.50
100 Capacity 3.5" Disk Box	£7.90
50 Capacity 3.5" Disk Box	£5.50
200 Capacity Posso Dleuxe 3.5" Box	£14.99
100 Capacity 5.25" Disk Box (While Stocks Last)	£4.50
3.5" Head Cleaner Kit (Deluxe)	£3.50
Twin Joystick Extension Lead	£4.50
Quality Mouse Mats	£4.50
Mouse Bracket	£2.50
Amiga Clear Perspex Dust Cover	£4.50
Four Player Joystick Adapter	£4.50
Abacus Learn Computing Books (S.A.E. for Details)	

16 BIT SOFTWARE	AMIGA	ATARI	16 BIT SOFTWARE	AMIGA	ATARI
1943 Battle of Midway	13.90	13.90	Neather world	13.90	13.90
3D Pool	11.70	11.70	Nineteen Part One	11.70	11.70
4th & Inches	13.90	13.90	Orbiter	14.70	14.70
4 x 4 Off Road Racing	13.90	13.90	Outrun Europa	10.99	10.99
Amiga Gold Hits	16.80	...	Overlander	14.70	11.70
Arcade Force Four	...	16.80	Pacmania	11.50	11.50
Action Service	11.70	11.70	Pioneer Plague	14.70	...
Action ST	...	13.90	Pools of Radiance	15.90	15.90
Ballistix	11.70	11.70	President is Missing	14.70	14.70
Balance of Power 1990	14.70	14.70	Prison	11.70	11.70
Battlechess	16.80	...	Project D Backup Tool	29.50	...
Barbarian II	11.70	11.70	Purple Saturn Day	14.70	14.70
Batman	14.70	11.70	Rambo III	14.70	11.70
Battlehawks 1942	14.70	14.70	Return of the Jedi	11.70	11.70
Blasteroids	14.70	11.70	Renegade III	14.70	11.70
Bombuzal	14.70	14.70	RoadBlasters	16.80	16.80
Butcher Hill	13.90	13.90	Robocop	14.70	11.70
Chaos Strikes Back	...	9.70	R-Type	14.70	11.70
Captain Blood	14.70	14.70	Scenery Disk no 7	12.70	12.70
Captain Fizz	9.70	9.70	Scenery Disk no 11	12.70	12.70
Crazy Cars II	14.70	14.70	SDI (Activision)	11.70	11.70
Custodian	13.90	13.90	Silkworm	11.70	11.70
Cyberoid	13.90	13.90	Skrull	14.70	14.70
Dark Fusion	13.90	13.90	Shoot-em Up Con. Kit	14.70	14.70
Double Dragon	11.70	11.70	Star Wars	11.70	11.70
Dream Zone	14.70	14.70	Stormtrooper	11.70	11.70
Dragon Ninja	14.70	12.70	Starglider II	14.70	14.70
E. Weaver Baseball	13.90	...	Sword of Sodan	17.70	...
Elite	14.70	14.70	STOS	...	19.90
Empire Strikes Back	11.70	11.70	STAC	...	29.90
Espionage	11.70	11.70	Sundog - Frozen Legacy	...	8.90
Five Star Compilation	...	14.70	Three Stooges	17.70	17.70
Footvision	29.00	...	Triad	17.70	17.70
Flight Simulator II	23.90	23.90	Tiger Road	13.90	13.90
Flying Shark	14.70	14.70	Techno Cop	13.90	13.90
Fright Night	11.70	11.70	TV Sports Football	17.50	...
Galdregon's Domain	11.70	11.70	Thunderblade	14.90	12.90
Galactic Conqueror	14.70	14.70	Turbo Cup	11.70	11.70
Games - Summer Ed.	13.90	13.90	Ultimate Golf	13.90	13.90
Ghosts 'n' Goblins	13.90	13.90	U.M.S.	14.70	14.70
Helter Skelter	9.70	9.70	Virus	11.70	11.70
II K M	10.99	10.99	Vindicators	11.70	11.70
Hostages	14.70	14.70	Victory Road	14.70	11.70
International Karate -	14.70	11.70	Weird Dreams	14.70	14.70
Iron Lord	16.80	16.80	Western Europe Scenery	12.70	12.70
Japan Scenery Disk	12.70	12.70	Worldclass Leaderboard	13.90	13.90
Jet	23.90	23.90	Who Framed R. Rabbit	14.50	...
Jean of Arc	12.70	12.70	Zany Golf	16.80	16.80
Kennedy Approach	14.70	14.70	Zoom	11.70	...
Kenny Dalgligh Soccer	11.70	11.70	Zak McCracken	16.80	16.80
Kristal	17.70	17.70	LED Storm	13.90	13.90
Land of Legends	17.70	17.70	Lombard RAC Rally	14.70	14.70
Last Duel	10.99	10.99	Advanced Ski Simulator	11.70	11.70
Lancelot	11.70	11.70	Advanced Rugby Sim.	11.70	11.70
Munsters	11.70	11.70	Black Tiger	16.80	13.90
Nebulus	13.90	13.90	Cosmic Pirate	11.70	11.70

ALL GOODS DESPATCHED
WITHIN 12 HOURS
SUBJECT TO AVAILABILITY

 
SERVICE
SOFTWARE BARGAINS
THE FOLLOWING
SOFTWARE AT:
£4.99 EACH

BETTER DEAD THAN ALIEN
BACKLASH
HELLBENT
ATAX
FINAL ASSAULT
SPITTING IMAGE
WIZARD WARZ
LEADERBOARD - BIRDIE
WINTER OLYMPIAD
INTERNATIONAL SOCCER
QUADRALIEN
STAR GOOSE
OUTRUN
SIDE ARMS

AMIGA A500 ONLY

ATARI 1040 STFM £445.00 BUSINESS PACK
ST MOUSE £22.50
REAL TIME CLOCK £42.50

ATARI SM 124 HI RES MONITOR £120.00
ATARI SC 1224 MED. RES MONITOR £370.00

ST CLOCK CARD (Internal) £24.90
ST CLOCK ROM (External) £24.90

OPEN
MON-FRI 9AM-8PM
SAT 9AM-4PM
CALLERS WELCOME

COMMODORE A501 1mb EXPANSION CARTRIDGE £130.00
WORKBENCH V1.3 £14.99
COMMODORE C64 HOLLYWOOD PACK £135.99

COMMODORE A520 T.V. MODULATOR £19.99
1352 AMIGA MOUSE £31.50
COMMODORE C64 ENTERTAINMENT PK £178.99

SPECIAL OFFERS		
	AMIGA	ST
Falcon	£17.50	£14.50
Super Hang On	£14.70	£11.70
Dungeon Master	£14.70	£14.70
Gauntlet II	£15.90	£12.90
TV Sports Football	£17.50	...
Denaris	£13.20	...
Speedball	£14.50	£14.50
California Games	£12.50	...
Dragon's Lair	£29.50	...
F16 Combat Pilot	£14.50	£14.50
Rocket Ranger	£17.50	...
Baal	£11.60	£11.60
Afterburner	£14.70	£11.70
F.O.F.T.	£17.70	£17.70
Games Winter Edition	£13.90	£13.20
Interceptor (EA)	£16.60	...
Heroes of the Lance	£15.90	£15.90

ACCESS/VISA
CARD HOTLINE
0772 - 452414

All prices include VAT and Postage.
Hardware included.
Europe Add £2.00 per item
Express Next Day
Courier service Available



UNIT 13
CENTURION WAY IND. ESTATE
LEYLAND, PRESTON
LANCASHIRE. PR5 2GU
TEL: 0772 - 452414 - Sales
- 455685 - Advertising

FOR NEW RELEASES AND ITEMS NOT LISTED PLEASE PHONE US TODAY.
NEW TITLES WILL BE DESPATCHED ON CONFIRMED DATE OF RELEASE.
GOODS SUBJECT TO AVAILABILITY AND CHANGE WITHOUT PRIOR NOTICE.
OFFER ENDS 31st JULY 1989. HOMESoft (UK) CARES FOR ITS CUSTOMERS.

NEW COMPUTER EXCESS

First news, first reviews – every week

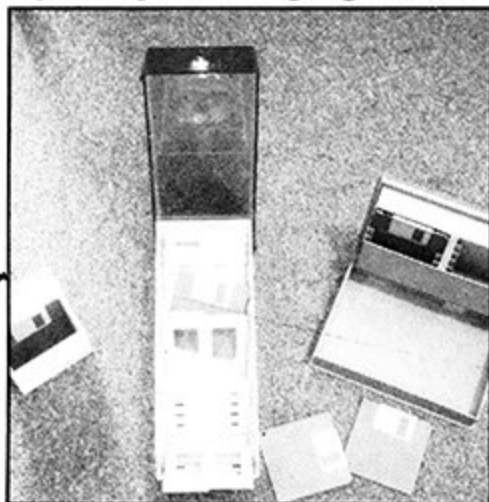


MINI MICRO

The worlds smallest micro – for under £50

page 31

Which disk box?



Express reveals the facts – and fearlessly names the best buys! -page 15

YET ANOTHER RUDDY BUNDLE



Amiga to be bundled with ST shock - page 2

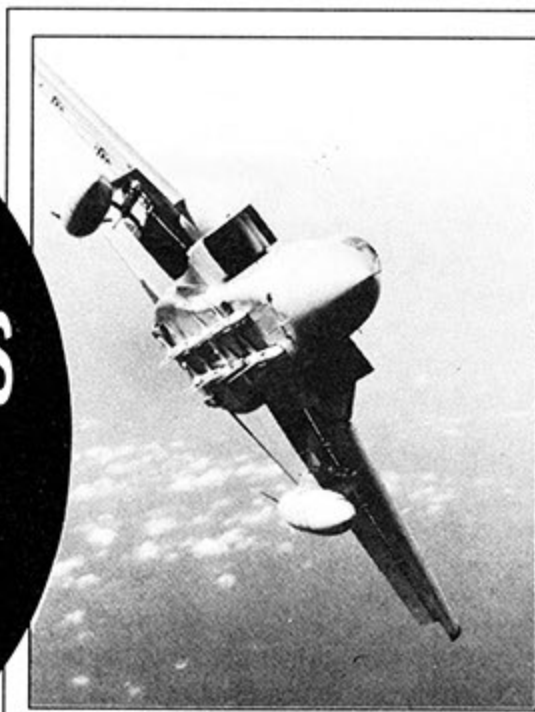
Obituary columns for YOUR machine

- Memotech**
- Jupiter**
- Dragon**
- Oric**
- Lynx**
- TRS 80**
- NCR**
- C5**
- Abacus**

-pages 37-44

BUDGET PC SPREADSHEETS

Four sub-£2,000 programs compared



STAR GLIDER III EXCLUSIVE!

Stunning realtime ray-traced CD graphics -page 55



IT'S ANOTHER SUPER OFFER

By Our Man In An Anorak Sir Giles McLibellous

Following a string of amazing 16-bit offers this year Commodore and Atari have come up with what must be their most impressive deal yet.

In a shock move the two manufacturers have decided to bundle the ST and Amiga - together. Excess can reveal that hardware buyers can now take home the two machines for the price of one.

Whilst some have commented that the two manufacturers bids to win the 16-bit pound have bordered on the overly generous this must be their most impressive offer to date.

It is understood that the ST and Amiga will come in the same box along with one top selling game, 33,798 awful games, 14 bug ridden DTP packages, 26 paint packages, an Archimedes emulator, a free holiday in Bolivia and a chance to represent one of the firms in a court case of your choice. The notional value of this package is \$74 million.

A Commodore spokesman spouted: "This really is a value

added offer which will attract the upwardly mobile buyer. You know the ST is really the perfect add on for the Amiga. I always did think it was a marvellous machine."

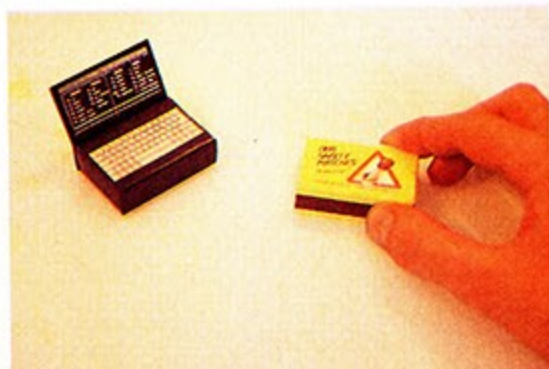
In contrast Atari's spokesman declined to comment saying only: "I don't know anything about it and if I did I wouldn't tell you lot. Go away." It has been suggested that Atari feels this bundle is the only way to offer the ST with stereo sound. This is being entirely refuted by the firm.

Both companies are hoping to attract first time buyers who don't know the first thing about computers. The bundle is expected to last until about 3pm on Sunday afternoon.

Thatcher hits the roof

In a surprise move this week, UK Silver announced a tie-in licence deal with Madame Tussauds involving the unlikeliest of characters - Mrs Thatcher. The game will place you in the role of the Iron Lady herself, and the aim is to sack all the members of the cabinet before the next general election. Along the way you will be able to pick up various useful items, like Murdochs, Parkinsons and disposable Channons. Blue Ninja is due for release this Christmas on all major formats, plus MSX.

Ever hot on exclusives, Express brings you the first screenshot of Swan Systems' new micro, The Purse PC. Although the miniature super-twist screen supports a full 80 column display with characters barely discernable to the naked eye, Swan is bundling The Purse with glasses able to magnify on-screen images to a size claimed to emulate a 14" monitor. Critics of the



• The new Swan Purse shown next to a matchbox

small keyboard were silenced when Swan announced the inclusion of an ingenious pair of gloves featuring needle point finger tips. The Purse PC is expected to sell for less than £50.

Cray laptop!

The manufacturers of the fastest mainframe in the world announced plans to launch a laptop version. Provisionally called the Cray Fiche, it can address 34Gb of RAM with a 32-bit main processor running at 51Mhz. A company spokesman said "the Cray Laptop will cater for all the needs of the modern power user". Expected to retail for £6,999,999.95, the new machine should be available as you read this.



• The Cray Fiche: catering for the "power user"

Cousteau coup

Hawaiian manufacturer Coral has just previewed a prototype of its new underwater computer, the Oceania. Designed to operate at depths of upto 300ft, the A4 sized hand held is taking divers by storm. Featuring a liquid crystal display, the machine is PC-compatible and file transfer is possible with the waterproof leads supplied. Built-in software includes an integrated diary and calendar suite, on-line comms facility and a fish identification database.

Swan lights up PC world

TOP 20 Full Price GAMES

- Rubbercop** SEANWARE
Spectrum, C64, CPC
- Psycho Ninja** WATER GAMES
Spectrum, C64, CPC
- MG Club Speed Trials** BORETECH
Spectrum, C64, CPC, ST, Amiga
- Clough Ninja** BALLMASTERS
Spectrum, C64
- More Games** BULK SHIFTERS
Spec, C64, CPC
- Operation Frog** AMPHIBIONICS
Spectrum, C64, CPC, ST, Amiga
- Borstal Tutor** DEPARTMENT OF EDUCATION
Spectrum, C64, CPC, BBC
- Cessna** MAGGOTSOF
ST, Amiga, PC
- Pratmania** CRETEIN SOFTWARE
Spectrum, C64, CPC, ST, Amiga
- Vat Man** SCRUBS ENTERPRISE SCHEME
Spectrum, C64, CPC, ST, Amiga
- Afterthought** FLACODWARE INC
Spectrum, C64, CPC, ST, Amiga
- Dunarius** SANDYVISION
C64, Amiga
- Thunder Blag** RONNIE & BUSTER
Spectrum, C64, CPC, ST, Amiga
- Double Dross** SIDNEY OPERA HOUSE
Spectrum, C64, ST, Amiga, PC
- Midgets** TRANSATLANTIC TOSH
Spec, C64, CPC
- War In Macclesfield** FUTUREWARE
Spec, C64, CPC
- Barbarian 268** SHED
Spectrum, C64, ST
- Penultimate Ninja 43** RETRODRIGE
Spectrum, C64, CPC
- Bollixik** PROLAPSE
ST, Amiga, PC
- TV Crap Licences** TELLYNOB
Amiga

TOP TEN Budget GAMES

- SBS Coracle Sim** COO BLASTERS
Spectrum, CPC
- Tedious Island** ETERNAL BUGWARE
Spec, CPC
- Weed Games** DRIPS
Spectrum, C64, CPC, MSX
- Bum Jab** MEDISMS
Spectrum, C64, CPC, ST, C16
- Joe Bloat 2** SANSBURY'S
Spectrum, C64, CPC, BBC, C16, Electron
- Mitten** WRAPUPWARMWARE
Spectrum, C64, CPC, Atari 8-bit, MSX
- Gameplay Simulator** LOADERS
Spectrum, CPC
- Large Dog In Cheam** PULSOFT
Spectrum, C64, CPC
- Potboilers** TRIPODRONIC
Spectrum, C64, CPC, Atari 8-bit
- Format 11** MIRACLE
Spectrum, C64, CPC

RE re-entry • NE new entry • Last week's positions

Compiled by Excess

INTERNATIONAL ASSASSIN SIMULATOR

CARNAGE EPICS

Amiga • £29.99dk
Also on ST, PC, C64

Featuring the very latest in realtime digital effects, Assassin sets out to seek the success scored by the legendary *Communist Execution Simulator* and *Advanced Genocide Simulator*.

● **GAMEPLAY**

Assassin comprises three levels in which you play a nameless killer with a brief to murder five of the world's leaders as quickly as possible.

● **GRAPHICS AND SOUND**

Although the resolution, colour and smoothness of the moving video sequences is excellent, the attention to detail displayed in the way blood seems to hit the inside of your monitor is truly awesome. Similarly, the treatment of gaping wounds and dismemberment is



• Blow off de Gaulle's hooter before the feds pile in

fabulous. As you might expect, sound is confined to the prolonged screams of death-throe agony and is in stereo.

● **OTHER VERSIONS**

Just as you'd imagine on every other load of old tosh that isn't an Amiga.

● **EXCESS VERDICT**

If you like this sort of game, it's the sort of game for you. If not, don't buy it.



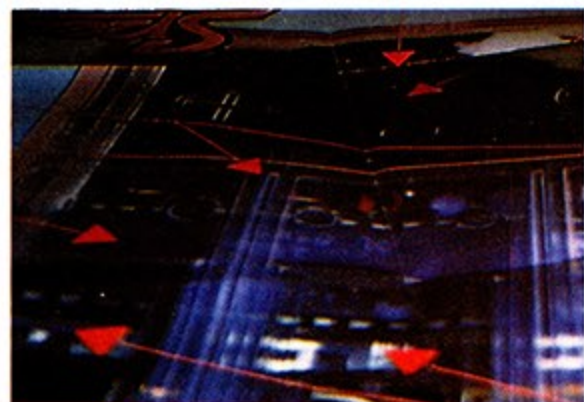
Frederick Foresight

CYBER CHESS

CHIBA CITY CIRCUITS

Archimedes • £39.95dk
Also on ST, Amiga, MSX

Chiba's recent releases achieved wide spread notoriety with reported deaths now amounting to over 200. Will *Cyber Chess* deliver the same kind of impact we've come to expect?



• Piling through the ICE on the way to flatlining King's Pawn 3

● **GAMEPLAY**

Whizzing through a Mach 2 fractal landscape on a search for conceptals. Flat Line fall-back is, for the most part, indistinguishable from Construct distribution so working out strategic navigation through sub-cyber levels is relatively easy. Neural feedback is minimal and accelerations tilt to the max.

● **GRAPHICS AND SOUND**

Vision fields extend beyond normal stereoscopic range to open up an area stretching vertically to mid-cranium. The effect is well zarjaz! Full res def is total and graded kick-in fully responsive. Sonic receptor levels are, again, very upstream – spine-trodes positively reverberate as neural overload fades up to the op.

● **OTHER VERSIONS**

Cyber Chess looks good on both the A500 and the ST but nowhere near as grip as on the Meiga. Not so good on the Spectrum.

● **EXCESS VERDICT**

Well worth smuggling code for. Main line input is on 0225 446034.



Billy Gibson

DEATHMASH IV

BLUSOKE SOFTWARE

ST • £19.99dk
Also on BBC, MSX, Atari 8-bit, C16,
Dragon 32, Oric Atmos, ZX81

You take the role of Luke Scytheslasher, Intergalactic Genocide Officer in this vertically-scrolling shoot-'em-up from Blusoke.

● **GAMEPLAY**

It's your job to rid the universe of the evil alien Zgmmrrgnbgngobos as they swarm into your solar system from outer space spreading death and destruction in your path only you can stop them with your transformable land-cruising jet fighter spaceship with collectible weapons such as phasers slashers invincibility shield five pound claw hammers and nuclear



• Level Three, and the first wave of Centauran Battledroids

disembowellers only you can stop them or have I already said that and then destroy the end-of-level guardians in this unique outing on the ST.

● **GRAPHICS AND SOUND**

Sprites are pretty well what you would expect given the limitations of the machine. The scrolling backdrops are fortunately kept in the background, where they scroll either upwards or downwards, one or the other. Sound is confined to the explosion of the aliens' entrails as their slimy green bodies are exposed to the vacuum of deep space when your phaser rips its hull to shreds. Limited realism.

● **OTHER VERSIONS**

Already available on lots of other machines. The versions vary according to how good they are.

● **EXCESS VERDICT**

It's been a long time since we've seen anything this original on the ST. It was so refreshing to be able to pick up the phasers before the invincibility shields, which is so rare in a game of this type.



Bluto McThud

TECH TIPS

TIP

Sound idea

A constant problem with the PCW is its lack of a proper sound chip. It can only emit a single "beep" – this can get rather annoying after a while.

However, this simple addition to the machine will give you full stereo sound. First, hire a major orchestra for an evening, such as the City of Birmingham Symphony Orchestra or the LSO. Then, write out the tunes you want to play in orchestral parts, remembering to transpose for instruments such as the horn and the clarinet, and give them to the members of the orchestra.

Finally, write a simple BASIC program to flash the screen on and off in time with the music thus using the PCW as a conductor beating time for the orchestra. This can be achieved using CHR\$(27)+"p" and CHR\$(27)+"q". In this way you can handle even complex musical applications and write quite impressive sound tracks to games!

Simeon Twaddle, Godalming, Surrey

• The CBSO offers this word of warning: if talking to Simon Rattle, avoid mention of guinea pigs or Shostakovich, especially the later string quartets.

HELP!

MSXtremely boring

I have an MSX. Can you help me?

Ron Slugg, Newbury, Berks

• No.

TIP

Hardware upgrade

If you're an 8-bit owner like me and are jealous of your friends who have Amigas and STs, why not break into their house and steal their machine? Not only does this wipe the smile off their smug little faces, but it gives you 16-bit power for free!

Damien Flint, Northallerton, Yorkshire

HELP!

Interesting query

I have a Dragon 32 and would like to use some good word processing packages – it uses 5.25 inch disks. I have several at work on 5.25 inch disks but they are MS-DOS packages for use on a PC. Is there any way I can use them?

Eric McNulty, Birmingham

• Yes – quite easily, as it turns out! First check the serial number on the bottom of the case. If it ends in '566787' or '566788', remove the case and loosen the two screws holding the drive mechanism to the body of the machine, leaving enough space to solder a 560pF capacitor between the two exposed contacts; otherwise locate the dip switch behind the drive mechanism and simply select the '80 track' setting. Then put your Dragon in the bin, go and buy a PC, and run the word processing packages on that instead.

HELP!

Eighth dungeon problem

I've been playing *Dungeon Lair on Troll Planet Blood* on the ST solidly for months now and haven't got past the eighth dungeon. What should I do? Do you know any good pokes or tips? Please tell me what to do!

Neil Weatherall, London

• Try this tip. Quit the game, and click on the game files, selecting all. Then drag them into the waste basket. Turn off your machine and exit the bedroom. Walk down to the living room, and start talking to the members your family. (It's tricky at first, but you'll soon get the hang of it!).

TIP

Very interesting tip

I've noticed a very interesting thing on the BBC Master 128. If you hold down the leftmost RAM chips with a tyre lever while you've got the back off, you can unsolder two of the fourteen pins on

Welcome mat

The prospective mouse mat buyer is faced with a bewildering array of choice. Now MatTech reckon they've produced the ultimate. Peter Boredom, Editor of Mouse Mat World, tests it out...

SuperMat ● MatTech (0225 446034) ● £99.95

Mats have come a long way since the days of two inch plastic models. SuperMat boasts the latest in surfacing technology and has that characteristic 'silk on wood' feeling of top end mats. It is light, weighing in at just four ounces, comes with a protective leatherette carrying case and a detailed 300 page user manual. Registration entitles you to membership of the British Supportive Surfaces User Club and gives you subscription to the magazine *MatUser*.

It will be a boon to desktop publisher and graphics users. The mat contains metal mesh to conduct away friction heat caused by intensive mouse movement when drawing - a welcome

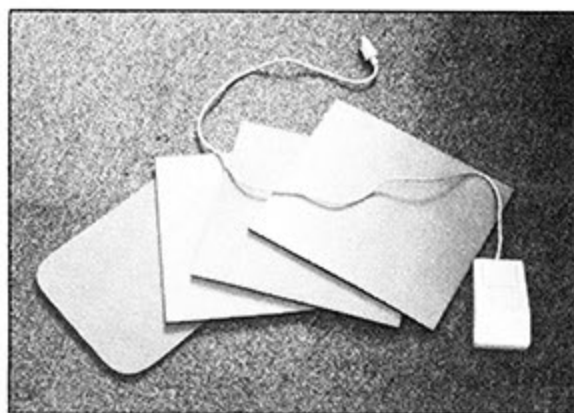
change from early mats which left the user with warm finger ends.

Caught by the blocks

SuperMat works splendidly with any leading package. *WordStar* can be a little smooth in the blocks menu, and *dBase* users should beware of long applications as the mat can get rather 'sticky' moving around long lines. Otherwise though the performance is smooth, judder-free, and every bit as good as we've come to expect from MatTech.

And just look at the spec: heat-sealed epoxy resin-based carbon fibre base, ability to withstand movement on the desktop in gusts of up to 300 mph, compatibility with mice of roll scan frequency up to 5MHz per milliradian, and an incredible drag coefficient at room temperature of 0.975. Only a few years ago with mats of this price you were lucky if you had a coefficient of 0.8!

The Mat comes in ST, PC, Mac and Amiga versions, with left-hand-



• MatTech's new baby clearly stands out from the rest of the crowd

ed options and a variety of colours available. The £69.95 upgrade adds a miniature chip inside the mat which 'learns' the shape of the desktops it is placed on and adjusts the surface shape for total smoothness. All in all a product that breaks new ground in mat technology. The mat for the '90s. ●

Shoot from the Lip... the week's most quotable sayings

"It's a bit cold outside. Better put a coat on."

Sir Clive Sinclair on the recent cold spell

"The MSX was, and is still, the best machine going. If you compare specs, it outperforms an ST, an Amiga, a PC2000, a Mac, a Cray - the lot"

Ron Deranged, inmate of The Bluebell Home for the Mentally Ill, Berks

"This is the most exciting release for the

BBC for over five years"

Eric Drudge of Nondescript Software on the release of *British Weather Patterns and Rainfall Distribution 1964-68*

"I'm afraid he's right"

Stan Crumb, Editor of *BBC Micro Monthly*

"If I see another bloody story about bundles, I'll - aargh -"

The last words of Dave Nobblington, *Express* reader

MegaSoft World Holdings International

ZURICH • NEW YORK • PARIS • TOKYO • GRIMSBY

Flat 4, Behind the garage, 15b Scunthorpe Grove, Brickyard Lane, Grimsby, South Humberside GR36 8UK

SOFTWARE

Lester Piggot Accounts.....	£19.95
Ken Dodd Tax Planner.....	£19.95
Alex Higgins Boxing.....	£14.95
John Cage Music Studio.....	£29.95
Harvey Proctor Games Compilation.....	£9.95
Ivan Boesky Stocks'n'shares.....	£12.95
Nigel Mansell Racing (Slight seconds).....	£9.95
Judge Pickles' Decision Maker.....	£29.95, or maybe £9.95
Gypsy Lee's Fortune Teller.....	£tba
Pamella Bordes Spreadsheet.....	£19.95
Dan Quayle Intelligence Simulator.....	£29.95
Boeing 737 Flight sim.....	£19.95
Nigel Lawson Economics Manager.....	£19.95
.....no make that	£22.95
.....er no better make it	£24.95
.....um no	£25.95
(seasonally adjusted only £14.95 in real terms)	
Tom Keating Art Studio (not copy protected).....	£19.95
Princess Di's Erly Larning Packidge.....	£4.95
'The Guardian' Spell Checker.....	£9.95
'The Sun' Thesaurus (needs at least 1K RAM).....	£4.95
Moammar Gadaffi's Balance of Power.....	£14.95
Steve Davis Test Card Simulator.....	£29.95

HARDWARE

Cray 3XP.....	£4,500,000
.....(plus £5,000 p&p)	
Notched stick.....	£0.95
.....(twig upgrades available)	

COMPUTER MAGAZINES

Printer Stand User.....	£1.50
Which Mac Magazine? Magazine.....	£1.95
Abacus World (inc. free cover mounted beads).....	£1.50
Mouse Mat Monthly.....	£1.20

PROGRAMMING BOOKS

Guide to Recursive Stack Bound Parameter Passing of Unassigned Floating Point Variables in C or something.....	£9.95
How to write very long and tedious routines in 8086 assembler that nobody gives a toss about anyway.....	£8.95
Some boring nonsense about Pascal.....	£4.95
Modula. Do you actually read this stuff for pleasure?.....	£4.95
Forth. Look, there's more to life than this, you know.....	£5.95
Let's face it, you're a bit of a boring nonentity, aren't you?.....	£3.95
Why don't you get out and meet people?.....	£4.95
Join a local club, go to evering classes, anything.....	£5.95

OBS • COMPUTER JOBS • COM

EROTICA GAMES require a PROGRAMMER

The producers of classic games like *Pamella Bordes Reveals Her Assets, Five and a Quarter Inches, The Girls Who Like Hardware and Strip Jack Naked* need a talented programmer to join their active team.

The ideal candidate will be competent in Z80 and 68000 assembler and demonstrate a sound knowledge of graphics design and manipulation. He/ she will probably be an adolescent male who says 'Cor, she's got tremendous assets, narmean, assets, geddit, fnarr' a lot, and can demonstrate a sound interest in the pile of magazines they hide under their bed. For further details on Erotica call 0898 657 2382 (calls charged at 25p per min off peak, 38p peak)

Zap Systems require a Games Writer

Can you write intriguing and stylish adventure games with well-developed characters, blindingly clever puzzles, brilliant plots and watertight structure?

Then bog off, we don't want you. We want someone who can write **VIOLENT** shoot-'em-ups involving **LOTS** of **DEATH, MAIMING, GRATUITOUS** violence against **RACIAL** minorities, **BLOOD, GUTS, GORE** and **PLENTY** of words picked **OUT** in **BOLD**.

The right qualifications are vital: you mustn't have any. We don't want no poncey kids what have done a City & Guilds in BASIC and think they're the bees' knees or nuffink like that.

The geezer what gets the dosh will be a 16 year old with an interest in 16-bit machines, Rambo films, Kung Fu, Truant, Lager and Money. Give Arnie Meathead a bell now on 01 348 9119.

And we don't give a monkey's wotsit about equal opportunities or nuffink like that. Girlies are right out, OK?

Evesham

MICROS

WE ACCEPT EXPRESS VOUCHERS

All prices include VAT and Delivery

ATARI 520STFM SUPER PACK

Includes STFM with 1MEG drive, 21 games with business software (worth over £450) & joystick.

Only £339.00

- 520 STFM latest version with 1MEG drive fitted £269.00
- 1040 STFM latest model, including TV modulator £399.00
- 1040 STFM machine as above, with 'Microsoft Write' & 'VIP Professional' £419.00
- 1040 STFM machine as above, including 21 games, business software & joystick extras as supplied with above '520 STFM Super Pack' £419.00
- 1040 STFM as above with super pack extras, 'MS-Write' & 'VIP Pro.' £459.00

Buy a monochrome monitor with any 1040 from above for £110.00 extra

- Mega ST2 with mono monitor, 'MS-Write' and 'VIP Pro.' £849.00
- Mega ST4 with mono monitor, 'MS-Write' and 'VIP Pro.' £1099.00
- SLM804 laser printer, great value at £1099.00
- SM124/5 mono monitor £119.00
- Mega ST2 package - includes Mega ST2, mono monitor, external 1Mb 3.5" drive, SLM804 laser printer, 'Microsoft Write', 'VIP Professional', 'Fleet St. Publisher' software and 90 days on site maintenance £1795.00
- Atari DTP system - includes Mega ST4, mono monitor, SLM804 laser printer, 30Mb hard disk, 'Fleet Street Publisher' software and 90 days on site maintenance £2795.00
- 5.25" External drive 40/80 track 360/720K formatted capacity £159.95
- Pace Linnet Modem Pack inc.cable & software £179.00
- Pye 1185 15" FST teletext remote ctrl TV/Monitor c/w ST or Amiga cable .. £269.00
- Philips CM8833 colour monitor c/w ST or Amiga cable £229.00
- Philips CM8852 as above, higher resolution £299.00
- Cameron Handy Mouse, high quality replacement ST mouse £39.95

commodore hardware

SPECIAL OFFER AMIGA PACK

A new Amiga 500 package including the following: (extras worth over £270)

- ★ Amiga 500 computer
- ★ TV Modulator
- ★ Mouse & Mouse mat
- ★ Joystick
- ★ Las Vegas
- ★ Photon Paint
- ★ Karate Kid II
- ★ Goldrunner
- ★ XR 35
- ★ Grid Start
- ★ Demolition
- ★ Atax
- ★ plus 5 disks of public domain s/ware

all for only
£399.00

- Oceanic OC-118 64/128 disk drive for 64/128 with free GEOS software ... £129.95
- Oceanic OC-118 as above with Freeze Machine £149.95
- Freeze Machine complete backup cart'dge, with integral reset button £28.95
- LC-10 commodore 64/128 ready printer inc. 2 extra black ribbons free £199.00
- LC-10 7-colour version of above printer inc. 2 extra black ribbons £249.00

Amiga & ST 3.5" Drives

- ★ Very Quiet
- ★ Slimline Styling
- ★ Fully Compatible
- ★ Top quality 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 £79.95

Atari ST version only £82.95

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 PC1512/1640 users we supply hardcards tested and formatted, with our simple software installation procedure. The best packages available!

20 MEG...£219.00 32 MEG...£239.00

DISECTOR ST V4 for all Atari ST models only £24.95

Version 4 disk utilities for the ST, features include: protected software backup, featuring the new turbo nibbler, a faster and more powerful copier, which uses all available drives & memory and includes 56 parameter options for handling a greater range of software; drive B boot to allow many programs to startup from drive B; organiser accessory providing many major disk management commands; extra format giving over 15% extra user storage area per floppy disk; fast backup; ramdisk accessory; undelete file; PLUS many more!

3.5" disks

10...£11.95 in plastic case £13.95
25...£27.95 in 40 cap case £34.95
Fully guaranteed double sided media

5.25" disks

25...£13.95 in 50 cap box £22.95
in 100 cap box £24.95
Fully guaranteed double sided media

Amstrad PC1512/1640/2086

We offer a wide choice of Amstrad PCs with many upgrade options, including the very latest PC2086 range. For the hard disk option, check our 'Evesham Upgraded Models'. Only the best will do - so we normally upgrade by means of a Western Digital Filecard, which includes XTree and SpeedRead software; however on single drive 1512/1640 models we can offer internal installations at the same price (leaving more expansion room but no upgrade opportunity for a 2nd floppy drive). On-site service contracts are available on any PC1512/1640 model for only £44.00 inc.VAT. Prices in lighter type exclude VAT.

Free with 1512 models... Ability and 4 US Gold Games

	SD	DD	AMS H.D.	SD 20MEG	DD 20MEG	SD 32MEG	DD 32MEG
EVESHAM UPGRADED MODELS							
MONO 1512	384.35 442.00	477.39 549.00	N/A N/A	574.78 661.00	667.83 768.00	592.17 681.00	685.22 788.00
COLOUR 1512	494.78 569.00	555.65 639.00	N/A N/A	685.22 788.00	746.09 858.00	702.61 808.00	763.48 878.00
MONO 1640	474.78 546.00	555.85 639.00	738.26 849.00	665.22 765.00	746.09 858.00	682.61 785.00	763.48 878.00
CGA (COLOUR) 1640	581.74 669.00	651.30 749.00	825.22 949.00	772.17 888.00	841.74 968.00	789.57 908.00	859.13 988.00
EGA (ECD) 1640	677.39 779.00	738.26 849.00	938.26 1079.00	867.83 998.00	928.70 1068.00	895.22 1018.00	946.09 1088.00
2086 MONO	578.26 665.00	686.96 790.00	917.39 1055.00	768.70 884.00	877.39 1009.00	786.09 904.00	894.78 1029.00
2086 CD	717.39 825.00	825.22 949.00	1056.52 1215.00	907.83 1044.00	1015.85 1168.00	925.22 1064.00	1033.04 1188.00
2086 12" HRCD	808.70 930.00	920.00 1058.00	1147.83 1320.00	999.13 1149.00	1110.43 1277.00	1016.52 1169.00	1127.83 1297.00
2086 14" HRCD	900.87 1036.00	1012.17 1164.00	1241.74 1428.00	1091.30 1255.00	1202.61 1383.00	1108.70 1275.00	1220.00 1403.00

PC1512 special offer Buy an Amstrad DMP3160 10" carriage 9pin printer with any PC1512 model for only £120.00 extra!

optional extras

- 1512 memory upgrade to 640K £39.95
- Maths Co-processor 8087-2 £129.00
- NEC V30 (8086 replacement) £24.95
- Cipher CT1525 tape streamer £319.00
- Amstrad Modem Card V21/23 £99.00
- Amstrad MC2400 Modem Card £199.00
- 3.5 inch drive (720K) for any single drive models £79.95
- PC2000 series compatible 5.25" (360K) external drive £100.00
- Joystick & Controller Card self centering analog type £34.95

Amstrad PPCs

Low prices on all portable PCs - especially twin drive models prices in brackets are excluding VAT

- PPC512S (£373.04) £429.00
- PPC512D (£433.91) £499.00
- PPC640S (£477.39) £549.00
- PPC640D (£546.96) £629.00

New low price External 3.5" floppy drive (720K) to suit ANY Amstrad 1512/1640 inc. DD and HD models! Uses no expansion slots £99.95

Central Point Software

For all your PC disk management requirements

PC Tools Deluxe Version 5...Other utilities may claim to 'do it all' but only PC Tools Deluxe is the complete disk utility package, providing a fast hard disk backup, the best undelete available, 100% safe formatting of floppy and hard disks, unformat, reliable disk caching, compress facility, in fact everything required to manage & protect your data at a sensible price.....£49.95

Copy II PC Version 5.....The most effective floppy disk backup utility of it's type. We always ship the latest version. Can also transfer many programs to hard disk and then run them without reference to floppy. Supports both 5.25" and 3.5" disk format. Don't be without it.....£24.95

Copy II Deluxe Option Board.....The ultimate solution to backing up copy-protected software using the hardware option. All the original features of the Option Board, including the most powerful backup copier product on the market, and can even transform any PC equipped with a 3.5" drive into a dual purpose IBM/Macintosh drive. Allows your PC to read and write to MAC data disks easily through DOS. Comes as an easy-to-fit short card.....£84.95

PRINTERS

All prices include VAT, delivery and cable

We use and recommend Star printers since they do offer an unbeatable combination of features, print quality, reliability and value. Make the sensible decision - get it right with a Star printer at our special, all in, prices.

- Star LC10 best-selling 144/36cps printer, 4 NLQ fonts, inc.2 extra ribbons free .. £199.00
- Star LC10 7-colour version of above printer, inc.2 extra black ribbons £249.00
- Star LC24-10 feature-packed multifont 24 pin printer £339.00
- Star NB24-10 great value 24pin inc. cut sheet feeder + 2 extra ribbons £499.00
- Star NX-15 budget wide carriage printer £329.00
- Star NB24-15 wide carr.version of NB24-10 inc. cut sheet feeder £649.00
- NEC P2200 budget 24pin, great value 168/56 cps £319.00
- Amstrad DMP3160/3250Di good value 10" 9pin £169.00
- Panasonic KXP1081 reliable budget 10" printer 120/24 cps £169.00
- Panasonic KXP1180 super new 9pin with over 3400 typestyles, 11" carriage £199.00
- Panasonic KXP1124 great new sturdy 11" multifont 24pin printer £319.00
- Epson LX800 popular 10" 180/25 cps £199.00
- Epson LQ500 good 24pin printer 150/50 cps £319.00
- Citizen 120D good value 10" 120 cps £139.00
- Citizen HQP-45 wide carriage 24pin printer £399.00

How to order

All prices VAT/delivery inclusive
Express courier delivery £5.00 extra
Send cheque, P.O. or ACCESS/VISA details
Phone with ACCESS/VISA details
Govt., educ. & PLC official orders welcome
All goods subject to availability E.&O.E.
Open to callers 6 days, 9.30-5.30
Telex: 333294 Fax: 0386 765354

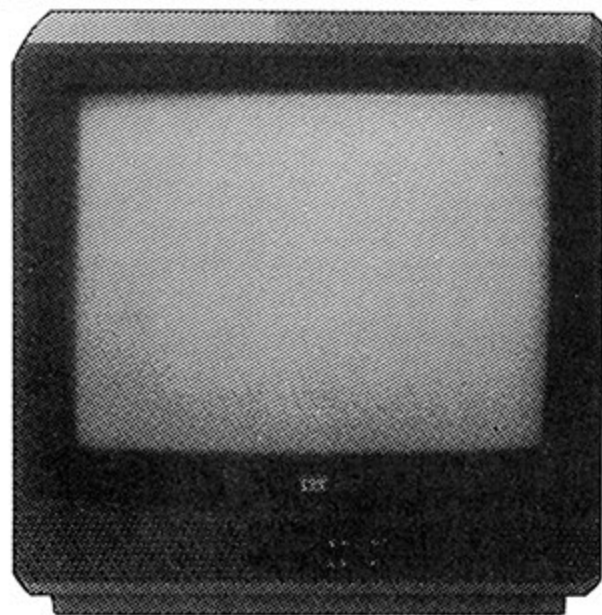
Evesham Micros Ltd

63 Bridge Street
Evesham
Worcs WR11 4SF
Tel: 0386 765500

Also at: 1762 Pershore Rd., Cotteridge, Birmingham, B30 3BH Tel: 021 458 4564

AN Evesham Micros *SPECIAL PURCHASE*

**ITT CP3228
TV/MONITOR**



COMBINES THE FEATURES OF A TV & MONITOR ; EXCELLENT DISPLAY QUALITY WHEN USED WITH AN ATARI ST OR CBM AMIGA AND A SCART CABLE

- 41cm (16 1/2") FST tube
- Multi feature infra-red remote control
- Full SCART monitor input socket
- 8 watts peak music power
- 40 station tuner presets
- Supplied with ST or Amiga SCART cable
- Full TWO YEAR guarantee
- Superb value for money
- Use EXPRESS voucher to save £4.00!



ONLY £229.00 including VAT and delivery

**Evesham
Micros**

**How to order from
Evesham Micros**

Phone us with your
ACCESS or VISA
card details on :
0386-765500

All prices include VAT and delivery. Express Courier delivery £5.00 extra.

Send cheque, Postal Order
or ACCESS/VISA card details

Govt, educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

Also at: 1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564

Evesham Micros Ltd
63 BRIDGE STREET
EVESHAM
WORCS WR11 4SF
☎ 0386-765500
fax 0386-765354
telex 333294

PC PORTABLE PRICE BLITZ

SHARP PC7000

80C88-2, 7.37mhz 2x5.25 F/disk Backlit Super
Twist LCD640X200 Pixels 320K Onboard (Exp)
PC7000 £349.00 + VAT

SHARP PC4501

80188 PRC/SS (7.16Mz) 1x3.5 FDD (45001)
2x3.5 FDD (4502) illuminated Super Twist LCD 1
x Serial, 1 x Parallel Port 1 x Ext 5.25 FDD Port
lead bat PSU.and AC Adpt
PC4501 £399.00 + VAT



20 MEGABYTE HARD CARDS FROM £175.00 +VAT

CHEAP HARD DISKS FOR APPLE MAC - CALL US FOR DETAILS



UPGRADES PC7000

Expansion Unit£400.00
Carry Case£70.00
128K£30.00
10 Meg Hard Disc.....£750.00

UPGRADES PC4501/2

Colormon Adaptor£130.00
1 Meg Eprom Card.....£29.00
Carry Case£50.00
128K Expansion£45.00
128K Kit.....£30.00
3.5 Internal F/Disk£80.00
(PC4501)

**ALL PRICES + VAT AND
CARRIAGE AT £7.00**

2-BIT COMPUTERS

**26 28 BOWSFIELD
LANE, STOCKTON,
CLEVELAND. TS18 3ER.**

TEL: 0642 604768

B/card Access CWO
Don't delay limited quantities
+ vat and carriage £7.00

SEVENTEEN BIT SOFTWARE

"That bit better than the rest!"

Following the incredible success of the 17 Bit PD starter pack, we are proud to present the best value-for-money PD Pack yet available for the Amiga and Atari ST...

QUICKSTART 3

This amazing PD pack is designed to give the new user or first time PD buyer the very best possible start. There's simply no better way of finding out about Public Domain Programs and Seventeen Bit Software!

AMIGA

Disc 1 - Our very own disc-magazine that's gained a huge following, it has programs, demos, music, art etc and of course plenty of news and articles.

Disc 2 - A disc containing a selection of the very best Utility programs that are available including CLI Wizard & Directory Master. Also included are 2 brilliant arcade games and a strategy patience game.

Disc 3 - Contains some amazing music and some demos that will entertain & amuse you, just shows what the Amiga is capable of when asked nicely!

ST

Disc 1 - An issue of our ST Discmag. It contains much of interest to the ardent ST follower including some amazing 512 colour graphics.

Disc 2 - Contains a great Database, a Pacman game and some great PD utilities and demo-programs.

Disc 3 - Contains some great games such as the classic Megaroids and Time Bandit. Also includes a version of Neochrome for all the budding ST Artists.

Plus Much More!

ALL THIS PLUS MEMBERSHIP TO 17 BIT FOR ONLY £5 !! (P&P INC)

This offer should NOT be missed, take your opportunity NOW, if you are only going to try PD once - make sure its from 17 Bit!

This offer is backed with a money-back guarantee if you are not entirely satisfied with the pack - we aim to please!

The discs included in these packs have been exclusively compiled by us for this offer.

SEVENTEEN BIT SOFTWARE

PO BOX 97

WAKEFIELD WF1 1XX

Tel: 0924 366982



ALL ORDERS DESPATCHED PROMPTLY BY FIRST CLASS MAIL. PLEASE STATE MACHINE WHEN ORDERING. ACCESS/VISA ORDERS WELCOME. 33 KIRK GATE, WAKEFIELD WF1 1HS

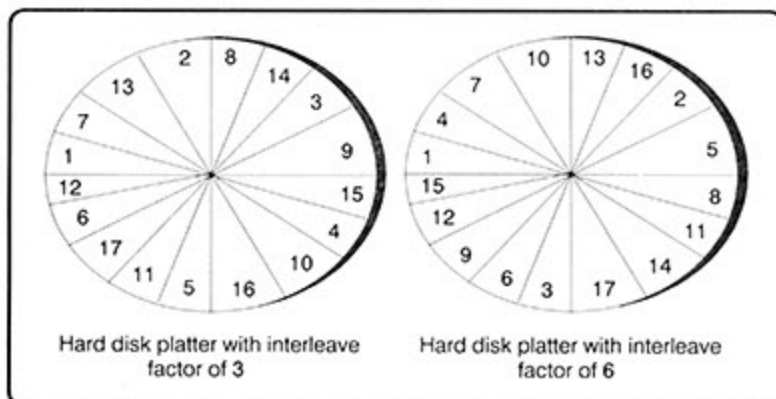
YOUR FORMAT

MACHINE-SPECIFIC COLUMNS

PC UPDATE

Hard Disk Interleave

Hands up all those whose hard disks have the correct interleave factor. Are you sure? Do you even know what I'm on about? The interleave factor of a hard disk is the number of non-sequential sectors between each two sequential ones. It's rather easier to explain this with a diagram.



In the first of these two disks, the interleave is 3, while in the second it's 6. If you count round from the sector marked 1 to the sector marked 2 and so on, you'll see that there are 3 and 6 intervening sectors respectively. Given that the rotational speed of any hard disk is 3,600 rpm, the data will obviously be read faster from the disk with an interleave of 3 than that with an interleave of 6.

And if the interleave factor is too low for each sector to be read in progression, the disk will have to make a complete revolution between each.

This can have a devastating effect on the apparent speed of the hard disk drive. For example, a correctly interleaved drive with an interleave factor of 3 can read an entire track (about 9K of data) in three revolutions of the disk, or 50ms. If it misses each sequential sector and has to go for a complete revolution to reach the next, it'll take 17 revolutions, or 283ms - nearly six times as long!

What you really need is a program to check the current interleave on your system and compare it with the ideal value. Just such a program is *Spinwrite*, from Gibson Research Corp in the US. This handy utility not only tells you what your ideal interleave should be, it also puts it right, without disturbing any data on your hard disk. It can take a while to do the job, though. Send to Shareware Marketing, with a cheque for £45.95, for the full system, or check out the May issue of the *PC Plus SuperDisk*, which includes the testing parts of the program. Shareware Marketing is on 0297 24088.

MicroCache

While I'm writing about speed enhancements, I've had the latest version of *MicroCache* (4.41) through from Microcosm Research. This program, if you haven't come across it before, is a software cache which acts as an intermediary between main memory and your floppy or hard disk. Where it differs from a conventional RAM disk is that the cache can detect which files your current application uses most regularly, and keep those in memory. This 'intelligence' generally means you can gain a significant speed

improvement.

Once you've installed *MicroCache* by telling it which drives you want to cache and how much memory you can spare, the program runs and you can forget it. Obviously, disk intensive applications display the biggest speed improvements, but even the odd directory call will be much speeded by being buffered in RAM.

As well as the cache program itself, the package includes *SpeedWrite*, which will write all disk saves from the cache to disk in the background. This helps to protect the system from power drop-outs, which could potentially lose any files in the cache which haven't been saved back to disk. As the final member of the trio, *Jet Print* acts as a fast print spooler, returning control to you almost

immediately when you set a document printing. All the *Micro-Cache* programs can make use of EMS or extended memory as well as

the hard core of 640K. More details from Microcosm on 01-226 9092.

386 Tower

Having finally come to a decision and ordered the Aries 386 Tower from Watford Electronics, I had a wait of two weeks, which turned out

Extra MS-DOS

One of the goodies which I've never had before, and now have courtesy of Watford Electronics and their tower machine, is a pukka copy of the MS-DOS 3.3 manual. It's a hefty tome, but full of lots of interesting snippets which it's all too easy to overlook in your haste to start using a PC. It explains how to use EDLIN and DEBUG, for instance, should you really need to use them.

More to the point, it details commands like XCOPY. If you want to copy the entire contents of a disk, including all subdirectories, from A: to B:, you can use the command XCOPY A: B:/S/E.*

This is particularly useful if you have two non-identical drives on your machine, and can't therefore use the DISKCOPY command.

to be their pre-sales test period. It appears I really have one of the first machines off the production line, and first impressions are very good. The 2Mb of RAM is 32-bit and true zero wait state (meaning that the processor is never left waiting for memory to deliver data). It's also 60ns throughout, which is pretty fast.

Both 1.2Mb 5.25" and 1.44Mb 3.5" drives are included and the mono monitor is supplied with a dual standard EGA card, which can run colour if I choose to use an EGA monitor. I do, and have relegated the flat screen paper-white job to my old XT.

The only apparent problem is that the supplied hard disk is giving an average access time of 56ms and a data transfer rate of 160 Kbits/sec. The disk is supposed to be 28ms access time, but Watford has promised me a replacement and assured me that 'real people' will get one as standard. I'm sure it's right.

Tuning the hard disk is one of the reasons behind my current interest in interleave factors and the like. I heard recently that Atari's PC5 AT has a hard disk with a data transfer rate of over 700 Kbits/sec. That's really flying!

Simon Williams

AMIGA BLIT

A Complete DTP solution?

Taking me completely by surprise, a rather interesting software bundle dropped with a rather loud 'thud' onto my desk this week. The package, called *Publishers Choice*, is the latest attempt to capture sales within the rather confused Amiga DTP market.

Publishers Choice comprises three previously released software titles in one rather hefty package. The heart of the package is the page layout program, *PageSetter*, from the American company Gold Disk Inc. *PageSetter* was the predecessor of the current Amiga number one DTP program, *Professional Page*. While the program is no competition for a heavy weight package such as *ProPage*, *PageSetter* provides an ideal introduction to DTP for beginners.

PageSetter V1.2 Document: Pagesetter.demo



• *PageSetter* is an ideal introduction to DTP for the beginner

The second program in the suite, is the Disk Company's highly regarded (not by me however, give me *Protext* any day!) word processor, *Kind Words 2*. With *KW2*, you can write all the copy for your page layouts and then import them straight into *PageSetter* with no fuss at all. *Kind Words 2* includes a thesaurus, spell checker and the ability to import graphics.

The final program within *Publishers Choice* is *LaserScript*, the companion program to *PageSetter* that allows you to output your pages to a PostScript-compatible laser printer. Also included within the package is a comprehensive collection of fonts and IFF clip art.

Mac Emulator Latest

At the recent AmiExpo in New York, ReadySoft demoed its eagerly awaited Amiga Macintosh Emulator. The Emulator, now officially called *A-MAX*, looks set to be very hot property when it is eventually released in the United States at the end of March, priced between \$150 and \$200.

A-MAX, like similar units on the Atari, comprises both hardware and software. However, unlike the Atari Emulators, the *A-MAX* product can accept both Mac 64K and 128K ROMS. The actual hardware plugs into the disk drive port of any Amiga and provides a pass-through to allow you to plug your external drives in. The unit also provides a socket to allow you to plug a Macintosh drive into the Amiga, although this is not absolutely necessary for effective use of the emulator.

A-MAX comes complete with transfer software to allow you to port Macintosh software across onto the special *A-MAX* format floppies. Although *A-MAX* does not allow Amiga drives complete compatibility with Macintosh floppies, due to the rather strange way Mac drives work, the Amiga drives can read about a third of a Mac Disk. This is probably not of great use and access to a 'real' Macintosh is recommended.

Where software compatibility is concerned, *A-MAX* appears to come out very well. Indeed, some programs that don't work on the Mac II work fine under *A-MAX*. Commercial Mac packages that most certainly do work under *A-MAX* include *MicroSoft Word*, *Excel*, *MacWrite* and *MacPaint*, *PageMaker*, *FullPaint* and various others. ReadySoft can be contacted on (416) 731 4175.

Game Snippets...

Game Snippets? This really is starting to become a bad habit you know! To think, people tell me that I am by definition, a serious computer user! Why shouldn't computers be used for games? After all, a computer is merely a tool that can be used to carry out many diverse tasks.

So why not exploit its obvious talent as an entertainment medium? Anyway, enough of the soap box rhetoric, here's a quick run down of what you can expect your Amiga to be playing within the next couple of months:

• **Afterburner:** The Amiga version is finally with us but after playing it extensively, one finds oneself asking if it was all really worth it? The game is most certainly more playable than the ST version (which let's face it, was a joke!), but the Amiga version still fails miserably to capture the adrenalin-pumping atmosphere of the arcade original. Well Activision, better luck with Amiga R-Type!

Message Port

Have you any views on any issues raised with AmigaBLIT or even just the Amiga scene in general? If so, why not put your views on paper and send them to me. Similarly, if you have any great tips for any software package on the Amiga, be it a game or a more serious application, then I'd also love to hear from you. Send your mail to: AmigaBLIT, New Computer Express, 4 Queen Street, Bath BA1 1EJ.

• **Fright Night:** Where is it then, *MicroDeal*? After months of waiting, *Fright Night* still isn't with us, but lets give Steve Bak's latest creation a plug anyway. You play the part of Charlie Brewster's ominous neighbour Kylie Minogue, er... Jerry Dandridge, aka Vampire at large. You must move menacingly around your mansion home during the hours of darkness, sucking the blood of anyone who crosses your path. However, all is not in your favour as you have very little time in which to drink as much as possible before the cloak of darkness lifts. Sounds like a Friday night out on the town to me!

• **Road Blasters:** US Gold's Amiga conversion of the oh so impressive arcade machine is almost finished and should be out on the streets pretty soon. The game is being programmed by those rather prolific chaps at Probe Software and first impressions are good (but you know what they say about first impressions!).

Jason Holborn

COMPUTER CONNECTIONS

TOP QUALITY Centronics Parallel Printer Cable (RS232 end screw fixing) - 2 metres £5.99!!

Suitable for All Atari STs and Amiga A500/A2000s,



SOCKETS & PLUGS - SOCKETS & PLUGS	
5 PIN DIN PLUG 75p	7 PIN DIN PLUG 85p
13 PIN DIN PLUG (ST) £2.99	
14 pin plug	£2.99
Scart Plug (Euro connector)	£2.99
36 Way Centronics Plug	£2.99
25 Way RS232 Plug	£2.99
9 Way D Plug	£1.50
34 way IDC Socket	£2.50
Phono Plug Red or Black	£0.75
Scart Socket (Euro Conn)	£4.75
36 Way Centronics Socket	£3.50
25 Way RS232 Socket	£3.50
9 Way D Socket	£1.50
34 Way IDC Plug	£5.50

CABLES! CABLES! CABLES!
Standard Centronics Printer Cables for IBM, PC, Atari ST, CBM Amiga 500/2000 etc. 25 way RS232 plug to 36 way centronics plug - High quality screened cable with Thumbscrews.

2.0m	£6.99	3.0m	£9.99	5m	£12.99
Ultra high quality centronics parallel printer cable with very heavy shielding for situations involving printers sited beyond the normal 5 metre limit of the parallel interface. They allow for transmission up to 15 metres!					
7.5 metres	£44.99	10 metres	£49.99	15 metres	£59.99

ALL THE FOLLOWING CABLES ARE 2 METRES LONG UNLESS OTHERWISE STATED

All kits come with diagrams.	
ST 13 pin din mon. plug to Philips 8533 RGB monitor scart 2 metres	£9.50
ST 13 pin din mon. plug to Sony KX14 RGB monitor scart 2 metres	£10.95

Large range of cables available for PC & compatibles, all Amstrads, Spectrum, Apricot, Apple/Mac, Commodore Amiga, 64 & 128, Atari ST, XL/XE, MSX and more. Just write for full product list.

ST 13 pin din mon. plug to TV/MONITOR scart 2 metres	£9.50
ST 13 pin din mon. plug + 2m of cable	£4.50
ST 13 pin plug with 2m cable all pins connected	£6.50
ST 13 pin mon. plug to two Phono plugs (comp video needs internal modulator)	£5.50
ST Switching unit between Mono and Colour monitors	£19.50
ST 14 pin din plug to 34 way IDC socket (adapter & cable for 5.25" drives with Shugart interface 1.5m)	£19.99
ST 14 pin din plug - 14 pin din socket, disk drive extn lead 2m	£14.95
ST14 pin din + 2 metres of cable	£5.00
Scart Extension lead 2m - all pins connected	£8.99
In Kit form	£6.99
34w IDC plug to 34w IDC socket 1.5m	£14.99
TWIN JOYSTICK EXTENSION LEAD - 10 INCHES	
COMMANDO 4 JOYSTICK - 4 Fire buttons + autofire	£8.95
Locking Disk Boxes	
3.5" - CAP 40	1 £6.50 2 £11.95 3 £17.50 4 £21.95
3.5" - CAP 80	1 £7.95 2 £14.95 3 £20.95 4 £25.95
AMIGA 23w D socket & twin phono to Scart plug (analogue RGB)	£10.99
AMIGA 23w D Socket to Mon with EIIA socket (TTL RGB T)	£11.99
AMIGA 23w D Socket to 9w D plug (IBM standard mon TTL TGB T)	£9.99
AMIGA 23w D Socket to 9w D plug (NEC multisync Analogue RGB)	£9.99
AMIGA 23w D Socket to 9w D socket (Philips 8873 TTL RGB T)	£9.99

Please make cheques and Postal Orders payable to:

Telephone **COMPUTER CONNECTIONS** Telephone

03548 590 Credit Card orders accepted on Access/Mastercard/Eurocard. **03548 590**

All orders under £5 please add 50p. Over £5 P&P free.

Ashlaw House, Euximoor Drive, Christchurch, Wisbech, CAMBS. PE14 9LS

HARDWARE SUPERDEALS

AMIGA 500 WITH FREE:-

GAMES PLUS PACK

WITH £300 OF FREE GOODIES!

ONLY £399 (inc. VAT)!

AMIGA 500 WITH FREE:-

ECONOMY PLUS PACK

ONLY £369 (inc. VAT)!

AMIGA 500 GAMES PLUS PACK (excl. Modulator) + 1084S MONITOR ONLY £625

ATARI 520STFM WITH FREE:- SUPERPACK

ONLY £349 (inc. VAT)!

ATARI 520STFM EXPLORER PACK

ONLY £279 (inc. VAT)!

ATARI 1040STFM BUSI-PACK

ONLY £449 (inc. VAT)!

ATARI 1040STFM SUPERPACK ALSO AVAILABLE FOR £449 (inc. VAT)!

OTHER ITEMS

MOUSE MAT	£3
QUICKSHOT II TURBO JOYSTICK	£11
DRAGONS LAIR GAME	£20
A501 AMIGA .5 MEG MEMORY EXPANSION	£130
PHILIPS CM8833 COLOUR MONITOR (With Mono Option) + LEAD	£229
STAR LC-10 COLOUR PRINTER	£235

All prices include 15% VAT. Add £5 per item on Goods over £100 in value for Carriage/Insurance. Next-Day Courier Only £8 (Credit Card Orders).



ACCESS/VISA CREDIT CARD ORDERS/ENQUIRIES - TELEPHONE - 0706 43519



VISIT SHOWROOM FOR DEMO/PURCHASE - UNIT 9, 160 DRAKE STREET, ROCHDALE, LANCs.



OFFICE HOURS ARE 9.30 AM TO 5.30 PM (MON-FRI) & 10 AM TO 5 PM SATURDAYS SEND ORDERS TO:-

16 BIT SOFTWARE, 24 BANKFIELD LANE, ROCHDALE, OL11 5RJ



Games of two halves

What is it about the Spectrum that attracts so many games based around soccer? There's no way you could hope to count all the titles which have attempted to simulate the sport without taking your shoes and socks off at the very least. And just when you thought you were as sick of them as any self-respecting parrot could possibly be, another whole division comes along, each one promising to send you over the moon.

They can usually be divided into two distinct types: playing and management. *Emlyn Hughes' International Soccer*, thankfully not much to do with the great man and his sweaters, is a fairly enjoyable stab at both. The playing sections is good, but unfortunately the strategy half is unrealistic, and you can't help thinking the programmers would have gone for an out and out match simulator.

Professional Soccer, from CRL, is clearly shooting at the management goal, and scores - just about. It's the usual idea of starting at the bottom and working your way to the top by wheeling, dealing and lots of luck. You can experiment with different formations and watch the results, safe in the knowledge you never have to embarrass yourself by actually wagging the joystick and playing.

Both games are perfectly worthy attempts at Spectral footie, but look like fourth-division material when compared to *Match Day II* or *Football Director*.

Cult, a relatively small budget label, has got yet more football games ready to join the fray. There's *Soccer Q*, a quiz game based around

Budget bonanza

Forget international arms treaties, human rights agreements and other trivial matters. The best thing to come out of Perestroika and Glasnost was *Tetris*. This Russian game was so incredibly addictive I reckon it can be blamed for at least a 10 per cent drop in national productivity.

In workplaces the nation over, every time the boss is nowhere to be seen it's a good bet that the employees put work to one side and load *Tetris* up on the office PC. That's what happens in Future Publishing, anyway.

Post haste

Got anything interesting to say on the state of the Spectrum? If you can't stretch to that, something boring will do. Other things I like receiving are hints, tips and pokes, software recommendations, fanzines, grievances, plugs for companies or user groups and comments about the column. Send to Robin Alway, SPEX, New Computer Express, 4 Queen Street, Bath BA1 1EJ. Look forward to hearing from you.

Tetris is a fast-moving, unspectacular looking puzzle game which is set to make a budget reappearance on the Spectrum. And the good thing is, that out of all the home computer versions I have been forced to play, the Speccy one is the best. There are none of the added frills or fancy bits that were programmed into some conversions. On our machine we're left with a pure form of the game which has a dangerously powerful 'just one more go' factor.

Definitely not the thing to load unless you can afford to take at least two or three hours off work.

Whilst I'm in a nostalgic mood, a few other games I can't let you miss and keep a clear conscience are now available at a budget price.

Firstly, two decidedly wacky arcade adventures called *Skool Daze* and *Bak to Skool*. The hero of both is a humble schoolboy who fights against evil teachers with an array of weapons ranging from stinkbombs to mice. Brilliant stuff.

Also *Leaderboard*, an excellent conversion of a boring sport guaranteed to give golf fans palpitations. Buy all the above and you'll have four games good enough to last you the rest of the year, and for under a tenner as well. I really must stop saving you untold fortunes.

Snow joke

That one-time national hero now relegated to occasional appearances on *Blankety Blank*, Eddie Edwards, is due to star in a game out on the Speccy soon.

Eddie Edwards Super Ski is a simulator with four events - slalom, giant slalom, downhill and jump (that's the one Eddie's good at). The graphics are big and fast-moving, and the whole thing looks surprisingly impressive. Release date is early April.

US Gold is preparing to release *Chicago 30s*. Apparently this is a horizontally-viewed shoot-'em-up set well and truly in gangsterland. The hero of the piece is Detective Elliot. He has to shoot his way through five levels to an illegal alcohol warehouse (where he'll no doubt have a swift half in celebration).



that funny kick-the-old-cow-skin-around-a-field game called football, *Soccer Star*, a graphical management game, and *Cup Football*, where you have to lead your team to - yes, you've guessed it - cup final.

The great thing about playing football on computers is the way it allows you to achieve results which would be impossible in the real thing. I mean, heck, just the other day I guided England to an amazing nil-nil draw with the People's Republic of Nuristan!

Dirty devils

The indescribable gunk which collects in your +3's disk drive can be a worrying thing. But fear not, help is at hand.

Capri Marketing, on 06285 31244, has a 3" disk head cleaner at the quite reasonable price of £6.99. This should eliminate the problem quickly, cleanly and with the minimum of fuss, allowing you to sleep soundly once again.

Robin Alway

COMPUTER REPAIRS
Fixed Super Low Prices!
Inclusive of parts, labour and VAT
1 WEEK TURNROUND

*** AMSTRAD / SINCLAIR AUTHORISED ***

SPECTRUM 48K	£14 + Free Game	C64	£22 + Free Game
SPECTRUM 128	£18	VIC 20, C+4	£22
SPECTRUM + 2	£27	1541 DISK DRIVE	£36
C128	£29	C2N TDECK	£19
C16	£18		

Please enclose payment with item - 3 month warranty on repair
Please enclose advert with repair

W.T.S. ELECTRONICS LTD
(NCE 300389)
Studio Master House, Chaulend Lane, Luton, Beds. LU4 8EZ
Tel: 0582 491949
(4 lines) Standard terms of business apply

We Accept EXPRESS VOUCHERS

PC ENGINE SUPPLIES
PC Engines £195.00 (Works On Any TV)
SOFTWARE ALSO AVAILABLE

R-Type I	£27.00	Tennis	£30.00
Baseball	£27.00	Legendary Axe	£30.00
Victory Run	£27.00	Dragon Spirit (NEW!)	£34.00
R-Type II	£30.00	Space Harrier (NEW!)	£35.00
Galaga 88	£30.00	Vigilante	£35.00
Vigilante (NEW!!)	£40.00	Dungeon Explorer	Phone
Motoroad (NEW!!)	£40.00	Watura	£34.00
Chan and Chan	£27.00	Fantasy Zone	£30.00
5 Player Adaptor	£27.00	Son and Son 2	£34.00
Alien Crush	£30.00	Auto Fire Joypad	£22.00

WE DON'T TAKE FULL PAGE ADS - WE PASS THE SAVINGS ON TO OUR CUSTOMERS!

Please make Cheques and P.O.s payable to:-
PC ENGINE SUPPLIES
223b WATERLOO ROAD, COBRIDGE,
STOKE-ON-TRENT, STAFFS, ST6 2HS
ALL PRICES INCLUDE POSTAGE & PACKING
TEL: 0782 213993

We Accept EXPRESS VOUCHERS

SECTOR SOFTWARE
Established 1985
0772 454328

Commodore Amiga A500 Computer with Modulator, Mouse, Workbench, BASIC disk, Extras disk and 10 FREE games
£389.00

Please note that the free Modulator offer will be dropped by Commodore from 1st April. Order early to avoid disappointment.

Workbench 1.3 Upgrade for Amiga owners	£15.00
Brother M1109 Printer	£155.00
Star LC10 Colour Printer	£275.00
Star LC10 Mono Printer	£240.00
Star LC2410 Printer (24 pin quality dot matrix)	£374.00

Bulk 3.5" Disks at the LOW PRICE of £1.00 each

Philips CM8833 Stereo Monitor	£239.00
Amiga Write Cartridge	£15.00
Star Laserprinter 8	£2195.00
Brother HR40 Daisywheel (136 col)	£1095.00
Star NB24-10P (216 cps, 24 pin, 80 col)	£757.00
Brother HR20 (20 cps, Daisywheel, 80 col)	£499.00
Hi-Soft Basic compiler for the Amiga	£79.00
Amiga BBC Emulator	£45.00
Deluxe Paint 3	£75.00

Sector Software are suppliers of Quality software for the Sinclair QL and currently have 14 titles in our range. Phone or write for our full catalogue of QL items.

SECTOR SOFTWARE

39 WRAY CRESCENT
ULNES WALTON
LEYLAND
LANCASHIRE
PR5 3NA
TEL: 0772 454328 FAX: 0772 454680

We Accept EXPRESS VOUCHERS

Access

We Accept EXPRESS VOUCHERS

VISA

SECTOR 64 SECTOR

Head cleaner plus

Interceptor is re-releasing the Azimuth tape head cleaner package with games like *Joe Blade*. This was released a long time ago, and did extremely well.

The best 8-bit machine in the world

It is perfectly clear now that the Amiga and ST have followed in the footsteps of the C64 and those of the crummy old Speccy. There is no doubt about it - the C64 lives up to its original catchphrase, "The best 8-bit machine in the world". Not only is the C64 doing things the ST would find impossible to do in real time, it's also cloning some Amiga A-Fx.

We've mentioned quite a lot of the things the 64 can do in this column before, but as time goes on, ever more new things turn up to write about. It's not just eight sprites any more, it's as many sprites as you can plex per vertical blank. The screen now has a Y co-ordinate followed by an X co-ordinate, and all the borders can be totally filled up with as many sprites as will fit. You can wobble the screen past eight pixels, too. Aren't you glad you bought a C64? Or if you haven't, what a plug we just gave Commodore!

Apart from all these wonderful tricks, the C64 can also play perfect sampled digi music, which brings us onto one of the recent Ash + Dave demos. Called *Digital Acid*, this demo plays a cool remix of *Humanoid*. It's quite funny, with lots of little smiling faces popping up all over the screen. Certainly a demo to show off with.

New releases

Rock Star • Code Masters

Lots of guest appearances from well-known (change the names a bit) pop stars. Well, it's only to be expected. I don't think anyone would like to buy the licence for Michael Jackson.

Sampling samplers

When you get home after buying your weekly game, you play it and freak out because it's got speech and sampled music. But you too can have a go, because there are plenty of samplers on the market.

Trilogic has a few, which are pretty cheap and ideal if you're just playing around. Using the joystick port, however, can make the results a little unclear to the ears.

One of the best samplers around is from Commodore. The hardware plugs into the cartridge port, and includes a volume switch to adjust the sample perfectly.

Join the fast reset

For those of you who get tired of waiting while your C64 resets (you must be impatient!), here's a short listing to speed it up five times.

```
10 FORL=0TO8:READA:POKE32768+L,A:NEXTL:
11 PRINT"YOUR COMPUTER NOW HAS A FAST RESET"
20 DATA 248,252,248,252,195,194,205
30 DATA 56,48
```

READY

Reset Jump

This is caused when the computer finds the codes CBM80 stored at location \$8004 onwards. Once found, the computer then jumps indirectly to the first word every time the computer is reset, and also jumps indirectly to the second word every time the restore key is pressed.

```
$8000 F8 FC F8 FC C3 C2 CD 38 30
      lo hi lo hi C B M 8 0
```

The location in the first and second words is \$FCF8. To stop the reset just fill those 9 bytes with zeros.

Of course, sometimes it's not just the hardware you have but the software that goes with it. A 4-bit sample will be clear-ish and take up a small percentage of memory, where an 8-bit sample will be very clear and eat all the memory up. For best results all round, we would suggest a 4-bit player, as long as it's written OK. But how do you tell what you're buying? The awful truth mostly appears once you've spent all your hard-earned cash and got the thing home. Whoever you're buying from, question them first. Hopefully, now that you've read this you'll have a better idea what to ask.

Rumours

Whispers are reaching us that a new games bundle will be put together by Commodore in the near future. The current offer is getting a bit long in the tooth, even though it's been very popular. Let's hope even more computer buyers will be attracted to our machine with a great new line-up of games. Pencil in the Commodore Show in late June as a real possibility for any announcements about the new bundle.

The taxman cometh

No more news as yet on Commodore's massive tax bill earlier this year. If you haven't heard about it yet, it was for \$74.1 million!

Apparently, this was for 'tax discrepancies', so make sure you read the instructions next time you fill in your tax return form!

Ian + Mic

A SMALL SELECTION FROM OUR WAREHOUSE

HARDWARE & PERIPHERALS (OFFERS END 30TH APR)	RRP	WAVE
Amstrad PCW8256 Computer/Word Proc + monitor & printer	401.35	361.22 ANC
Amstrad PCW8512 Computer/Word Proc + monitor & printer	516.35	449.19 ANC
Amstrad PCW9512 Computer/Word Proc + monitor & printer	573.85	451.81 ANC
Amstrad PC1512 BP inc: PC1512 Double Drive Mono + DMP3160 Printer + Supercalc 3+ Wordstar 1512	829.15	637.22 ANC
Amstrad PC1512 TP inc: PC1512 Double Drive mono + DMP3168 Printer + Migent Ability + 4 games	882.78	685.84 ANC
Amstrad PC1512 BP inc: PC1512 double drive colour + DMP3168 printer + Supercalc 3+ Wordstar 1512	994.15	724.99 ANC
Amstrad PC1512 TP inc: PC1512 double drive colour + DMP3168 Printer + Migent Ability + 4 games	917.78	693.61 ANC
Amstrad PPC640 Double Drive + Mono Monitor	861.35	634.48 ANC
Amstrad PC2086 Single Drive 12" Mono	688.85	614.38 ANC
Amstrad PC2086 Double Drive 12" Mono	861.35	731.40 ANC
Amstrad PC2086 30 Meg Hard Disc 12" Mono	1148.85	975.20 ANC
Atari 520STFM Super Pack Inc. J/S & 22 software titles	399.99	326.13 A
Commodore Amiga 500 inc. Free Modulator & paint software	499.99	349.99 A
Star LC10 Parallel F & T NLQ printer	297.85	198.62 A
Miniscribe 32MB Hard Card Formatted (state which machine)	558.36	229.77 B
Amstrad MC2400 PC Card Modem inc. Mirror II software	228.85	194.52 B

*** SPECIAL COMMODORE PRICES (INCLUDING VOUCHER DISCOUNT) ***
PHONE AND ASK FOR OUR TRADE EDUCATION DEPARTMENT

** TO OBTAIN YOUR AUTHORIZATION NUMBER BEFORE PLACING YOUR ORDER **

Commodore PC1 Single Drive Mono	369.99	289.31 ANC
Commodore PC1 Single Drive Col	494.50	391.00 ANC
Commodore PC10 III Double Drive Mono	883.85	595.23 ANC
Commodore PC10 III Double Drive Colour	976.35	741.92 ANC
Commodore PC10 III Double Drive ECD	1148.85	899.31 ANC

BLANK DISCS & SOFTWARE

Amsoft/Maxel 3" discs DS/ALL 3" drives	Box 10	21.00 E
Bulk 3" discs DS/All 3" drives hard cased	PKT10	17.94 D
JVC 3.5" DS/DD 135TPI Bulk discs	PKT25	20.63 D
Verbatim 5.25" DS/DD 40/80T Bulk Discs	PKT25	6.96 D

LARGE RANGE OF BOOKS & SOFTWARE BUSINESS/GAMES/UTILITIES ETC.
ALL AT GOOD DISCOUNTS. FAR TOO MANY ITEMS TO LIST HERE.
SEND THREE 19p STAMPS FOR LISTS. STATING FOR WHICH PRODUCTS.

English Mainland post & ins: (A) £5.75, (B) £4.68, (C) £3.45, (D) £2.30, (E) £1.15, (F) 58p (ANC) 3 Day £18.35 next day £13.80, COD + £2.30, Max UK post chg. £6.98 per 20kg/£500.
ALL PRICES INCLUDE VAT. All sales subject to our Trade Terms of Trading.

W.A.V.E. (Trade Dept. NCE3003)
Walney Audio Visual & Electrical Distribution
1 Buccleuch Street, Barrow-in-Furness, Cumbria LA14 1SR
Tel: 0229-870000 (6 lines) Hours: Mon-Fri 10.00-5.00

S COMPUTER SYSTEMS

WE ACCEPT EXPRESS VOUCHERS

All our disks are "CIS" Branded Disks with Lifetime Guarantee.

All our disks come with a FREE Clear Deluxe Library Case.

	10	20	50	100+
5.25" DS/DD 48tpi	7.99	7.75	7.29	7.05
DS/DD 96tpi	9.59	9.25	8.90	8.54
DS/HD 96tpi	14.49	14.15	13.79	12.50
3.5" DS/DD 135tpi	14.15	13.69	13.34	12.98

INTRODUCTORY OFFER.
For every 5 Boxes of same disks purchased in a single order, we will give one Box FREE

All our prices include VAT and Carriage.
(orders less than £15.00 Add £1.00 P&P)

We can also supply Disk Boxes, Joysticks, Mouse Mats, Dust Covers and other accessories at competitive prices.
Phone or write for a Price List.

All Cheques/P.O. Payable to:
S&H Computer Systems
11 Hempstead Lane, Potten End
Berkhamsted, Herts, HP4 2QJ

FOR GENERAL ENQUIRIES AND FOR LARGER DISCOUNTS PHONE:

0737 833136 24 Hrs

Prices may be subject to change without notice.

E. & O.E.

THE Stun COMPUTER ENTERTAINMENT SOFTWARE

EXCLUSIVE ALIENS STOLE MY VOLVO! see page 6

ROCK STAR ATE MY HAMSTER COLIN JONES

BUBBLES - I'M FOREVER BLOWING! Monkey Bubbles' nights of baked bean binging! We exclusively reveal today the REAL REASON why mega moneybags rock-star WACKY JACKO seals himself in an OXYGEN TENT! Full story on page 5





The Dirty Mac Brigade

This bloke goes into a computer shop and says, 'I'd like a word processor please, give me an Apple Mac', and the chap says, 'Ah, you're a comedian, aren't you?' and the bloke says, 'Have you seen me on telly?', and the salesman says, 'No, but anyone who wants a Mac just for word processing must be a joker.'

Softly softly ASCII question

Pushed for space on a disk with stuff you only want to keep for archives? Why not save your LocoScript files as ASCII ('Make ASCII file' from f1 in Loco 2 or f7 in Loco 1 in the disk manager, selecting 'simple text' file, and erase the original). You'll save 15-20% of your disk space.

Got a tip to pass on? Or just a PCW point to make? Write to me at: PCW Patch, 4 Queen St, Bath BA1 1EJ.

Ben Elton, Douglas Adams and Stephen Fry all use Macs. Why? Word processing on its pokey screen is like following a tennis match through a telescope - unless you restrict yourself to sentences of less than five words and words of no more than four letters (which might explain something in Mr Elton's case).

I can't help feeling these writers have been conned into getting Macs by the very image-consciousness they themselves like

to despise because they're seen as 'the' machine to have. What a waste; the PCW plus Protext is the ultimate writer's machine, and several grand cheaper than a Mac.

You read it first here

● A hardware add-on is currently under development which would enable you to read, and start up from, a B disc in an A drive

● Technology is being developed to enable the B drive on an 8512 to be replaced with a hard disk of the same size as a normal B drive but capable of storing 20Mb (equivalent to 28 B drive disks)

● Laser printer drivers are under consideration from several producers of word processing and desktop publishing software
Stay tuned for further details...

Incorruptible businessman

While admiring the efforts of sponsored walkers and sponsored swimmers and sponsored sitters naked in tubs of porridge, you can't help feeling that they are raising money by doing something fundamentally pointless. So it's nice to see something useful being done

to make money for charity. Dave Smith, who makes money for cancer research by recovering data from corrupted disks, has now set up a small company, Dave's Disk Doctor Service. For a few pounds you can have some or probably all of your data recovered after those dreaded 'Address mark missing' and 'Disc error' messages. Info on 089 283 5974. All profits to BACUP, the Cancer counselling charity.

Basil Pigg



Quanta workshop

The Northampton Quanta workshop has just taken place, with about 150 people attending on the Saturday. Apart from the hardware, there were talks on various topics delivered by such luminaries as Tony Tebby (designer of the QL and now runs QJump), Freddy Vaccha (Digital Precision), Simon Goodwin (Supercharge and Turbo compilers) and John Silk (PDQL).

QL hard disk

Several hard disks for the QL were in evidence at the workshop: Dave Richards with his home-brew transputer-based system, Rebel Electronics Ltd with a couple of nice-looking interface cards (it had only just received the controller chips, so it couldn't demonstrate its system), and the Miracle Systems unit, the first few of which are about to be shipped.

The Solution

Digital Precision's DOS emulator, *The Solution*, has now arrived. Several people at the workshop were using it, and it appears to do everything claimed for it, but is rather slow. The keyboard response is especially irritating: you type several characters, and it seems a

long time before they appear on the screen. Actually, emulating a completely different architecture such as the 80x86 on the QL's MC68008 processor is quite difficult and the programmer who performed this feat is to be congratulated for achieving this level of performance.

The Solution allows QL users to use the vast amount of excellent public domain software available for the PC for far less than the price of even the cheapest PC clone, and is good value at £79.95. For another £50 you can get

Super User Bureau QL Club

The fifth magazine for the Super User Bureau QL Club will be published this month. The 17 month old club - a member of the BACC - can be contacted on 0388 450610. A previous issue of Express carried an incorrect number. Scribblers can write to the club at PO Box 3, Shildon, County Durham, DL4 2LW. The club also has a bulletin board on 0388 773737.

the latest version of MS-DOS (4.01), which most PC users don't have yet.

Deltasoft Flightdeck

Flightdeck is a flight simulator program (not a game). It was obviously written by a pilot, and appears to be quite realistic. You control a Boeing 737, with the various instruments displayed in the lower half of the screen, and the view from the cockpit displayed in the upper half. Navigation aids are provided, and the program comes with a database of navigation beacons and runway details.

There are a few shortcomings - no collision checks, for instance. Deltasoft also produces a flight planning package for pilots. *Flightdeck* costs £22.95 from Deltasoft, 11 Dumaine Avenue, Stoke Gifford, Bristol BS12 6XH.

John Torofex

**NORTHERN
SINCLAIR
COMPUTER
SHOW**

SATURDAY, APRIL 8th
at
Stokes Hall, Church Road, Leyland, Lancashire
10.00am until 6.00pm

Over 35 stands specially for the home computer user.

**HARDWARE ❖ SOFTWARE ❖ PERIPHERALS
PRINTERS ❖ DISKS & DISK DRIVES ❖ GAMES**
Plus

The first public showing in the North of
**CAMBRIDGE COMPUTERS'
Z88 PORTABLE COMPUTER**

*Also on show:
Cambridge Computers' new Satellite TV system*

*Meals and refreshments available all day.
Bar open throughout the exhibition.*

ADMISSION £1.50 (Payable on the door)
For further information contact the organiser,
**DAVID BATTY on Leyland (0772) 454328
FAX: 0772 454680**

COMPUTER STATIONERY (U.K.)

**Commercial House, Commercial Road,
South Shields, Tyne & Wear, NE33 1RW**
Telephone: (091) 455 4300 Telex: 537390 Fax: (091) 455 1847

PROBABLY THE BEST PRICES IN THE U.K.!
- ALL INCLUDE V.A.T. AND DELIVERY

DISKETTES	Nashua 5 1/4" DS/DD 48 TPI	£0.42 each
	Nashua 3 1/2" DS/DD 135TPI	£1.07 each
	Amsoft 3" CF2	£1.99 each
RIBBONS	Citizen 120D	£2.29
	Epson MX100/FX 100	£2.52
	Commodore NPS 501	£2.38
	Oki Microline 192/193	£3.32
	STAR LC24-10 (Original)	£5.68
	Amstrad DMP 2000/3000	£2.50
	Amstrad 8256/8512	£3.25
	STAR LC10 Nylon	£2.89

(All other makes at up to 50% off R.R.P.)

DISK STORAGE	5 1/4" 10 Capacity	£1.20
	5 1/4" 50 Capacity	£4.50
	3 1/2" 40 Capacity	£4.50

***** STOP PRESS ! !** Laser Cartridges Canon MK1/MKII £57.90 (Inclusive)

These are just samples of our fantastic offers. Please send £1.00 for our full product listing (refundable), or ring for a price.

**Cheques/Postal Orders/Official Orders to:
Computer Stationery U.K.
Commercial House,
Commercial Road,
South Shields,
Tyne & Wear,
NE33 1RW**

(All Orders under £10.00 - Please add £1.00 Postage & Packing)

YOUR FORMAT

MACHINE-SPECIFIC COLUMNS



When your character has had all the chopping he/she can take (I'll use 'she' from now on, since that's the character I always choose) she sinks slowly to her knees before falling flat on what's left of her face. It does lose something in the translation, I concede, but in my book any game that makes me laugh out loud as my character gives up the last of her lives must be worth a look. Or take again what happens when you face several of the nasty brutes who can bite your head off. Having done so they swallow the thing whole - before letting out an impressive and embarrassing burp!

Sounds a bit too gruesome for you? Fair enough, though since we're talking about sprites less than an inch high here I don't

Light gun stunner

An exciting development has been announced for the CPC games market. Amstrad, under its 'Amstrad Fidelity' label, is bringing out the Magnum lightgun at the end of next month. Virgin Mastertronic, which has exclusive marketing rights to the gun, is to bring out the Magnum with half a dozen specially designed games - *Ground Zero*, *Starship Encounter*, *Solar Invasion*, *Robot Attack*, *Rookie* and an as yet unnamed sixth title.

The Magnum is to cost £29.95 which, considering you get half a dozen games thrown in, is amazingly cheap. With such a strong start it's to be hoped that the lightgun will become quite a feature in the CPC market. Me, I'm just waiting for an opportunity to play *Operation Wolf* using one!

Only a couple of months ago, you may recall, we revealed that Electric Studio was working on a similar device. It seems that the light gun is an idea whose time has come.

Barbarian is back

At last Palace has completed *Barbarian II*. It's been a long time coming, but the wait has been worthwhile (especially at the reasonable price of £10 tape and £15 disk - which is a fiver less in each case than *Elite's Question of Sport*).

It's a hack 'n' slay in the finest traditions of that gory genre, with your character - either an axeman or a sword-wielding woman - taking on some twenty grotesque monsters in a fight to the death. Now it must be said that for sophistication, intellectual stimulation and subtle characterisation you'd be better off with *Psycho-Pigs UXB*, but in my experience most games players sometimes want nothing more mentally taxing than a good old bloodbath - exactly what *Barbarian II* is. What redeems it is something very few CPC games can boast: wit.

ASA strikes again

I've had several letters recently from people who've recently bought CPCs from Dixons and discovered that they don't contain the Amstrad software bundle. The extraordinary thing is that, because it's advertised as a 'free' offer, there's no obligation on anyone to fulfill the promise! So naturally Amstrad is saying that it's Dixons' fault for not 'participating' in the deal, and Dixons is saying it's Amstrad's fault for producing the misleading literature.

Not entirely unconnected with this subject is the news that the Advertising Standards Authority has recently had cause to rap Dixons' knuckles for its pre-Christmas inability to supply the software bundle and vouchers it was advertising with the CPC. That ASA edict had them quaking in their boots. They won't pull that stunt again!

think you need reach for Mrs Whitehouse's phone number. It does sound the kind of thing she'd be happy to offer a few outraged squawks about, though, so if Pete and the rest of the guys at Palace find they don't get quite the same level of publicity from using Ms Whitaker the second time round, perhaps they could tip off the old dragon that there's something nasty going on in the computer game world again?

Firmware manual for sale

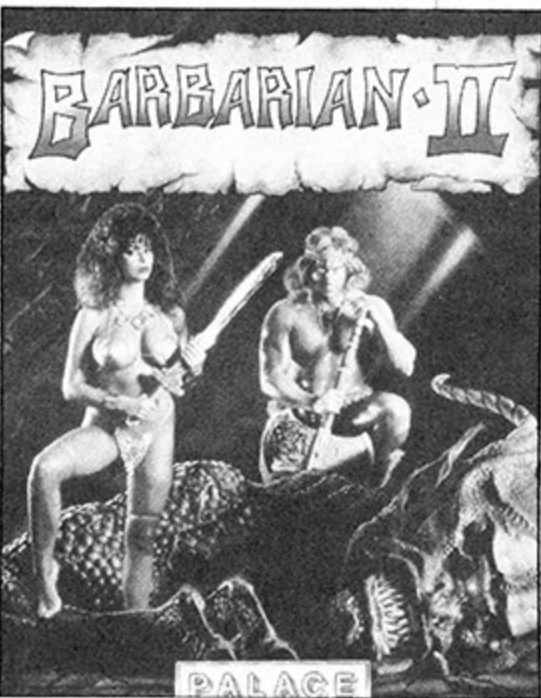
Since Amstrad dropped the CPC firmware manuals I've had a constant stream of letters from people wanting to know where they can get hold of a copy. Unfortunately I don't know of any sources - anyone who could tip me the wink would be doing the whole community a favour. In the meantime a Mr George Phillipson of Wakefield has a copy of the 464 guide (SOFT 158) in mint condition for sale at £15 including post. Ring him - and not me! - on 0924 822778.

Runs like clockwork

Had a letter from Joe Florek recently telling me about the natty named Clockwork Orange Software, which started off life as a PD software library last September and has now progressed into a disk-based fanzine-cum-newsletter. The only drawback to this that I can see is that you can't read it in the bath. Send a miserly 50p (which 'includes p&p, VAT and ESP!') and a disk to: COS PD, 11 Stanley Villas, Greenway Rd, Runcorn, Cheshire WA7 4NW.

By the way, I'm very happy to pass on more such messages. Get writing to: CPC Centre, New Computer Express, Future Publishing, 4 Queen St, Bath BA1 1EJ.

Steve Carey



• The fantasy of every hetero adolescent male - whatever his age?

★ ★ ★ NEW LOW PRICES ★ ★ ★

INCLUDING SLEEVES, LABELS AND A 100% NO-QUIBBLE GUARANTEE!

QTY.	5.25"	3.50"
	DS/DD	DS/DD
25	£7.25	£21.00
50	£13.50	£37.00
100	£26.50	£70.00
200	£52.00	£130.00
500	£120.00	£300.00

PSION ORG. XP £110

IBM PC PRINTER LEAD £5.95

PRICES INCLUDE CARRIAGE AND V.A.T.



SAME DAY DESPATCH
(0836) 775060
WESTONING LTD
DEPT NCE, 12 SANDERSON ROAD,
WESTONING, BEDFORD MK45 5JY



ATARI 520 ST-FM SUPER PACK WITH £450 WORTH OF SOFTWARE£369.99

ATARI 1040 ST-FM SUPER PACK £469.99

31/2" 50 CAPACITY STORAGE BOX £4.95
51/4" 50 CAPACITY STORAGE BOX £3.99

51/4" DSDD BULK IN LIBRARY CASE £4.50 FOR 10

31/2" DSDD 1MB 135TPI BULK.....£8.50 FOR 10

SONY 31/2" DSDD.....£10.40 FOR 10

NASHUA 31/2" DSDD£12.50 FOR 10

31/2" DISKS HEADCLEANING KIT£2.99

SPECIAL OFFER



50 CAP. 31/2" STORAGE BOX
25 31/2" DSDD 1MB DISK **£25.00**

FREE CLEANING KIT WITH ALL ORDERS OVER £15 (Worth £2.99)

DEALERS!! CALL US NOW FOR BEST PRICES.
ALL PRICES INCLUDE V.A.T. AND DELIVERY

Callers 091 516 0065

OR send cheque or P.O. with your order



VAT REG: 486 0821 33
Branded and Unbranded
Disks at Competitive Prices

H.C.L.

TEL: (091) 516 0065
FAX: (091) 516 0065

HOBBURN CONSULTANTS LTD

10A SOUTHWICK INDUSTRIAL ESTATE, SOUTHWICK, SUNDERLAND SR5 3TX

SPECIALISTS IN THE SUPPLY AND INSTALLATION OF COMPUTER HARDWARE, SOFTWARE AND DATA SUPPLIES

miditech

MIDI SOFTWARE FOR ATARI AND AMIGA'S ?

We deal only in Computer Music so we can offer you the biggest choice plus the Specialist Knowledge to help you get the most from your Midi Setup. Write or phone for our Price Lists containing over 100 Programmes, Accessories and Demo Discs.

The Midi Pack

Yamaha PSS - 480, Track 24, software, midi leads, plus instructions - the ideal starter package for only - £249.00 including P&P
Amiga owners please add £30 for interface

Amiga Owners

At last ...A Pro Featured Sequencer at a budget price.
Track 24 is a New Release from Comus featuring Real and SteptimeRecording plus Notation Editing.

All this and more for only £75.00 or £100.00 with interface.

ATARI..AMIGA..MACINTOSH...PC...DR.T...HYBRID ARTS

PASSPORT...STEINBERG.C.LAB..INTELLIGENT MUSIC

MIDITECH, THE COLOSSEUM, PORTLAND GATE, LEEDS, LS2 3AW TEL 0532 446520
ACCESS & VISA WELCOME MAIL ORDER AND TRAINING PACKAGES AVAILABLE

FREE! TENSTAR PACK WORTH OVER £229!



FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite



FREE! - IKARI WARRIORS - by Elite



FREE! - WIZBALL - by Ocean

Commodore AMIGA



ONLY £3.34 PER WEEK
RETURN COUPON FOR DETAILS

£346.95

+VAT = £399
INCLUDES FREE UK DELIVERY

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

WHY SILICA SHOP?

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

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

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

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

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

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

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

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

PHOTON PAINT PACK

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

1084S MONITOR PACK

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

FREE FROM SILICA

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

FREE TENSTAR PACK

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

INC VAT

DO YOU OWN AN AMIGA?

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

SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

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

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

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Mr/Mrs/Ms: _____ Initials: _____ Surname: _____

Address: _____

Postcode: _____

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

EXPERIENCED 68000 PROGRAMMERS

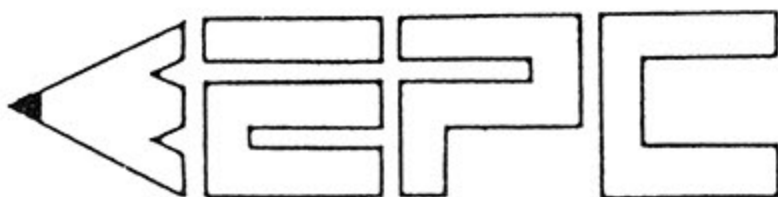
Emlyn Hughes International Soccer has just been awarded the accolade **BEST GAME OF THE YEAR** by Commodore Computing. Now we need to put this and other sports simulations onto the Amiga and Atari ST.

We are looking for mature, hard-working, and above all, experienced 68000 Programmers. Your experience need not necessarily have been gained writing games - though you should, of course, have an interest in sports and games. Knowledge of C, 8086/8088 assembler, and the IBM PC would also be useful.

You will be housed either in the Harrow area or in the Southampton area, and if you do not live in one of these areas you should be prepared to relocate. Applicants in the Coventry area may also be considered.

We will pay top salaries to the right people. If you are not capable of earning a substantial five figure salary, please do not apply.

Write to: **NIGEL ALDERTON, SOFTWARE MANAGER, AUDIOGENIC SOFTWARE LTD.**
 Winchester House, Canning Road, Harrow HA3 7SJ,
 or telephone 01-861 1166 between 10 am and 7 pm.



SO!

You're bright, talented and enthusiastic.

AND

You've probably had some programming experience (preferably at Assembler level).

OR

Your graphical abilities are matched only by ours.

IF

You're interested in joining a friendly and creative team who design and develop 16-Bit games as well as TV and video graphics.

THEN

We'd like to hear from you!
 Please send CV's and demos to WING LAI at

ELECTRONIC PENCIL CO

SECOND FLOOR, 447 GREEN LANES, HARINGEY, LONDON N4 1HA
 OR RING 01-341-6866

ACTUAL SCREENSHOTS

A new software label setting new standards in Computer Gaming requires **CODERS** and **GRAPHIC ARTISTS** for the **AMIGA, ATARI ST** and **PC MACHINES**, capable of producing the **BEST** the Medium has to offer.

If you think you've got what it takes, contact **ADRIAN TURNER** at **ACTUAL SCREENSHOTS**

immediately on **(01) 533 2918**
 or send C.V.'s and DEMOS to:
UNIT 7D, KING'S YARD, CARPENTERS ROAD, LONDON, E15 2HD

ARGONAUT SOFTWARE

We are expanding our development team and have vacancies for talented programmers, graphic artists and software musicians with experience on one or more of the Amiga, ST, Mac or IBM computers.

A good knowledge of machine code in either 68000 or 8086 is required. There are also positions for Z80 and 6502 programmers wishing to learn a new language. You will be working in a stimulating environment with a dynamic team of top programmers; on very powerful computer equipment rarely seen in the games industry.

We are the leading creator of 3 dimensional games like the award winning Star Glider series, and are now working on new exciting game and simulation products to be the hits of 1989 and 1990!

Top Salaries paid according to Experience, Ability and Performance.

Contact Jez San or Richard Clucas at our North London Offices on
 Tel: (01) 906 3744, Fax: (01) 959 5052

CLASSIC SOFTWARE

URGENTLY REQUIRE

FREELANCE GRAPHIC ARTISTS

Experience of .IFF essential, must have own hardware. A previous track record is not necessary, but you must have high quality, stunning examples of your talent.

Either write to:

**CLASSIC SOFTWARE, PO BOX 8,
 SANDOWN, ISLE OF WIGHT. PO36 8LT
 or Telephone 0983 864674 for further details.**

Desktop produced Biological Documents - Interesting Projects

Computing is fun
 But then so is Biology
 All sciences now use computers
 Many scientists have computing as their hobby
 Employment is good for those with technical skills.
 If you are hoping for a career in Biology
 but also interested in Computing,
 why not mix the two

BIOLOGY WITH COMPUTING

LUTON COLLEGE OF HE

run a special

2 yr Full Time Course

leading to a BTEC

Higher National Diploma

For those with at least one appropriate "A" level (or equivalent) and some other supporting studies or those with relevant alternative experience.

Why not write to us for more details

The Admissions Tutor for HND ABC

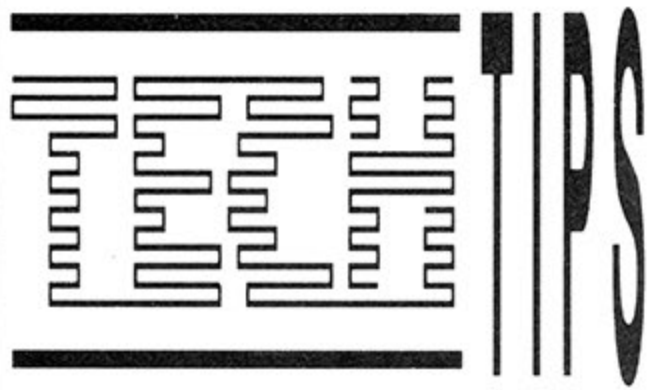
Faculty of Applied Sciences

Luton College of HE Park Square, Luton. LU1 3JU

Based course - Computer Interfacing Practicals - Electronic note books

Involving Computers - One week Field Course to Biological Firms using

Computers - Industrial placement during Summer Vac - Unit



hasn't arrived yet) when you won't be able to use your system without a proper manual.

Second, I've never used PC Calc+ and I don't have a copy to hand so it's a little difficult to say what the problem might be. From the printout you sent it looks like a

spreadsheet file but it bears a strong resemblance to a file containing formulae and not the actual spreadsheet itself.

Furthermore, from the directory print you enclosed I spot a file called P90.EXE which suggests that the file P90 is to be used exclusively with the program P90. When you turn on your PC, try running P90 (simply type P90 <enter> at the A> prompt) and see what happens.

Also from the directory, there isn't a documentation file. This is normally called README.DOC or something similar and is where you'd expect to get information about the files on the disk. I believe PC Calc+ comes on several disks so it might be on one of the others. Look for it and read it (you can TYPE it to the screen or your printer) and you might find that all is revealed.

But do get your printer manual problem sorted out. Without the manual the printer isn't fit for the purpose for which it was sold - so Comet doesn't have a leg to stand on.

TIP PC pointers

Here's a couple of tips for PC owners. There is an undocumented file recovery command in MS-DOS 3.2. It's best to experiment but it does seem to recover accidentally deleted files - just type RECOVER A: (or whatever drive you want).

Second, if you add a sub-directory or new folder called PATTERNS in your Images and Gemapps directories you can now, when selected, save and load patterns (which appear on the right-hand side) when using Gem Paint.

Kashif Quraishi, Hayes, Middlesex

HELP! PC purchase

I am considering buying a PC and wonder if you could help me. I have been offered a Commodore PC1 for £300 but can find no test reports or

have been unable to find a supplier in my area so could you give me any information on the machine.

J Woods, Guisborough, Cleveland

The Commodore machine comes in two guises: the single disk or the double disk version, costing £299 and £399 respectively. Dealers? Try: SK Marketing, 10 Fulham Broadway, London SW6 1AA, Tel: 01 381 6618/9.

The Schneider PC is an 8088 machine running at 9.54mhz. It has 512k of RAM and uses a Hercules/CGA graphics adaptor. It has expansion ports for a printer, modem, mouse and joystick, and comes with a single 8-bit half-size expansion slot. It costs £459 for the mono version and £631 for colour.

However, buying a dedicated monitor needn't be as expensive as you might think. If word processing is going to be your main use you might consider buying a green-screen or black and white monitor, using your TV only for low-res colour applications like games or some graphics programs.

Evesham Micros (0386-765500) sells a Pye 15" dual mode TV/monitor for £269 if you decide to upgrade. Atari's black and white monitor for the ST will cost around £110 from any decent ST dealer, and a suitable mono monitor for the Amiga will cost about £80.

There really isn't room to go into all the suitable graphics software for both the ST and Amiga - there's simply too much

HELP! 64 digitiser

I have just bought my first issue of New Computer Express #17, and think it's great. Could you please tell me if it is possible to get back issues? Also could you find out if there is a video digitiser for the Commodore 64?

Adrian Sharp (aged 13 3/4), Whitehaven, Cumbria

• Aaahhh, praise... Yes it's possible to obtain back issues and here's how to do it: send a cheque or postal order for 75p (which includes postage and packing) stating the issue you require, to The Old Barn, Somerton, Somerset TA11 7PY. Don't be disappointed if we don't have the copy you want though, back issues don't stay on the shelves for long!

A Commodore 64 digitiser huh? Hmm, several digitisers were imported from Europe in the heyday of the C64, but now they're bit thin on the ground. CRL used to market one and you can contact the company at 7 Kings Yard, Carpenters Road, London E15 2HD. Tel: 01 985 2391. If it can't help than try an ad in the classifieds which Express will be starting shortly.

HELP! PC printing

I recently purchased a Sinclair PC200, monitor and printer from Comet. Unfortunately, the printer did not have a manual with it and the only labelling on it is a sticker which proclaims it to be a "Series 200 printer".

My problem is that I am trying to get to grips with PC Calc+. Whenever I try to print the spreadsheet it prints all right if I print it horizontally, but when I try to use the file P90 on the disk I get garbage.

I enclose a sample of the output. Can anyone save my sanity?

E P Ingram, Paisley, Scotland

TIP SuperNorm to the rescue...

In issue £19 you had a letter from T. S. Yeo of Dunbarton, Scotland.

I would be grateful to you if you could pass on to him this disk notcher. I had a C64 for over three years and had no trouble with using side two of the disks.

Also a word to Tarquin Burnett about STOS. I know very little about BASIC, but have just finished my first demo. If you want a copy of my demo, just send a SAE and a

disk.

Keep producing a great (cheap) mag, which knocks spots off the other weeklies.

Norm Tierney, 5 Campion House, Mayville Est, Matthias Rd, London N16 8LN.

• What a nice guy! Just for you Norm, the Express (bit of software at the back of the cupboard, that no-one else wants), super, silken-bound, bijou and compact good-samaritan prize of the week.

• In the first place, go back to Comet and insist on a manual for your printer or a refund. I guarantee you there will come a day (and despite what you think, it

even any of your advertisers offering the machine.

In your paper of 16.2.89 you mention the Schneider Euro PC. I

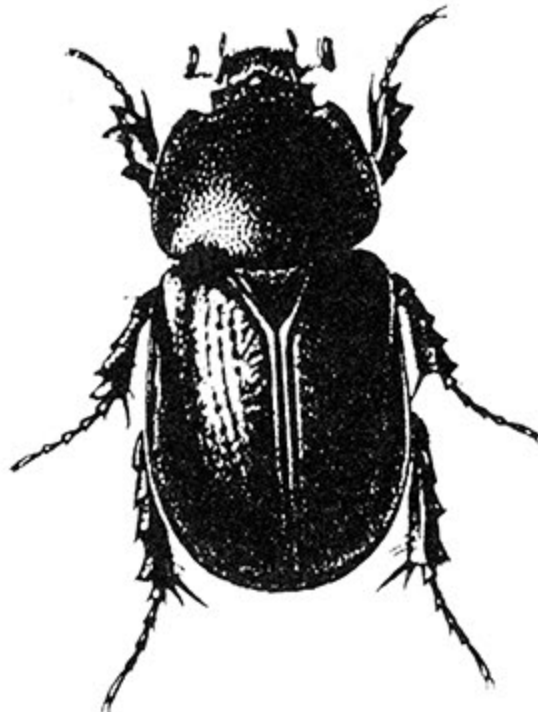
BUG OF THE WEEK

I've just bought WordStar IV for my PCW9512, and I'm having trouble printing £ signs. More to the point, WordStar IV insists on printing them as 'l's!

Clive Ogilvy, MD

• Pentodon idiota

This beetle is the only one of its species found in Europe. It can make shrill sounds by means of a stridulatory device on its propygidium, thus making it useful for mounting inside PCW sound chips. Occasionally, however, it will escape, and has been known to chew through the keyboard cables alongside.



HELP! TV quality

I have been seriously considering buying an Atari STFM or a Commodore Amiga A500 which I hoped to plug into my Ferguson TX colour television. This only has a standard aerial socket fitted.

After reading your article on monitors in issue 15 I have the impression that if I do go ahead and buy one of these computers, using the modulator to connect them, then I will have to expect a picture quality of unacceptable standard. I intend to use the computer for a variety of purposes but particularly word processing.

Could you tell me if this assumption is correct, and if so would it be possible to modify the television to accept a better signal such as RGB?

Second, could you recommend some software to allow the drawing of graphs, tables and maps.

Bruce Mackie, Withington, Manchester

• A television is really only suitable for games - and only then if you're not too demanding, given the graphic quality of the Amiga and ST. You certainly shouldn't consider using a TV for word processing.

Some TVs are dual models, supporting monitor-quality displays in addition to normal TV standards, but unfortunately your Ferguson isn't one of these. So your only choice is to buy a dedicated monitor, or upgrade your TV to the dual monitor standard.

of it. However, Deluxe Paint on the Amiga and Degas Elite on the ST are good starting points.

HELP! Tape to disk

I have a Spectrum +3 and would like to know how I can copy my tape software to disk. I hope you can be of help to me.

Brian Cox, Bewbush, Crawley

• The eternal question! Tape software is usually replete with several layers of heavy protection. You can't just copy the relevant files to the disk - as you've no doubt discovered! Fortunately (for you, if not for the software houses), there are commercially-available utilities which will remove the protection and allow you to transfer the program. Mail order advertisers are the best source of these. Try: Kobrahsoft, Pleasant View, Hulme Lane, Hulme, Nr. Longton, Stoke-on-trent, Staffs ST3 5BH.

HELP! Comms choice

I have a Spectrum +2 and a PCW 8256. I want to buy a modem but as connecting to Micronet and other viewdata services would be very expensive from here in Ireland I don't need a 1200/75 baud rate. A 2400 baud would be nice as a lot of Irish services run on it. My price range is up to £160.

The Datatronics Discovery 1200

CK would be my ideal modem but I don't know if it is compatible with either of my computers. Can you help, or suggest which computer I buy a modem for and what model of modem should I buy?

Eoin Carroll, Galway

As a general rule, I'd recommend you employ your PCW as the comms machine since the 80-column display will make life easier for you. However, you'll need Amstrad's RS232/Centronics interface to drive a modem and since that costs around £60 it takes a hefty chunk out of your budget.

Secondly, I think you're going to be disappointed on the 2400 baud facility. I'm ready to stand corrected on this, but I think Amstrad's own 2400 model is currently the cheapest on the market at around £225 with most rivals nearer £300.

The better news is that just about any modem is compatible with any computer provided the computer supports RS232, so you needn't worry about the Discovery 1200 - other than the provisos noted above about the PCW interface and the fact that it's only a 1200 baud modem. But if you can get a good price on one, you shouldn't have any problems.

HELP! C compatibility

My son bought a Commodore 64c computer last Christmas, but there are a lot of good games that will not load.

The tape recorder has been checked and is OK, so I wonder whether it is a question of compatibility with the older C64 model?

It is such a shame for him to pay £9.95 for a tape and then find it is useless.

Personally, I did advise him to buy Atari, the finest 8-bit computer ever...Blah...Blah...Bore...Yawn...

Ron James, Ribblesdale, Preston

Firstly Ron, the tapes are not useless! Neither is there a problem with compatibility between the older C64 and the C64c. The problem lies either with the tape player or a possible (though highly unlikely), fault in the tape interface port of the computer.

Buy a solvent-

Win a sub!

We want to hear your problems, but we also want helpful hints and tips. And reports of those bugs you've found, from the comical to the downright frustrating. You could scoop the weekly best-tip prize of a free 26-issue subscription!

And remember, there's no waiting around for monthly publication dates. The best tips, and solutions to your problems will be in print before you can say Alan Sugar. (Please don't send SAEs for replies, we can only answer enquiries in print).

So whether it's help offered or needed, write to:

Tech Tips, New Computer Express,
4 Queen Street,
Bath, Avon BA1 1EJ.

based head cleaning fluid (or methylated spirits), and some cotton buds.

Dip the one in the other (not the fluid in the cotton bud!), and rub the read/write head of the tape player gently but vigorously until clean.

If there is no improvement, try the tip featured in issue #19, detailing how to adjust the azimuth angle.

ST monitors

I would like your advice about which monitor to buy for my Atari 520 STFM. I have seen adverts for the Philips CM8833 and CM8852 with a price difference of about £50. Could you tell me what the difference between these is.

In one advert the CM8852 is stated as being able to run all three ST resolutions, but in others it just says "higher resolution" than the CM8833.

J E Rollitt, Rotherham, S Yorks

I have a Prism QL14 colour monitor and connection is by Euroconnector to an 8-pin (round) RGB socket. Is it possible to get this to work with an Atari STFM? I can afford the computer but not another monitor.

M H Mottram, Beeston, Nottingham

There seem to be more questions on STs and monitors than all other subjects put together. The difficulties seem to fall into two areas: the problem of the ST's three display modes, and attempts to use non-standard monitors.

To begin with, the ST really only has two modes: colour and mono. In colour you can have a 320x200 display in 16 colours, or 640x200 in four colours. In mono mode you get 640x400 resolution.

The colour display signal is of digital RGB type, which means it is compatible with most colour monitors designated either "medium" or "high resolution" - virtually meaningless phrases these days. It's easier to list the monitors the ST won't work with: any composite video models, and the majority of analog RGB monitors.

The mono mode is provided by a TTL mono signal which is unusual, and you are therefore restricted in the number of monitors that are compatible with the ST.

If all else fails, then take the computer and tape player back to your dealer so that it may be either exchanged or repaired.

HELP! In the Stu...

Please could you help me with a problem I am having trying to get a Modem House Voyager 7 modem to work with my Amiga 500.

Only five of the pins are used in the cable, these are the first 5: GND,

The problem is that few monitors are set up to display 400 vertical lines. Generally you might as well buy Atari's own model.

The mono and colour modes are usually mutually exclusive, with one notable exception: multisynch monitors. These models - usually sold for the PC market - are able to display a variety of horizontal and vertical resolutions from incoming signals of varying frequencies. What makes them unusual is that they can recognise and synchronise to the different incoming signals - hence the name.

Unfortunately, this sophistication doesn't come cheap and multisynch monitors usually cost £200 to £300 more than single frequency models with prices around £500.

The Philips CM8833 is a genuine bargain and is widely available at around £220. It's perfectly suited to the ST and there's no reason to buy anything more expensive (you could buy one, plus a suitable mono monitor for less than most multisynch units).

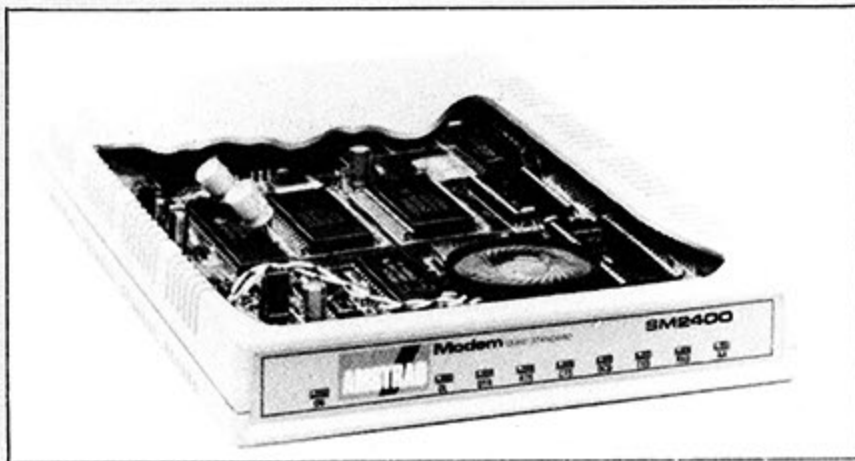
A final source of confusion is dealers

who don't know what they're selling: I have seen one well-known ST dealer advertising the excellent NEC Multisynch IIGS as a "greyscale colour" model. Only the greyscale part is correct since the IIGS is a black and white monitor.

The problems in connecting non-standard monitors arise, not because of signal problems usually, but because of cabling difficulties. Mr Mottram's is the first request for a QL-compatible monitor, but there have been several Amstrad CPC owners in touch about their monitors.

Generally the best solution is to contact one of the specialist firms who have the expertise in making cables for the enormous variety of monitor connects (Euroconnector and SCART are not standard, despite lots of adverts to the contrary).

One to try is Computer Connections at Ashlaw House, Euximoor Drive, Christchurch, Wisbech, Cambs PE14 9LS, tel 03548-590 (who incidentally also have the difficult-to-find Amiga 23-pin video connector).



• The ST and its monitors: More queries than everything else put together?

TXD, RXD, RTS, CTS.

As I bought the modem second hand, I have no instructions on how to use it. On the front of the modem are five LEDs marked: POWER, DTR, TD, RD and CARRIER. What are they for? also the dial on the front has six settings: TEST, 1200/1200, 1200 Answer, 1200 Originate, 300 Answer and 300 Originate. What are they for?

I know I am asking a lot but I am sitting here pulling my hair out trying to get this thing to work.

Now for a tip. Have you ever cop-ied a file from one disk to another only to discover you have put it in the wrong directory? (NO - Tech Ed)

Stu Bridges, Bedworth

Do you mean that you have a cable already made up? Here are the proper connections for a cable with the signals you describe: GND to GND, TXD to RXD, RXD to TXD, RTS to RTS and CTS to CTS from computer to modem respectively.

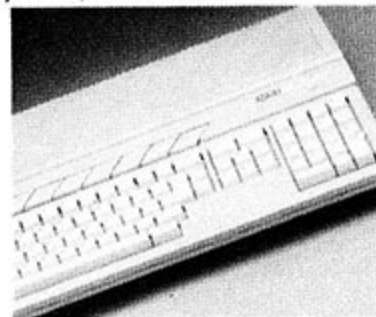
The LEDs are used as a visual indicator of what's happening with your call and subsequent transmission. POWER means

that you have the power to the modem switched on (it is said that sarcasm is the lowest form of wit), DTR means Data Terminal Ready, i.e. that your computer and modem are ready to start transmitting. TD means Transmit Detect, i.e. you are currently sending something. RD? Receive Detect, you're receiving a transmission and CARRIER means your modem has seized the telephone line.

You have a manual modem. A modem which cannot automatically sense and switch transmit speeds or determine receive or transmit modes for itself (via software). Therefore, you have to manually

dial the speed and mode that you require. TEST is a built-in modem test. 1200/1200 is full-duplex (see the comms feature in this issue for an in-depth explanation of jargon) transmission at 1200 Baud. 1200 Originate means that you are going to transmit to another modem at the stated speed - likewise 300 Originate. 1200 Answer means that you wish to answer another modem dialling yours at 1200 Baud.

Here's a tip: Don't send any more tips!



• Any more modem problems? See the comms feature in this issue

**EXPRESS
EXPRESS
EXPRESS**

SALES

**PCW 9512 USERS
NOW YOU CAN AFFORD TO USE YOUR PRINTER !!**

Send a used PCW 9512 Carbon Film Ribbon Cassette - £1.59 to:
**Aladdink, (Dept C.E.) Eyemouth,
Berwickshire, TD14 5AP**
We will supply a **BRAND NEW**
Carbon Film Ribbon **AS GOOD AS NEW**
(OFFER EXTENDS to April 15th 1989)
(Limited to one Cassette per Household)
Also.... Fabric Ribbons re-inked for most printers. Send
S.A.E. for details stating printer make and model or
Telephone: 08907 50965 to 8pm

EAST MIDLANDS PUBLIC DOMAIN LIBRARY

Amiga PD disks over 400 in stock!
£5 p.a. Subscription including 2 FREE Catalogue Disks (updated FREE!)
Virus X, Guardian etc. Virus Fillers in Stock
Also Blank Disks, Labels, Disk Banks etc.

RING NOW FOR PRICES

Cheques or Postal Orders payable to:

E.M.P.D.L.
54 Watnall Road, Hucknall, Notts, NG15 7LE.
Tel: 0602 630071

AMIGA MEMORY EXPANSIONS

Fully populated, easy to fit (just plug in) memory expansion boards for the Amiga A500.

MX1 - 512K switchable memory expansion board £84.95

MX2 - 512K switchable memory expansion board with battery backed time and date..... £99.95

Dragons Lair, 6 disks, 1 meg only £34.95
Dungeon Master, 1 meg only £19.95

*All prices are fully inclusive.
Cheques / Postal orders to:*

C & M Micros
25 Middlefield Road
Bessacarr
Doncaster
DN4 7EB

**MID SUTHERLAND
DATA**

* PC SOFTWARE *

* PARROT DISKETTES *

PHONE NOW FOR DETAILS !!

0862 3728

*** UNIQUE SPECTRUM SOFTWARE ***

Choose from:

1. "Dogtrack" Greyhound racing form analyser (+game).
 2. "Pools" Program with form input.
 3. "I Ching" For the more mystical.
 4. "Subliminal Suggestion" Reduce stress + increase confidence.
- Any two programs on one tape for £4.99 (please state)

Please send cheque/PO to:

**JOHN LEWIS, 157 HAMILTON AVENUE,
TULWORTH, SURREY.**

C.V.L.S.

Fuji 31/2" DS/DD 135TPI £1.60 each
Fuji 51/4" DS/DD 48/96 TPI £1.10/£1.40
51/4" & 31/2" Cleaning Kit £3.50
31/2" 80 Lockable Box £7.99

Orders under £20 p+p £1.50

0742 884183

92, Firtree Estate,
Thurgoland, Sheffield. S30 7BG

128K SPECTRUM/+2/+3 OWNERS

Issue 1 of Enigma now available! A tapezine featuring special fx, AY music by PLAYERS SOFTWARE, news, reviews, hints, etc.
Plus free assembler, +D utility, PLAYERS CD demo & games.
DON'T MISS THE FIRST ISSUE! ONLY £1.99

ENIGMA

DEPT NCE, 14 LION RD, NYETIMBER,
BOGNOR REGIS, WEST SUSSEX PO21 3JZ
ENQUIRIES: (0243) 263427

ASTROLOGY for beginners

Teach yourself astrology using your Computer

Buy a Starter Pack comprising a simple program to calculate a horoscope, an introductory booklet and 2 self-teaching programs (how to interpret the horoscope)

ONLY £12.50 No previous knowledge required
For ALL Amstrads, Atari ST's, BBC, Spectrum, C64, Dragon, MSX and IBM.

Payment by Access/Visa. Cheque. P.O. PLEASE STATE MAKE OF COMPUTER or send s.a.e. (about 9" x 7") for free catalogue giving details of our wide range of programs for **PROFESSIONAL ASTROLOGERS** including complete natal interpretations and forecasting.

Also **I CHING, GRAPHOLOGY, BIORHYTHMS, etc.**

ASTROCALC

(Dept NCE) 67 Peascroft Road, Hemel Hempstead,
Herts HP3 8ER England. Tel: 0442 51809



ATARI ST PIRATE PACK



Pirate Software has collected the highest quality Atari ST Public Domain Software and brought them together on the ST Pirate Pack Collection.

Over 30 Titles of the best Public Domain Software around.

Available on 10 Single Sided Disks or 5 Double Sided Disks.

All orders will receive a FREE 10 Disk Storage Box.

The Best Games plus the Best Word Processor, Database, Spreadsheet and Art Programmes available.

For under 49p per title.

This Pack is exclusive to Pirate Software.
Send a Cheque or Postal Order payable to:

PIRATE SOFTWARE

for 10 Single Sided Disk Pack for only £19.99 or 5 Double Sided Disk Pack for only £14.99

PIRATE SOFTWARE
36, CHESTER ST.
NEWCASTLE ON TYNE
NE2 1AV

**THIS SPACE ATTRACTS
ATTENTION!
FOR JUST £21**

CALL SARAH KING TO RESERVE
YOUR SPACE NOW!!
ON 0225 444439
OR 0225 446034

ATARI ST PUBLIC DOMAIN

Wordprocessors, Games, Utilities, Music, Languages, Art, Educational and even DTP progs from £1.75! You'll be amazed at our Premier Service. For a FREE catalogue send a 19p stamp to:
ALPHA COMPUTING
32 Meadow Drive, Halifax, W.Yorks HX3 5JZ

FREE !!! (1 per Household)
10 Wrap Around 3 1/2" Disk Labels
S.A.E. to: N.B.S. (Label Offer)
21, Priory Rd, Newport, Isle of Wight

S.F.A. COMPUTERS
AMSTRAD-COMMODORE-CAMBRIDGE

**COMMODORE PC 1
C/W MONITOR + ABLE 1
SOFTWARE £295 + VAT**

Phone now for best prices on all models.

Unit 15, Abbey Mill Business Centre,
Seedhill Road, Paisley PA1 1JN
Tel: 041 - 840 - 1477

COMPUTER SUPPLIES

3 Octave Musical Keyboard (Spectrum 128/+2/+3 compatibles) £19.95

10 Microdrive Cartridges (used) £9.95

Prices include VAT and P&P

Cheque/P.O. to:
OMNIDALE

23 Curzon Street, Derby DE1 2ES
Phone: 0332 291219

WANTED

**ALL COMPUTER
HARDWARE/SOFTWARE WANTED
FOR CASH OR EXCHANGE
NOTHING REFUSED!!
01 727 0424**

PC File Plus V2(3) £5.00
PC Calc Plus (3) £5.00
PC Type Plus (3) £5.00
PC Type (3) £5.00
N. York Word (3) £5.00
Freeway Acc Plus £5.00
PC File db (3) £5.00

only £1.75

(per disc fully inc) Quick Taste
PC Railroad STD Code
Galaxy 2.4 Finder
Ford Car Pre-Calculus
Magic Menus 3 x 5 dBase

Softcell

Services

10 51/4 Discs £16.00,
10 31/2 Discs £25.00
For further details write or phone
for a FREE catalogue!

Dept NCE 9 Wells
Cardiff CF1 8DW
Tel: Cardiff (0222) 222895
anytime

EURO PC

2 or 3 disc sets
51/4" £5.00 31/2" £5.00
Ring for a price and
special offers on the Schneider,
Euro PC Range & Euro PC.

WANTED



An Arabian Exporting Company will pay top cash, I repeat **TOP CASH**, for any computers, photocopiers, telephone systems or any other business machine on behalf of their eager buyer in the Middle East. Unlimited cash available for immediate decision. Please phone
01 360 8095
01 360 3305 or FAX 01 3603757

WORLDWIDE SOFTWARE
1 Bridge Street
Galashiels TD1 1SW

WORLDWIDE SOFTWARE

WORLDWIDE SOFTWARE
106A CHILWELL ROAD
NOTTINGHAM NG9 1ES

Credit Card Order
Telephone Line



North
Scotland
N. Ireland



0896 57004

Overseas Express Service Now Available Overseas Express Service Now

OVERSEAS OVERSEAS OVERSEAS OVERSEAS OVERSEAS

Overseas customers can now contact our

Export Department at:

Worldwide Software
106A Chilwell Road
Beeston
Nottingham NG9 1ES
England

Overseas Telephone Only:
Nottingham 225368

Europe Shipping Costs Are:
£1.50 Per Cass/Disk For Normal Airmail
£2.00 Per Cass/Disk For Express Airmail

Outside Europe Shipping Costs
£2.00 Per Cass/Disk For Normal Airmail
£3.00 Per Cass/Disk For Express Mail

Credit Card Order
Telephone Line



South
Midlands
Wales



0602 252113

SPECIAL OFFER
OCEANIC C64/128 COMPATIBLE
DISK DRIVE
ONLY £112.00

SPECIAL OFFER
C64 DATASETTE UNIT
ONLY £18.50

WORLDWIDE SUPER SPECIAL OFFERS ON COMMODORE SOFTWARE

COMPILATIONS	COMPILATIONS	COMPILATIONS	COMPILATIONS	COMPILATIONS	COMPILATIONS			
Fists "N" Throttles Cass Disk 9.25 11.50	C64	Game Set & Match II Cass Disk 9.25 13.50	C64	Ocean In Crowd Compilation Cass Disk 11.20 13.50	C64	Frank Brunos Big Box Cass Disk 9.25 11.99	C64	Konami Arcade Collection Cass Disk 7.25 13.99
Sports World 88 Cass Disk 7.99 11.99	C64	Magnificent Seven Cass Disk 7.99 13.99	C64	We Are The Champions Cass Disk 7.99 13.99	C64	Gold Silver Bronze Cass Disk 11.99 13.99	C64	Konami Coin Ops Cass Disk 7.99 11.99
Supreme Challenge Cass Disk 9.99 13.50	C64	Taito Coin Op Hits Cass Disk 9.99 13.50	C64	Giants Compilation Cass Disk 9.99 11.99	C64	Leaderboard Collection Cass Disk 11.99 14.90	C64	Solid Gold Cass Disk 7.99 11.99

EDUCATIONAL EDUCATIONAL EDUCATIONAL EDUCATIONAL EDUCATIONAL EDUCATIONAL

LARGE VARIETY OF EDUCATIONAL SOFTWARE NOW AVAILABLE FOR 3 TO 15 YEAR OLDS - SEND SAE FOR CATALOGUE BY RETURN

FAST DELIVERY OF ALL STOCK ITEMS BY 1ST CLASS MAIL IN UK. CREDIT CARD ACCOUNTS DEBITED ONLY ON DESPATCH SPECIAL OVERSEAS BY AIRMAIL WORLDWIDE

COMPUTER CONTROLLED DESPATCH ENSURES FAST DELIVERY ON ALL STOCK ITEMS

NEW RELEASES DESPATCHED ON DAY OF RELEASE

CREDIT CARD ORDER TELEPHONE 0896 57004 CREDIT CARD ORDER TELEPHONE 0602 252113

WORLDWIDE SUPER SPECIAL OFFERS ON COMMODORE SOFTWARE

AMIGA SOFTWARE	C64/128 SOFTWARE	CASS DISK	AMIGA SOFTWARE
3D Pool.....14.35	3D Pool.....7.25.....9.00	Leaderboard Fam Courses II.....4.99.....6.99	Legend Of The Sword.....16.45
4th and Inches.....14.95	1943 Battle Of Midway.....7.99.....11.99	Leaderboard Collection.....11.99.....14.99	Leisuresuit Larry.....14.99
Afterburner.....17.95	4X4 Off Road Racing.....7.99.....11.99	Led Storm.....7.99.....11.99	Lombard RAC Rally.....16.45
Alien Legion.....17.95	F14 Tomcat.....7.99.....11.99	Menace.....9.75.....11.20	Microprose Soccer.....17.95
Baal.....14.95	F16 Combat Pilot.....11.20.....14.95	Micro Soccer.....11.20.....14.95	Milenium 2.2.....17.95
Ballistix.....14.95	Afterburner.....7.99.....11.99	Mini Golf.....7.25.....11.20	Milenium 2.2.....17.95
Barbarian II.....13.25	Arcade Muscle.....9.99.....11.99	Mini Office II.....12.75.....14.95	Mini Golf.....13.25
Batman.....16.45	Armalyte.....6.99.....9.50	Motor Massacre.....7.99.....11.99	Motor Massacre.....14.35
Battlehawks 1942.....19.95	Artura.....7.99.....11.99	Neuromancer.....12.99	Neuromancer.....18.95
Black Tiger.....17.95	Barbarian II.....6.99.....9.99	Night Hunter.....7.99.....11.99	Operation Neptune.....17.95
Blastroids.....17.95	Batman.....6.99.....10.50	Night Raider.....7.99.....11.99	Operation Wolf.....16.45
Butcher Hill.....14.35	Black Tiger.....7.99.....11.99	Operation Wolf.....6.50.....10.50	Pacmania.....13.25
California Games.....17.95	Bombuzal.....6.99.....9.45	Operation Neptune.....7.25.....11.20	Pioneer Plague.....16.45
Captain Fizz.....11.20	Butcher Hill.....7.99.....11.99	President Is Missing.....7.25.....9.75	Populous.....19.95
Carrier Command.....16.45	Colossus Chess 4.....7.99.....11.99	Project Firestart.....12.99	Purple Saturn Day.....16.45
Colossus Chess X.....17.95	Corruption.....14.95	Project Stealth Fighter.....11.20.....14.95	Real Ghostbusters.....19.95
Cosmic Pirate.....17.95	Cosmic Pirate.....7.99.....11.99	Purple Saturn Day.....7.25.....11.20	Red Heat.....19.95
Crazy Cars II.....17.95	DNA Warrior.....7.25.....11.20	Real Ghostbusters.....7.99.....11.99	Renegade III.....19.95
Custodian.....14.95	Dark Fusion.....7.99.....11.99	Red Storm Rising.....11.20.....14.95	Robocop.....16.45
Cyberoid II.....14.95	Deathlord.....12.99	Renegade III.....7.99.....11.99	Rocket Ranger.....21.95
D.N.A Warrior.....14.35	Denaris.....7.99.....12.99	Robocop.....6.99.....10.50	Rocket Ranger.....19.95
Denaris.....19.95	Dragon Ninja.....6.99.....10.50	Rocket Ranger.....14.95	Running Man.....19.95
Double Dragon.....16.45	Dynamic Duo.....7.25.....9.99	Run The Gauntlet.....7.99.....11.99	Run The Gauntlet.....19.95
Dragon Ninja.....16.45	Emlyn Hughes Int Soccer.....7.25.....11.20	Samurai Warrior.....6.55.....11.20	Shoot Em Up Const Set.....16.45
Dragon Scape.....14.95	Final Frontier.....9.99.....14.99	Savage.....6.99.....10.50	Speedball.....16.45
Dragon Slayer.....24.95	Firezone.....9.99.....14.99	Silent Service.....7.25.....11.20	Starglider II.....16.45
Dream Zone.....17.95	Fish.....14.99	Skateball.....7.99.....11.99	Super Hang On.....17.95
Elite.....16.45	Flight Simulator II.....19.95.....28.95	Storm Lord.....7.99.....11.99	Sword of Sodan.....19.95
F.O.F.T.....24.95	Football Director.....6.55	Techno Cop.....7.99.....11.99	Techno Cop.....14.35
F16 Falcon.....20.95	Football Manager II.....6.99.....10.50	The Deep.....7.99.....11.99	Teenage Queen.....14.95
Fish.....16.45	Football Man II Exp. Kit.....6.55.....7.99	Thunderblade.....7.99.....11.99	The Deep.....17.95
Football Director II.....13.25	Game Set & Match II.....9.00.....13.50	Tiger Road.....7.99.....11.99	The Kristal.....21.95
Football Man II Exp. Kit.....9.99	Gary Lineker Hot shot.....7.99.....11.99	Times Of Lore.....7.25.....11.20	Thunderblade.....17.95
Gauntlet II.....17.95	Grand Prix Circuit.....7.99.....11.99	Titan.....7.25.....11.20	Tiger Road.....14.35
Guerilla War.....16.45	Guerilla War.....6.99.....10.50	Tracksuit Manager.....7.25	Times Of Lore.....17.95
H.K.M.....17.95	Gunship.....11.20.....14.95	Tyger Tyger.....7.25.....9.45	Titan.....17.95
Heroes Of The Lance.....17.95	H.K.M.....7.99.....11.99	Ultima I or III or IV.....14.95	Track Suit Manager.....13.25
Hostages.....16.45	Hawkeye.....6.99.....9.45	Ultima V.....19.95	TV Sports Football.....21.95
Hybris.....17.95	Heroes Of The Lance.....17.95	Ultimate Golf.....7.99.....11.99	Ultimate Golf.....14.35
Incredible Shrink Sphere.....17.95	History In The Making.....19.99.....24.99	Vindicators.....7.99.....11.99	Universal Military Sim.....16.45
Interceptor.....17.95	Hostages.....7.25.....11.20	War In Middle Earth.....7.25.....14.99	Verminator.....17.95
International Karate +.....17.95	Incred Shrink Sphere.....7.25.....11.20	Wec Le Mans.....6.99.....10.50	Vindicators.....14.95
Joan Of Arc.....17.95	Ingrids Back.....11.20.....11.20	Weird Dreams.....11.20.....14.95	Wanted.....14.35
Kennedy Approach.....17.95	Kennedy Approach.....6.99.....10.50	Western Europe Scenery Disk.....14.95	War In Middle Earth.....17.95
Kenny Dagleish Manager.....14.95	Laser Squad.....6.55	Xenon.....7.25.....11.20	Wec Le Mans.....16.45
Laser Squad.....17.95	Last Ninja II.....9.75.....11.20	Zak McCracken.....11.99	Weird Dreams.....16.45
Last Duel.....14.95			Zak McCracken.....17.95
Leaderboard Birdie.....17.95			
Led Storm.....14.35			
	JOYSTICKS	JOYSTICKS	JOYSTICKS
	Cheetah 125 Plus.....6.99	Comp Pro 5000 Clear.....13.95	Speedking With Autofire.....11.99
	Cheetah Mach 1.....10.95	Comp Pro 5000 Extra.....10.95	Ram Delta.....7.99
	Comp Pro 5000.....12.95	Speedking.....10.99	Cruiser.....8.99
	C64/128 SOFTWARE		
	CASS DISK		



BLANK DISKS

SAME DAY DESPATCH WHERE POSSIBLE

3.5" DS/DD With Labels Only £9.95 Per Ten
5.25" DS/DD Disk With Labels Only £4.99 Per Ten
All prices include Post and Packing in UK.
Please make Cheques and Postal Orders Payable to
WORLDWIDE SOFTWARE

BLANK DISKS



ALL OFFERS AND PRICES SUBJECT TO CHANGE E & OE

Some weeks we get a little depressed by the general standard of releases and this is one of them. Only *Prison* did anything like the biz in terms of graphics and gameplay – the rest were... how can we say this... indifferent. *Journey to the Centre of the Earth* was lucky to get any stars at all, whilst we only covered *Hollywood Poker Pro* to warn you off it.

BLASTEROIDS

IMAGE WORKS/MIRRORSOFT

ST • £19.99dk
Also on Amiga, Spectrum, C64, CPC, MSX

Blasteroids is a game for more nostalgic gamers, as it's the coin-op conversion of the latest variant on the classic *Asteroids*.

● GAMEPLAY

Taking control of your three-form, transformable thruster craft, you must undergo a mission to blast every asteroid and alien craft out of the known Universe before your confrontation with its evil ruler, Mukor.

Control of your ship entails mastering rotational and thrusting manoeuvres – with wise use of your speeder/fighter/warrior craft capability being of the utmost importance. You can also give yourself a limited-time extra edge by collecting equipment released from destroyed alien craft – such as shields, boosters and cloaks.



• I think I'd sooner have asteroids

● GRAPHICS AND SOUND

The visuals are adequate but appear to have been crudely transferred from their arcade parent without due care and attention being given to enhancing them on the host ST.

Audio is split between an irritating, monotonous soundtrack and uninspiring sound spot-effects.

● OTHER VERSIONS

We haven't seen the other versions yet.

● EXPRESS VERDICT

It's not that *Blasteroids* is an inherently bad game – it's playable and quite addictive, if rather unoriginal and repetitive. It's just that we preferred playing a PD game called *Megaroids* – a game more closely resembling the original *Asteroids* – which was supplied free with our ST.

★ ★ ★

Rik Haynes

PRISON

KRYVALIS

Amiga £19.95dk
Also on ST

With sexy screens from the same artists that brought you *The Munsters*, *Prison* takes you off-world on a search for escape as you take on the role of Jag Edwards. Funny how no-one's called Ken or Barry in the 22nd century, isn't it?

● GAMEPLAY

You find yourself wandering around Altrax, a penal dumping ground for mass murderers stalked by aliens and rat-like stooges. If these were not enough, acid pools, bottomless trenches, spike pits, proximity mines and snare explosives make Altrax just a little more challenging than a stretch in The Scrubs.

Fortunately, there's the escape pod from some long lost star ship lying somewhere around and so the aim is to find various objects needed for survival, find the pod and split post haste, pal.



• Welcome to the torture dome, you're a long way from home

● GRAPHICS AND SOUND

Prison's graphics comprise richly detailed backdrops illustrating the run-down decay of Altrax. Sprite definition is superb and animation smooth. As day turns to night, the spectrum of colour darkens accordingly to highlight only the barest possible minimum of detail. Because of the number and variety of locations, the otherwise numbing search for artifacts is enlivened. Sound is confined to your footsteps and the groans of aliens as they hit the dust.

● OTHER VERSIONS

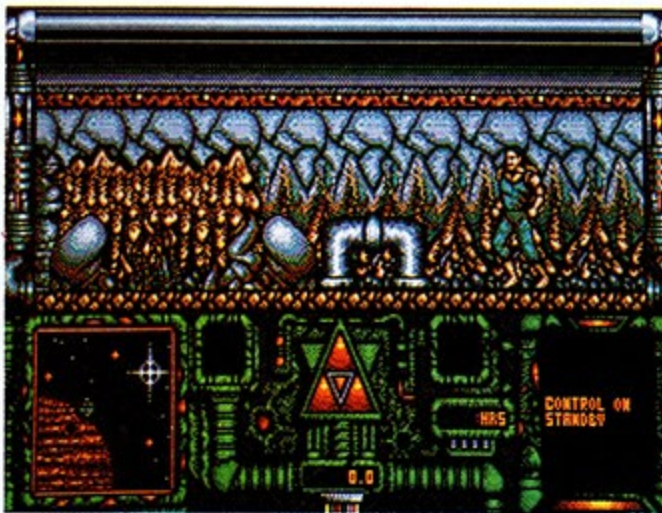
The ST version is identical in all departments to its Amiga cousin. There are both PC and Archimedes versions in the pipeline but *Prison* won't see the light of day on the 8-bits.

● EXPRESS VERDICT

A superior arcade adventure that provides the essential mix of good graphics and compelling gameplay, *Prison* is well worth a look. Can't wait to see the Archie version.

★ ★ ★ ★

Andy Storer



• Distinctive backdrops compound the sense of atmosphere

Each section of Altrax is inhabited by a different tribe of alien psycho-nutters whom you must take out with volleys of punches and kicks. There are a number of objects concealed around the place which you must

ROY OF THE ROVERS

GREMLIN

ST • £19.99dk
Also on Spectrum, C64, CPC



• Give that ball a kicking!

Comic strip soccer superno Roy of the Rovers makes it on to the ST for a kickabout adventure.

● GAMEPLAY

It's a game of two halves. You can play a standard side-view football match or a simple linear adventure involving Roy tracking down kidnapped team mates for a charity football match. And, er, that's it.

● GRAPHICS AND SOUND

Football games are always worth booting up just to hear what efforts have been made to emulate the noise of a football crowd. It is with some pleasure that I can report that Gremlin's Melchester crowd is wonderfully bad. Other than that, the sound is disappointingly normal.

Graphics are passable if a little lacklustre but lets face it, sprite details aren't paramount for a good footie game.

● OTHER VERSIONS

You can find Roy on most of the major formats. An Amiga version should arrive soon.

● EXPRESS VERDICT

Jaded and snoozesome. The football match is all too familiar, with players moving slowly and awkwardly. One gets the feeling that it will get better if you stick around, but the game really isn't enough fun to warrant spending much time grappling with a difficult opposition. Decent football games are few and far between. This isn't one of them.

★ ★

John McCleary

JOURNEY TO THE CENTRE OF THE EARTH

RAINBOW ARTS/US GOLD

PC • £19.99dk
Also on ST, Amiga, C64

This arcade adventure has you plunging deep into the bowels of the Earth in a search for fame and fortune.

● GAMEPLAY

US Gold has managed to put a new twist into graphic adventure games: It's made them even worse! You choose one of four possible characters (Erik Gunnarson, Francis Rutherford, Louis Bourdon or Antonio Rossi), to

After spending a day descending the 3000 foot deep SNEFFELS chimney, the expedition spends two days moving through a gallery of volcanic rock, when suddenly...



• After two days, something's about to happen...

be your on-screen alter-ego. After staying awake through falling boulders, you are rewarded with a screen of graphic (icon) options, to enable you to progress through the game (Amphetamine Sulphate wouldn't get you through this game...). After walking along a narrow passage, I was told that I had sprained my arm, with a "shooting pain up it...", I had a pain, but it wasn't in the arm. Spelling mistakes and lousy grammar abound. After choosing the character Eric Gunnarson you are told that he is a "sportman". Occasionally, and for no apparent reason, you are dumped back on the "dodge-the-boulders" screen.

● GRAPHICS AND SOUND

The opening screen is accompanied by a bit of digitised music that will have Finnish kids rocking in the aisles.. Graphics? Not bad (not good, for that matter).

● OTHER VERSIONS

Do you really want to know? OK, it's available for Commodore 64, Atari ST and Amiga.

● EXPRESS VERDICT

Lasting appeal of about two minutes.



Fielding Mellish

ROAD BLASTERS

US GOLD

ST £19.99dk

Also on Amiga, Spectrum, C64, CPC



• Road Blasters on Level One...

jerky pace, and both suffer from a severe lack of fine detail. Your car sprite is tolerable, but the control panel looks extremely bland.

The sound spot-effects perform well, with admirable representations of your car's blasting, accelerating and braking noises. This is unfortunately negated by the pathetic white noise soundtrack that accompanies them.

● OTHER VERSIONS

The 8-bit versions were just as dire as ST Road Blasters, with perhaps the C64 version being the worst. However, all 8-bit versions contain inadequate backdrops, sprites and audio. If you're still interested, you can buy 8-bit versions of Road Blasters on a new compilation pack called Arcade Muscle, which also includes Bionic Commandos, 1943, Side Arms and Streetfighter.

● EXPRESS VERDICT

Road Blasters is dull, repetitive and tiresome – even its coin-op parent wasn't that exciting. During play we were constantly reminded of the old Department of Transport's TV advert about

the hazards of falling asleep at the wheel – yeah, Road Blasters is that boring.



Rik Haynes

Road Blasters is a coin-op conversion of the Atari driving come shoot-'em-up sim.

● GAMEPLAY

Motoring down the highway in your turbonutterGWB68 2-door automobile, you'll have to avoid or blast stingers, command cars, spikers, gun turrets, cycles, rat jeeps, mines and toxic spills as you race towards the check and rally points – all before your fuel runs out.

Along the way you'll be able to pick up extra fuel globes and dock with the support jet to give yourself special weapons like Cruise missiles, Nitro Injectors, UZ Cannons and Electro Shields. Sorry, Go Faster Stripes are nowhere to be found...

● GRAPHICS AND SOUND

The backdrops and sprites move at a fast 'n'



• ...and, er, on Level Two

HOLLYWOOD POKER PRO

RELINE/DISTRIBUTED IN UK BY US ACTION

Amiga • £24.95dk
Out soon on ST

The last stripper we had in our offices was a French Teenage Queen. She left with 3 stars. Now it's the turn of the Germans to offer two-bit 16-bit entertainment for the prospective punter.

● GAMEPLAY

You choose to play stud (sic) poker against one of four women – starting with 100 credits each. You may bet on the hand dealt and on the hand left after you've dropped and drawn up to five cards. If your opponent's kitty goes below zero she offers an item of clothing. If she loses, you're presented with a digitised image of her with the item removed. Simple.

Each opponent has four stages of undress. There's no difference between the opponents in terms of actual poker play – each become more difficult to beat the less clothing they have on. The continual process of removing and replacing clothing is likely to make you more frustrated than you'd need to be to buy the game in the first place.



• Not a great deal needs saying, really

● GRAPHICS AND SOUND

Hollywood Poker Pro's 16 digitised images were recorded with a Panasonic video camera onto a JVC digital recorder and treated to Newtek's Digi-view package before being mixed into the screen layout using a ElectrDesign genlock. Indifferent stereo sound was mastered on Deluxe-Sound.

● EXPRESS VERDICT

Why, you may ask, do we bother reviewing this at all? Because, like all the others, it's crap. And this needs saying. Otherwise, it'll end up being another game selling on the dubious delights of packaging alone.



Andy Storer

FRIGHT NIGHT

THE ARCADE GAME

If you love being scared this'll be the game of your life! The explosive gameplay of Steve Bak coupled with the incredible graphics of Pete Lyon join together to make this arcade game adaptation of the hit RCA-COLUMBIA picture.

AVAILABLE NOW FOR YOUR
AMIGA AND SOON
ON YOUR ST
AMIGA £19.95



FRIGHT NIGHT

SCREEN SHOT FROM
ARCADE GAME



microdeal



FRIGHT NIGHT

SCREEN SHOT FROM
ARCADE GAME

COPYRIGHT: © 1988 COLUMBIA PICTURES INDUSTRIES, INC. ALL RIGHTS RESERVED

Summertime Special

Rik Haynes dons shorts and shades to preview six new games for summer

FORGOTTEN WORLDS

CAPCOM/US GOLD

Out in late spring on Spectrum, C64, CPC, ST, Amiga and PC, this horizontally-scrolling shoot-'em-up coin-op conversion throws you into a world of weird and mysterious scenery, battling against some seriously aggressive opponents. Luckily, you'll be able to buy yourself some extra weaponry along the way to balance things up.



RAMROD GREMLIN

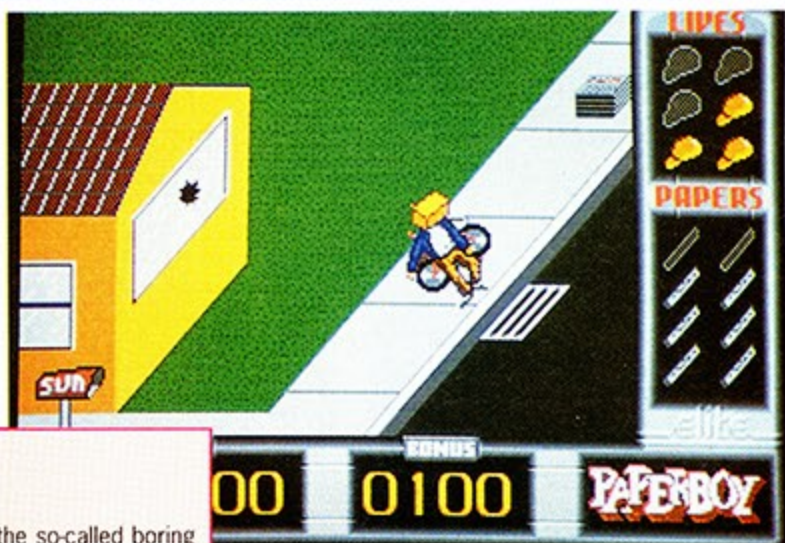
The long-awaited arcade adventure Ramrod should be launched in summer on ST and Amiga. Progress through four levels of vertically-scrolling "theme" landscapes drinking Pepsi, listening to CDs and playing arcade games.



PAPERBOY

CAPCOM/ELITE

Already a star of the 8-bits, arcades and TV shows - Paperboy is due out on ST, Amiga and PC in mid-summer. Riding on your BMX and doing your paper round, you'll have to avoid Sunday drivers, skateboarders and Sinclair C5s in your efforts to finish the round as soon as possible.



STARBLAZE

LOGOTRON

Starblaze will attempt to take out the so-called boring simulation elements from those other solid 3D epics, and replace them with pure mindless, adrenalin pumping, shoot-'em-up action when it arrives on ST and Amiga in early summer.



MIKE READ'S COMPUTER POP QUIZ

ELITE

What's Gary Numan's real name? Where did Propaganda come from? What was Depeche Mode's first single? Who "lives it up till the sun goes down"? What was New Order once called? If you can answer these pop trivia questions, then Mike Read's Computer Pop Quiz could be the game for you. Out in late spring on Spectrum, C64, CPC, ST, Amiga and PC.

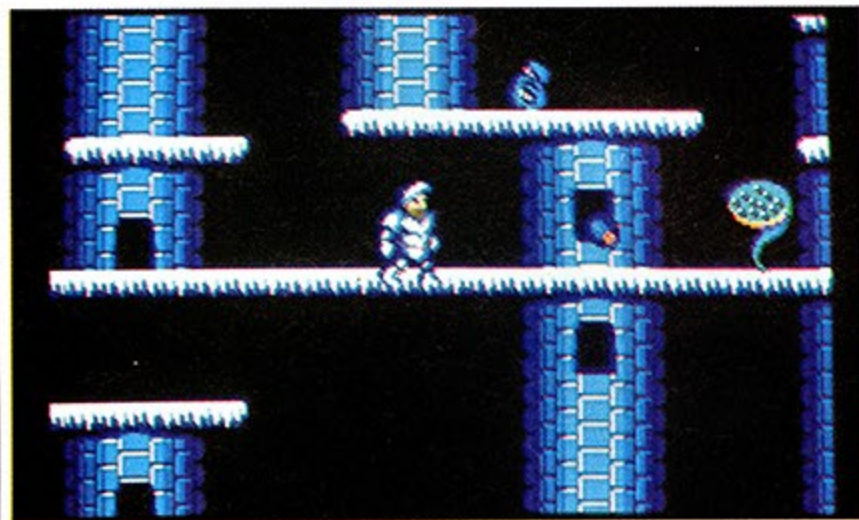


GHOSTS 'N' GOBLINS

CAPCOM/ELITE

ST and Amiga versions of this classic horizontally-scrolling arcade-adventuring platform exploration coin-op should be out in the summer. As a knight in shining

armour (until you're hit), you'll encounter zombies, Venus fly-traps and other unsavoury creatures in this fight for the right to knight.



**The
incredible
New
Computer
Express
voucher
scheme can
save you**

£10

**when you buy
from adverts
in this
magazine!**

Full details on next page

**EXPRESS
VOUCHER**

£1

**EXPRESS
VOUCHER**

£2

**EXPRESS
VOUCHER**

£3

**EXPRESS
VOUCHER**

£4

£1 voucher. Valid for orders above £20

This voucher may be used as £1.00 part payment on any order totalling over £20 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **April 24, 1989.**

£2 voucher. Valid for orders above £40

This voucher may be used as £2.00 part payment on any order totalling over £40 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **April 24, 1989.**

£3 voucher. Valid for orders above £60

This voucher may be used as £3.00 part payment on any order totalling over £60 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **April 24, 1989.**

£4 voucher. Valid for orders above £80

This voucher may be used as £4.00 part payment on any order totalling over £80 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **April 24, 1989.**

EXPRESS VOUCHERS

How the scheme works

- The Express voucher is a special scheme to encourage you to buy *New Computer Express* regularly.
- It offers you savings of up to £10 when you buy goods through the magazine.
- The vouchers are not limited to specific items – you can save on any purchase from one of the participating advertisers.
- Most mail order advertisers in this magazine are taking part in the scheme – just look for this sign. → 
- Remember. The use of just one voucher could more than recoup the price of the magazine.

THE FIVE SIMPLE RULES

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

BATH COMPUTER SHACK

YOU CAN'T AFFORD TO GO ELSEWHERE

*** ATARI SUPER PACK ***

Atari 520stfm, 1 meg drive, 22 games and a joystick	ONLY £349.00
Atari Explorer Pack	£279.00
Atari 1040stfm now with modulator	ONLY £419.00
Atari 1040stfm with SM124 high resolution mono monitor	ONLY £529.00
Atari Megafile 30 Hard Disc	£529.00
Atari SM124 High Res Monitor	£119.00
Atari SC1224 Colour Monitor	£279.00
Atari SLM802 Lazer Printer	£1049.00

ATARI MEGA'S AND PC'S

Please call for our very best prices,
you won't be disappointed.

E.G. Atari Mega 2 Mono	£899.00
Atari PC 3 DDMM	£639.00

MONITORS

Philips CM8833	£259.00
Philips CM8852	£299.00

* NB: All prices include lead.

PRINTERS

Citizen 120D	£159.00
Panasonic KXP1081	£175.00
Epson LX800	£199.00
Star LC10 (with spare ribbon)	£215.00
Star LC10 colour	£265.00
Star LC24/10	£339.00
Star NB24-15 (free sheetfeeder)	£599.00

* NB: All above prices include lead.

ACCESSORIES

Handycap Keyboard Cover	£7.95
Monitor Stand	£24.95
Mouse Mats	£4.50
Monitor Master (ST Only)	£35.00
Mouse Master (ST & Amiga)	£24.95

COMMODORE

Amiga 500	£369.00
Amiga 500, Icon paint, 5 games	£389.00
Amiga 500, Icon paint, 2 games, 1084 Colour Stereo Monitor	£619.00
Amiga 500, Icon paint, 2 games modulator	£399.00
Amiga 500, Icon Paint, modulator	£389.00
Commodore 1084 Colour Stereo Monitor	£259.00

COMMODORE PC'S

PC10 SDMM	£573.85
PC10 DDMM	£679.00
PC 20 HDECD	£1259.00

AMSTRAD SPECIAL OFFER

Amstrad PC 1640 DD Mono	£669.00
Amstrad PC 1512 SD Mono + DMP 3160	£539.00
Amstrad PC 1512 DD Mono + DMP 3160	£649.00
Amstrad PC 1512 DD Colour + DMP 3160	£725.00

All other models available, please call for
our very best prices.

Amstrad PPC512S	£429.00
Amstrad PPC512D	£549.00
Amstrad PPC640S	£549.00
Amstrad PPC640D	£629.00

DISCS & BOXES

At UNBEATABLE Prices

10 x 3.5" DS DD Discs in Box	£9.95
25 x 3.5" DS DD Discs in Box	£25.00
25 x 5.25" Discs	£8.50
100 x 5.25" Discs	£29.95
Above Discs Certified & Guaranteed	
40 Cap 3.5" Lockable Box	£4.99
80 Cap 3.5" Lockable Box	£7.99
100 Cap 3.5" Lockable Box	£9.99

Orders under £50.00 - add £2.50 P & P

All prices include VAT
All Hardware is sent by next day courier F.O.C.



Access & Visa orders welcome.
Mail Order address below.

E&OE

SHOW ROOM
8E Chelsea Road
Lower Weston
Bath
Avon
BA1 3DU

TEL: (0225) 310300 FAX: (0225) 446827

MAIL ORDER
8E, Chelsea Road
Lower Weston
Bath
Avon
BA1 3DU

TEL:(0225) 310463 FAX: (0225) 446827

Czech mate

Such is the fame and success of Future Publishing, which produces *New Computer Express*, *ACE*, *PC Plus*, *8000 Plus*, *Amstrad Action* and *ST Amiga Format*, that other computer magazines the world over want to know how we do it. For example, *Elektronika* – the big computer monthly in Czechoslovakia – did a feature on us in January, marvelling at how we use Apple Macs and desktop publishing to put together our various publications.

The conclusion they reached was *Protože Desktop Publishing je vydavatelství na vašem stole a stojí za to*. And I really don't think anyone would



argue with that.

Sources tell us that the Spectrum is still king of the micros there, Prague is

the most beautiful city in Europe, and the beer – as you'd expect in the home of Pils – is the best in the world.

V dalším patře jsem nebyl, ale prý tam má pracovnu sám šéfredaktor vydavatelství Future Publishing.

Šok číslo 3

NEXT WEEK

Hard disks

Express reveals the best value for your machine

History of the MSX

The MSX was going to turn the computing world upside down. So what happened?

Video titlers

Turn your home videos into professional films

Desktop publishing

How magazine production has been revolutionised

PLUS

Another red-hot vindaloo of letters, reviews, beginners' sections, features, jobs, tips, games... and the very latest in news and comment on the current computer scene

On sale
Thursday
April 6th

Only
48p!

Order yours
now!

Classified information

Want to sell your hardware or original software?

Upgraded recently and no longer need some products?

Want to publicise your user group?

Need to promote your bulletin board?

Then *New Computer Express* classified ads section is simply the best place.

From issue 23 (cover date April 15th), we are starting a new service just for you.

- It will offer the best prices and bargains
- It will reach the most active part of the

UK computer market

- It will be the most cost effective way of selling your goods and services

For a strictly limited period, adverts up to 20 words will be FREE. Yes, that's right – absolutely free! But watch out: we'll soon be introducing a nominal charge for your classified ads.

Send off the form today and your ad will appear in the next available issue of *New Computer Express*.

Please make cheques/postal orders payable to Future Publishing and send them to *New Computer Express Classifieds*, 4 Queen Street, Bath BA1 1EJ.

Express 21 Classifieds form

One space equals one word. For the free introductory offer, all adverts must be no longer than 20 words.

Name

Address

..... Tel:

Please note:

1. *New Computer Express* will not accept responsibility for any minor typographical errors which do not materially affect the meaning of the adverts.
2. We cannot vouch for the quality of goods and/or services advertised in this section. All ads are accepted in good faith.
3. We reserve the right to amend or even refuse ads at our discretion.
4. No pirated software may be sold through these columns. Any readers being offered non-originals should contact us.
5. We cannot guarantee that adverts will appear in a specific issue of *New Computer Express*.
6. The following declaration must be signed:

I have read and understood the terms for the inclusion of my ad.

Signed

520ST-FM SUPER PACK



**1Mb DISK DRIVE
£450 OF SOFTWARE**

ARCADE GAMES

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

SPORTS SIMULATIONS

Eddie Edwards Super Ski	Elite	£19.95
Seconds Out	Tynesoft	£19.95
Summer Olympiad '88	Tynesoft	£19.95

PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	£49.95
-----------	---------------------	--------

JOYSTICK

Atari CX40 Joystick	Atari Corp	£4.99
---------------------	------------	-------

FREE ATARI BUNDLE VALUE: £458.97

£399
INCLUDING VAT

With SM124 mono monitor: £498 INC VAT With SC1224 colour monitor: £698 INC VAT

1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), FREE OF CHARGE. Return the coupon for further information.



£499
INCLUDING VAT

With SM124 mono monitor: £598 INC VAT
With SC1224 colour monitor: £798 INC VAT

ATARI 1040ST-FM	(Computer)	£499.99
VIP PROFESSIONAL	(Spreadsheet)	£149.95
MICROSOFT WRITE	(Word Processor)	£149.95
SUPERBASE PERSONAL	(Database)	£59.95
BASIC DISK & MANUAL	(Language)	£24.98

**NORMAL RRP: £884.82
LESS DISCOUNT: -£385.82**

PROFESSIONAL PACK PRICE: £499.00

2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both FREE OF CHARGE. Return the coupon for further details.



2Mb MEGA ST
£899 INC VAT
+ mono monitor = £998
+ colour monitor = £1198

4Mb MEGA ST
£1199 INC VAT
+ mono monitor = £1298
+ colour monitor = £1498

DTP PageStream £149 +VAT = £171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT-£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180A1 printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- TEXT-FLOW AROUND GRAPHICS
- ROTATION OF TEXT & GRAPHICS
- SLANT OR TWIST ANY OBJECT
- POSTSCRIPT COMPATIBLE
- TAG FUNCTION
- AUTO/MANUAL KERNING & HYPHENATION
- GROUPING OF OBJECTS

ATARI ST ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. £80E

520ST-FM EXPLORER PACK WITH BUILT-IN 1Mb DISK DRIVE



The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260 ONLY £2.51 PER WEEK RETURN COUPON FOR DETAILS
+ VAT = £299

+ SM124 mono monitor: £398 INC VAT + SC1224 colour monitor: £598 INC VAT

WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

SILICA STARTER KIT: Worth over £200, FREE with every Atari ST computer bought from Silica.

PROFESSIONAL PACK: Free business software with 1040ST-FM and MEGA ST's bought from Silica.

DEDICATED SERVICING: 7 full-time Atari trained staff with years of experience on Atari servicing.

THE FULL STOCK RANGE: All of your Atari requirements from one place.

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

FREE CATALOGUES: Mailed direct to your home as soon as we print them, featuring offers as well as all of the new releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped within the UK mainland.

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

FREE TECHNICAL HELPLINE: Full time team of Atari technical experts always at your service.

FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS
ALL PRICES QUOTED INCLUDE FREE UK DELIVERY

DO YOU OWN AN ATARI ST?

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

SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

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

To: Silica Shop Ltd, Dept NCE 03 89, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
PLEASE SEND FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: Initials: Surname:

Address:

.....

.....

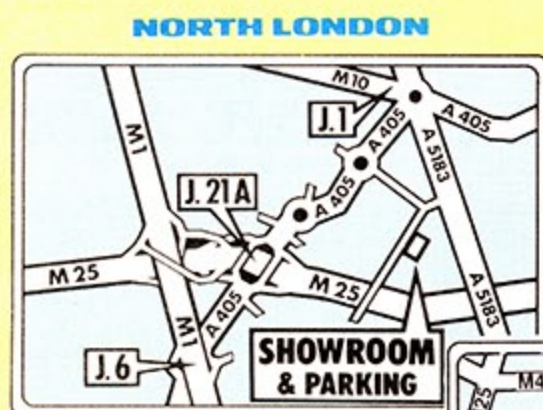
Postcode: Dept NCE 03 89,

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

DTP

Where do you buy a copy of Word Perfect 5 for £211 at 3.45 on Saturday afternoon?

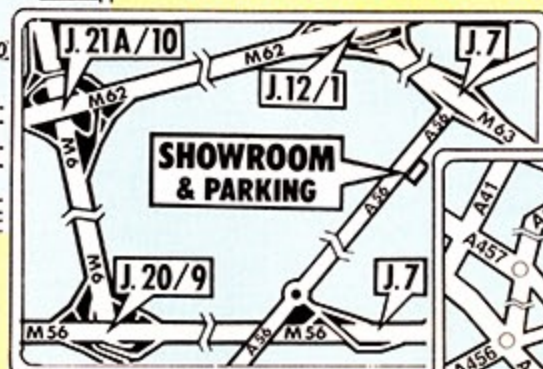
COMPUTER EXPRESS



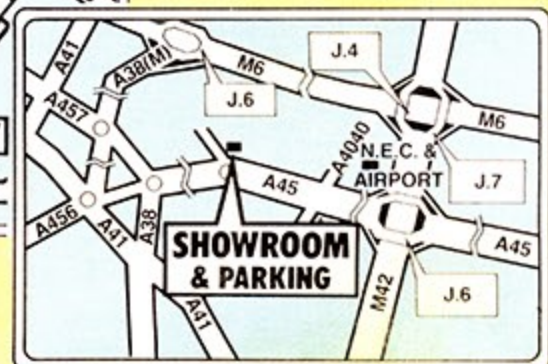
99 Park Street Lane,
BRICKET WOOD,
St Albans, Herts AL2 2JA.
(0727) 72790



304 Kingshill Ave,
(off Uxbridge Road)
HAYES, Middlesex.
01-841 8744



85 Washway Road (A56),
(opposite IBM)
SALE, MANCHESTER M33 1TQ.
061-962 0780



1046 Coventry Road (A45),
HAYMILLS, BIRMINGHAM B25 8DP
021-772 5212

SHOWROOM OPENING HOURS:

Monday-Friday 9am-6pm

Saturday 10am-5pm

WORD PERFECT (VERSION 5)

Its NEW, but it works just like the previous popular Version 4.2. Many new features like Desk Top Publishing functions, and even more print fonts. Word Perfect is again asserting why it is the most popular WP package on the market £211

not to mention all this popular software....

DESK TOP PUBLISHING

Xerox Ventura DTP Version 2 - Best In Its Class	£479
Fleet Street Editor - Watch Out Murdoch Here We Come	£109
PageMaker 3 - The Aldus Claimed Market Leader	£438
PagePerfect - Colour DTP Without A Mouse	£345
Timeworks DTP - Celebrated Ventura Clone!	£89
GEM Artline - Create Masterpieces on your PC	£435

SPREADSHEETS

Borland Quattro - Low Cost 1-2-3 Work Alike!	£189
Lotus 1-2-3 - Top Selling Package In The World	£245
Microsoft Excel - Unbeatable for Graphics	£229
Supercalc Version 5 - New Improved Lotus-Beater!	£197
VP Planner Plus - Multi-dimensional Database	£110

INTEGRATED PACKAGES

Framework III - The Ashton-Tate Gets It Together	£329
Lotus Symphony version 2 - Number 2 Best Seller	£349
Migent Ability Plus - The World-Famous Cheap Package	£129
Smart System - The Best Integrated Package	£358
Smart Spelling Checker - A Must For Smart Users	£79

DATABASES

Ashton-Tate Rapid File - The Co-Resident Database	£189
Borland Paradox 3.0 - The Latest Multi-User Database!	£385
Borland Paradox 2.0 - We Still Have Stocks Of This Goody	£269
Cardbox Plus V4 - Works Just Like Index Cards	£225
Clipper - Superfast Compiler For dBaseIV	£399
DataEase - Applications Galore!	£499
dBase IV - Top Selling Professional Database	£344
FoxBase Plus - Famous dBase III - Rip-off!	£249
Superbase 4 - Now with Free Mouse Works Under Windows	£345
Superbase Professional - More Than Your Normal Database	£259

GRAPHICS

Freelance Plus - Limited Only by Your Own Creativity	£255
Harvard Graphics - The Package the Professionals Use	£236
Graphwriter II - Ideal for Regular Fast Graph Production	£269
PC Painter Plus - Move Over Michelangelo	£99
Storyboard Plus - Liven up your Presentations	£199
VP Graphics - Cheap and Effective	£64

WORD PROCESSING

Borland Sprint - The Critics Rave About This Package	£128
Lotus Manuscript II - All Singing, All Dancing WP	£249
Lotus Agenda - Manages Your Words Professionally	£209
Microsoft Word 5 - Number 2 WP Package	£239
Microsoft Works - It Works Despite Our Low Price	£98
Multimate Advantage II	£254
PFS First Choice - Good and Cheap	£99
PFS Professional Write	£119
Sage PC Write	£71
WordStar 2000 Plus release 3 - The New Winner!	£214
WordStar 3.4 - The Classic from MicroPro	£149
WordStar Professional Version 5	£199
Word Perfect ver 5 - The New Number One Word Processor!	£211
Word Perfect Library - The Word Perfect Front End	£99
Word Perfect Executive - For the Exec on the Go	£129
Displaywrite 4 incl UK Dictionary - IBM's WP	£279

*All prices exclude VAT and delivery

We're there because you're there.

FOR FULL PRICE PLEASE CALL
EXPORT & TRADE ENQUIRIES WELCOME
TELEPHONE & MAIL ORDERS WELCOME



CALL **0727 37451**



OVER 2,800 ITEMS AVAILABLE
ON-SITE MAINTENANCE CONTRACTS
CREDIT CARDS NOT DEBITED UNTIL DESPATCH

Sales, Computer Express Ltd., Caxton Centre, Porters Wood, St Albans, Herts AL3 6XT
OPENING IN 1989: LEEDS, NEWCASTLE, GLASGOW, BRISTOL & SOUTH LONDON