

Only  
48p!

# **COMPUTER** **EXPRESS**

First news, best buys - every week • Issue 26 • 6 May 1989

# MAY 6th 1999

## WHAT WILL YOU BE DOING?

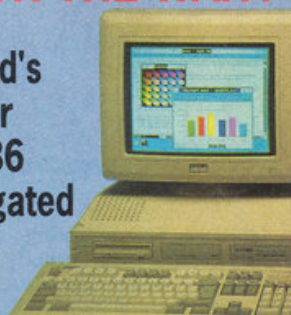


The astonishing future  
of computing  
starts on page 15

### WORTH THE WAIT?

Amstrad's  
peculiar  
PC 2286  
investigated

page 28



Start a bulletin board for

## £40

page 19

### JUST FOR KICKS



International  
Karate boots  
up on the PC

page 48

### DIY games

Easy as ABC on the ST page 8

### COMPUTING

# A > Z

Part 3 page 25

PC • C64 • Amiga • Atari ST • Spectrum • CPC • PCW • QL • BBC • MSX SECTIONS FOR YOUR MACHINE



# BULLETIN BOARDS TO MUG NICHOLSON HACKING BILL

Furious bulletin board owners throughout the country have joined forces to present a united front against the forthcoming anti-hacking Bill.

Some 350 boards are teaming up to form a new organisation called the Modem User Group (MUG). The body will call on Tory MP Emma Nicholson to demand why she seeks to take drastic measures against hackers

(Express 25) and how her plans will affect bulletin boards.

All are worried that the bill may affect their boards - some of which have been established for ten years. MUG reckons it will be representing around 5,000 home modem users who regularly log on.

They are concerned that Nicholson plans to "come down heavily" on small bulletin boards in an effort to flush out hackers. This has been denied by Nicholson who says she has no intention of making computing more expensive for honest owners.

Even so, a nationwide network of bulletin boards was buzzing last

week as organisers attempted to rally up support. Once fully operational they plan to make their angst public through the national press. MUG is also hoping to raise some support from modem manufacturers.

Organiser Noel Bradford of the Embassy Bulletin Board told Express: "The bulletin board fraternity is really getting organised. I've never known anything like it. Everyone wants to talk to us."

"We can't just sit back and let it all happen. We want to meet Emma Nicholson and find out what she's up to. I'm not sure how far she wants to go."

Although many of the members are "one man in his bedroom" affairs

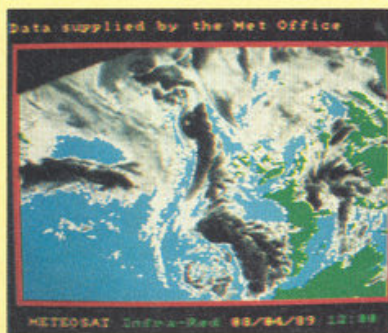


● Nicholson: Under fire

MUG hopes there will be strength in numbers. Whilst many have some sympathy with the notion of cracking down on dangerous hackers they want to distance themselves from the Bill.

If it fails MUG will have to wait until the Queen's Speech in the autumn to hear what is being proposed. And that will only be if Nicholson's Private Members Bill is taken on by the Government.

## Amiga Weathers the storm



● Forecast: Tapping into the Met

Amiga owners can now receive weather satellite pictures beamed down from space with the new Teletext Adaptor from MicroText.

The pictures originate from satellites with built in cameras orbiting around the world above the equator. The Met office's super computers receive and process the pictures so they look as if they were taken from above Britain.

Although the pictures are transmitted via Ceefax they cannot be received without a computer adaptor and relevant software. The £125 adaptor can enable users to tap into the regularly updated pictures. Downloading is free. More from Microtext on 0705 595694.

## Ocean Hit Squad: Collect the set

Ocean's long awaited line up of budget games are to be released three at a time, every month, with the firm hoping that gamers will try and make up a complete set.

Every month a £2.99 game based on a film or TV licence, a coin-op conversion and a sports game will be released. It is understood that the first three out on the Hit Squad label will be *Rambo*,

*Enduro Racer* and *Daley Thompson*.

No date has been agreed yet as to when to unleash its hits although it is thought the scheme will begin before September.

The idea is to make sure no two similar games are launched together. Ocean is pondering offering tokens with the games. When gamers have collected enough they will be

offered a cheap rack to store the titles.

One insider told Express: "We think it would be a good idea for people to collect the games. That done though they'll want something to put them in. It will be a complete collection of a variety of hits." All the details are yet to be finalised. As such Ocean is preferring not to comment on the matter.





# 'GIVE US YOUR OLD SOFTWARE AND SAVE THE STARVING'

International charity organisation Oxfam is to launch another appeal aimed at home computer users with the hope of raising money for the starving and needy.

The body wants users to bring their old software into local Oxfam stores. They will then be sent down to London to be sold through

special centres. Oxfam's sale of all the software will take place throughout June and July.

"By donating your old software to our shops we can resell them and raise substantial amounts of money to help people suffering from hunger, disease, homelessness and extreme poverty around the world,"

explained Oxfam's Richard English.

"We're particularly interested in games and home computing software that people no longer need for whichever type of machine."

In the past Oxfam has ventured into home computing with charitable appeals. Gamers have always proved themselves to be a generous lot raising money for the starving, drug addicts and Save the Children in the past through auctions at shows and compilations.

Oxfam is constantly working on emergency relief and long term projects in Africa, Asia, Latin America and the Middle East. The body wouldn't say how much it hopes to raise although it urged gamers to bring their old goodies into one of the 900 shops around the country.



## HEAD CASES

Alleged faulty problems with the Commodore C64's datacorder have prompted Palan to launch an adjustable loader of its own. Palan says the main problem with loading is variable head alignment. Because people are having difficulty loading games they think the machine is faulty.

Load-It features a small knob which will align the head properly using a flashing LED. It costs £40.

## Radio days

Liverpudlian actress and Letter to Brezhnev star Alexandra Pigg is to give people advice on how to access personal computer data in a series of radio ads. The former Brookside will be telling listeners how to make use of the Data Protection Act in order to find out what info the authorities have stashed away.

## SIR CLIVE: My high tech vision

High-tech boffin Sir Clive Sinclair has taken a short break from inventing and manufacturing computers to make dramatic science fiction predictions about Britain tomorrow.

He has turned his attentions to the dreadful traffic problem clogging up our roads. His solution is to build a network of computerised motorways which would eradicate the need to drive. In a report entitled *Traffic in the City*, Sinclair predicted that motorists would simply drive

onto the motorway and go into full auto pilot. Drivers could sit back as their cars whizz along at 100mph - keeping a standard but short distance from other vehicles.

Sir Clive admitted that it would be "very costly" but he poited out the need for far reaching changes. Previous achievements include the Spectrum micro, Z88 and, of course, the doomed Sinclair C5 electric tricycle.

• Sir Clive: Computerise our roads

## As easy as ABC

An ultra low cost clone of mega selling spreadsheet Lotus 1-2-3 has been launched by Trius Software.

Costing only £35 As-Easy-As is claimed to be a doddle for anyone who is familiar with 1-2-3. Worksheets can be set up stretching 248 rows by 256 columns. It can also be configured to handle 3D worksheets.

All the necessary mathematical gadgetry has been bunged in. Lotus 1-2-3 itself weighs in at a hefty £395.

As-Easy-As can be obtained from Shareware Marketing on 0297 24088.



## CONTENTS

### FEATURES

#### STOS ADD-ONS

Can you write your own game and beat the professionals? **8**

#### 1999

What's the shape of the computer to come? See the future with Express **15**

#### DIY BBS

A complete bulletin board starter kit for £40 **19**

#### A-Z PART 3

C is for... well, C **25**

#### PC2286

Amstrad's new up-market PC reviewed **28**

### REGULARS

EXPRESS COMMENT **4**

CHARTS **5**

LETTERS **11**

BEGINNERS **21**

JOBS **30-31**

TECH TIPS **43**

#### GAME PREVIEWS

Legend, Future Sport, Altered Beast, Battlechess, Tail Gunner, Tangled Tales, Fire King **47**

#### GAMES

Total Eclipse II, Beam, International Karate, The Duel/ Test Drive II, Lombard RAC Rally, Tom & Jerry **48, 50**

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

### CHARITY BEGINS WITH HOME COMPUTERS

Oxfam's scheme to recycle some of our investments in home computing into the Third World is not the first charity scheme involving home computer users.

In 1985, SoftAid - the first ever games compilation - raised a third of a million pounds for Famine Relief. In 1986, the anti-drugs campaign Off the Hook got £70 000 from another compilation. The NSPCC received approaching £50 000 the next year, and the current industry charity, the National Autistic Society, will benefit from a similar venture some time this year.

In addition, various industry figures regularly organise one-off charity events, the sort done by schools, clubs and societies up and down the country.

Home computing is still shaking off its trivial image of games machines and shoot-em-ups; but as using a computer becomes more and more legitimate a leisure pursuit, it is nice to know that micro owners are also contributing to good causes, and that the industry is gaining an ever more responsible and worthy image.

### BUT STILL A BARGAIN

Having got you into a mood to give more money, a note about our new cover price. With inflation at 8%, paper and production costs are rising all the time, and we're having to up the price of Express from next week. At 58p it still represents the best computer magazine bargain around, and to compensate for the rise we'll be packing it with even more news, reviews and features.

EDITOR.....Rob Ainsley  
NEWS EDITOR.....Colin Campbell  
FEATURES EDITOR.....Andy Storer  
REVIEWS EDITOR.....Rik Haynes  
TECHNICAL EDITOR.....Jerry Glenwright  
ART EDITOR.....Angela Neal  
ART ASSISTANT.....Harriet Athay  
PRODUCTION EDITOR.....Rod Lawton  
ADVERTISEMENT MANAGER.....Mark Salmon  
DEPUTY AD MANAGER.....Jennie Evans  
AD EXECUTIVES.....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  
Distributed by Comag, West Drayton, Middx

# BITS AND BITES

A new software house called Screen 7 has been launched by Software communications, with a line up of games promised for June.

First up will be a licence of blockbusting 70's shark movie Jaws on all major formats. All the firm's games will be programmed by Irish team Emerald and Portsmouth based Intelligent Design - both part of Software Communications.

Last month Communications closed down its seven year old label Martech (Express 24) with promises of a new label in the near future.

Boss David Martin has handed



• JAWS: Software Communications bites back

over the boring job of distributing and selling games to Pontefract based A1. He wants to spend more time on the creative side.

"The actual development of games is where our strengths lie. Nowadays, if you want to release a top quality game you have to spend a lot of time with it. You can only do so much. We are going to be really paying attention to detail," said Martin.

On why he has replaced Martech with a new label he said: Martech was launched in 1982 and it did a lot of good things and a few not so good things. We've learnt a lot from that and you will see it in the new

## We'll cross that bridge...

Upmarket gamers are being pitched with a new Bridge program from CP Software.

Bridge Player Galactica contains a 100 hand tutor devised by world champ Nicola Gardener as well as play options. "We get orders from Lieutenant Colonels, reverends and the like," said CP's Chris Whittington. "It's an upmarket piece of software," he claimed.

## Cheap modem waits on official approval

A new modem is being offered at a special price while it awaits BABT approval.

Hi-Tec's EC2400 covers all four worldwide speeds as well as data compression techniques which, it is claimed, can pump the speed up to 4800 bps (bits per second). The EC2400 is currently being sold at £279 but Hi-Tec says that will rise to £399 whilst BABT approval is processed.

To achieve official recognition modem manufacturers have to submit new products to British Telecom's board of approval. This process can take some time and is costly. More on 01 959 6808.



• EC2400: Official go ahead will ramp up price

## English as a computer language

A new text retrieval system which can understand plain English has been developed by a British firm.

STATUS/IQ doesn't require any pre-determined language - just normal English. For instance, instead of tapping in Q: Cats, Dogs: No Rabbits users can put in "Tell me everything about cats and dogs but I'm not interested in rabbits."

The system will then search its memory for every mention of cats and dogs and will also search for feline, puppy, pussy, Doberman etc.

The secret of the system is that it can pick out relevant words put to it in



• Status: English as she is spoke...

question form. It can also understand what info is of the most importance.

However, Harwell Computer Power's

breakthrough is currently only available for minis and mainframes. A high end PC version is planned for the future.

## Industry wants YOU

Good news for anyone planning to turn their computer knowledge into a lucrative career - industry is crying out for skilled computer operators.

In a recent survey 40 per cent of companies forecast that recruitment of skilled computer users and information technology staff would be difficult over the next five years.

The firms are all worried about the lack of staff - more than 80 per cent said networking and communications specialists are the hardest to get. Many are having big problems recruiting programmers and software engineers.

All this is bad news for the business fraternity but rather better for computer literates who want to turn their hobby into juicy wage packets.

## It's all in the Mindscape...

Weird US publisher Software Toolworks will be making a fully fledged appearance in the UK thanks to Mindscape.

The newly set up Mindscape camp will be selling Toolworks' high profile games here including ChessMaster 2000. That was formerly handled by Electronic Arts although a disagreement over pricing policy caused the change around. Also promised is the follow up ChessMaster 2100.

Mindscape will also be bringing in Toolworks strange surgery simulation Life and Death as well as a range of handy business gadgets such as spreadsheet add-ons.

"They're enormously successful in the States although they're very strange. They make a phenomenal amount of money," drooled Mindscape UK boss Geoff Heath.



## QUATERDECK OPENS WINDOWS PATENT

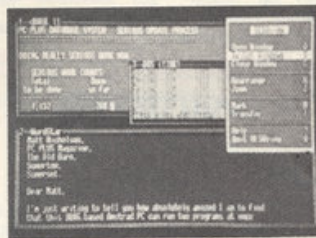
Californian PC software publisher Quarterdeck has secured a patent which could give the firm power to call the shots over any windowing programs running DOS.

The patent was applied for five years ago and has only just been granted. Lawyers and industry veterans are poring over the legal details at the moment to see how much clout the patent gives Quarterdeck.

The patent itself is entitled: "An improved display system and memory architecture and method for displaying images in windows on a video display."

In other words the patent covers off the shelf applications programs to run windows on a computer display. Quarterdeck is looking at the possibility of gaining royalties from rival publishers who release programs fitting that bill.

"Our vision was to give PC owners the ability to run multiple DOS



• Merry Window: DESQview is Quarterdeck's flagship patent bearer

programs in windows," said Quarterdeck's president Theresa Myers. "But because of the way popular software packages were designed we had to invent a new method for displaying them concurrently in windows without having to change the software."

Quarterdeck is best known for its DESQview windowing DOS manager.

## From Dorset with love

A twelve strong group of Russian kids has just completed a special "computer exchange" trip to Canford School in Dorset.

The 13-17 year olds spent two hours a day working with BBC Bs, Archimedes and Apple Macs. Whilst the British youngsters were ordinary

computer students the Soviet schoolkids spend much of their time learning to use micros having been specially picked.

"I think they really enjoyed using the Archies and Macs but were a little bemused by the BBC Bs," commented teacher Martin Muir. "We all worked on various applications such

as setting up a comms link with another school in Russia."

The British kids have already had visited Georgia in the Soviet Union. The school, situated near Wimborne, is planning a repeat in the next couple of years.

## Datel picks up peripherals duo

Datel Electronics has taken over the DKTronics and Ram Electronics line up of products.

Both companies are best known for peripherals such as MIDI interfaces and joysticks. Datel reckons that whilst many of the lines have been in short supply recently, it will attempt to push them through into the

mainstream.

All will be available in computer stores and through mail order. Both DKTronics and Ram are well known in the micro add-ons field - their heyday was in the 8-bit boom of the mid-eighties. Ram had taken over DKTronics last year. More on 0782 744707.

# JUST THE TICKET: Gold's games bus

A double decker bus carrying the latest in US Gold games is to tour the UK during the summer.

Gold says it wants gamers throughout the country to see what's going to be on offer during the autumn. In promotional terms it gives Gold the chance to access parts of the country missed by major southern computer shows.

Computer owners who can't afford to travel down to London will be given the opportunity of trying out

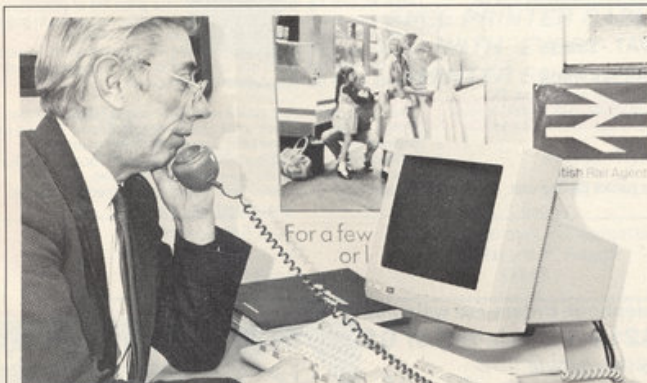
games and seeing preview videos. Gold's biggies for this year will include *Indiana Jones' Last Crusade*, *Moonwalker* and a selection of coin-op conversions.

The bus will be parking in Boys Club Centres in cities such as Liverpool, Manchester, Leeds, Newcastle and Edinburgh. Gold has worked with the Boys Club organising various competitions in the past.

"We want to look at all the

alternatives. The thing about events like the PC Show is that they attract a huge following from the South East but fewer from the North. Those areas are very important to us," said Gold's boss Geoff Brown.

Brown is currently taking a close look at the PC Show - some are suggesting that the firm will pull out this year. Gold is currently negotiating with show organiser Montbuild. We haven't decided yet," said Brown.



This guy is one of 3,000 British Rail workers who spends his working days tapping away to a British PC - Opus no less. The manufacturer is as pleased as punch having flogged 3,000 of its machines to the National rail system. Many are used for simple word processing and pay-roll jobs. 600 are used to develop BR's telephone enquiries and customer service systems, Opus tells us. Not, one would have thought, something to be terribly proud of.

## Flicker free portables promised

Complaints that portable computer screens offer poor resolution could begin to thin out if an American firm achieves its aims.

Chips and Technologies has developed a screen controller which can offer flicker free portable resolution. It is claimed to be the "missing link between the VGA graphics standard and 640 by 840 resolution flat panels".

Already portable prototypes utilising the 82C45 VGA Flat Panel have been shown off by IBM, Compaq, Sharp, NEC and Toshiba. The controller can drive all the main screen standards including LCD and gas plasma.

## US latches onto solid 3D

The Americans are catching on to the appeal of solid 3D games, claims leading US publisher Cinemaware

That firm, famous for its "interactive movie" style games has taken on UK development house Incentive. American gamers are to be treated to such games as *Dark Side* and *Total Eclipse* via the deal.

"Solid 3D is getting really big here in the States, the reception for such as *Total Eclipse* is phenomenal," said Cinemaware's Sam Poole.

Incentive, a small software house, has already attracted interest from MicroProse which publishes its games in the UK.





## BUSINESS SYSTEMS

## LEISURE SYSTEMS

**MEGABYTE**

### AMSTRAD PC 1640

● SD-MD	£479.00
● SD-CD	£579.00
● DD-MD	£579.00
● DD-CD	£679.00
● DD-ECD	£779.00
● HD-MD	£779.00

● HD-CD	£879.00
● HD-ECD	£979.00
● SD-MD +20mb	£729.00*
● SD-CD +20mb	£829.00*
● SD-ECD +20mb	£929.00*

\*Please add £20 for 32mb hard disk

#### PRICES INCLUDES:

- MOUSE MAT
- DUST COVER
- FLOPPY DISK WALLET
- 10 SOFTWARE TITLES (PD)

PRICES EXCLUDE 15% VAT

### AMSTRAD PC1512

● SD-MD	£499.00
● DD-MD	£599.00
● SD-CD	£599.00
● DD-CD	£699.00

#### PRICE INCLUDES

- AMS 3160 PRINTER
- MOUSE MAT
- DUST COVER
- FLOPPY DISK WALLET
- ABILITY SOFTWARE
- 4 GAMES

PRICES EXCLUDE 15% VAT

#### Star LC10 Printer

9 Pin dot matrix printer for use with most home and business computers. Produces draft near letter quality (NLQ) and graphicsprint.

**Prices £229.95 (Save £70)**

#### Star LC10 Colour Printer

Same features as above but can also print in multiple colours

**Price £269.95 (save £75)**

#### Star LC24/10 Printer

24 pin letter quality printer with similar features of the LC10 but with better print quality and speed.

**Price £349 (save £110)**

Please note all our printers are supplied with a free cable and ribbon.

Note: These and NOT grey imports.

### AMIGA 2000 OFFER

Amiga 2000, Commodore 1084 monitor, 20mb Hard Disk, 1 3.5in Floppy, The XT Bridgeboard (for fast IBM emulation)

**PRICE £1699 + VAT**

#### Philips 8833 Monitor

Medium Resolution colour monitor with stereo, RGB input, RGB-TTL input and CVBS input. It can also be used with video recorders with SCART connectors and is compatible to most computer types.

**Price £280**

#### Philips 8833 with computer

When the monitor is purchased with an Amiga or an ST subtract £10 from the above price.

Both offers include a free cable worth £14.95 to connect the monitor to your computer.

Watch this space for news on the world's smallest PC or call us for details

### COMMODORE PC's

#### PC10 SD MONO

- MPS1230 PRINTER
- SUPERCALC 4
- FLOPPY DISK WALLET
- DUST COVER
- 10 SOFTWARE TITLES (PD)

**£599.00 + VAT**

#### PC20 HD MONO

- FAX CARD
- SUPERCALC 4
- FLOPPY DISK WALLET
- DUST COVER
- 10 SOFTWARE TITLES (PD)

**£1049.00+ VAT**

### AMSTRAD PC2086 RANGE

#### FREE WITH ANY CONFIGURATION

- WINDOWS
- SPREADSHEET
- PRESENTATION GRAPHICS
- DATABASE
- TERMINAL EMULATION
- COMMUNICATIONS
- DATAMAIL
- MOUSE MAT
- DUST COVER
- FLOPPY DISK WALLET

**PRICES START FROM**

**£599.00 + VAT**

### 520 STFm Super Pack\*

Includes free Mouse, Mouse Mat, Joystick, Disk Wallet, Dust Cover and over £450 worth of free games and utility software.

Games included are...

Marble Madness £24.95, Test Drive £24.95, Beyond The Ice Palace £19.95, Buggy Boy £19.95, Eddie Edwards Super Ski £19.95, Ikari Warriors £14.95, Thundercats £19.95, Ranarama £19.95, Zynaps £19.95, Quadralien £19.95, Starquake £19.95, Chopper X £9.95, Roadwars £19.95, Xenon £19.95, Arknoir II £19.95, Wizball £19.95, Black Lamp £19.95, Genesis £19.95, Thrust £9.95, Seconds Out £19.95, Summer Olympiad 88 £19.95

**Price £348 + VAT - £399.95**

### 520 STFm Basic Pack\*

Includes free Mouse, Mouse Mat, Disk Wallet, Dust Cover and ST Explorer Disk (contains ST tutorial and a free game).

**Price £260 + VAT - £299.95**

\* Both ST Packs come with a minimum of 15 public domain software titles including games, utility programs and graphic and sound demos.

### AMIGA 500 10 STAR PACK

The Amiga 500 Star pack includes 10 top quality games each individually packaged in its own casing with instructions. Not only do you get this but also a TV modulator to make the Amiga compatible with domestic TVs, a mouse, a mouse mat, a dust cover, a disk wallet and at least 15 public domain software titles ranging from games to graphic and sound demos to useful utility software.

The Games included in the pack are...

Amegas £14.95, Art of Chess £24.95, Barbarian £19.95, Buggy Boy £24.95, Ikari Warriors £24.95, Insanity Fight £24.95, Mercenary Compilation £19.95, Terrorpods £24.95, Thundercats £24.95, Wizball £24.95

**Price £348 + VAT - £399.95**

### A500 Dragon's Lair Pack

Pack includes the Commodore A501 ram expansion, TV modulator, mouse, mouse mat, dust cover, disk wallet, at least 15 public domain programs, Dragons Lair (worth £44.95)

**Price £478 + VAT - £549.95**

For more details of other Amiga packs please call

### WHY BUY FROM MEGABYTE?

When you buy a computer from us, our service to you does not end with delivery. It continues well beyond.

Megabyte holds a huge variety of software and peripherals in stock including things like the Cyber family of CAD and animation software on the ST, the full range of Timeworks products on the PC and ST, the powerful Deluxe range of graphics, video and printing programs on the Amiga and a wide range of Genlocks and digitisers on the AMIGA and ST.

We also keep a large range of entertainment software and peripherals in stock for all major home computers and even software on some of the less popular machines such as the Atari XL and XE range. Included in our price list of peripherals are things such as Joysticks (about 10 different types in stock at any one time - on one of which we give a lifetime guarantee), printer ribbons (we hold 43 different types in stock and can get just about any other ribbon you wish), extra disk drives, blank disks and disk storage boxes.

The items mentioned above represent only a fraction of the things we keep in stock at all times. We do this so that we can provide the fastest and best service possible to all our customers. It doesn't matter whether you are local and call into one of our shops or use our mail order services, you will always receive the same fast, effective and friendly service.

Commodore 64  
Spectrum + 2  
Spectrum + 3  
Atari 2600, XL, XE  
SEGA,  
Amstrad CPC  
Cambridge Z88  
and Psion also supported

### How to Order

We take all major Credit Cards - telephone orders are welcome

To order Phone **0236 736219** (PC related) or **0236 738398** (everything else)

All cheques should be made out to: Megabyte

and sent to: **Megabyte**

12 Ettrick Square, Town Centre  
Cumbernauld G67 1ND





**FREE  
CIT 120D  
PRINTER  
with our  
AT 286 COMPUTER**

# MEDIAWARE

**FREE DELIVERY  
To U.K. Mainland  
ALL PRICES  
EXCLUDE VAT  
OFFICIAL TENDERS &  
QUOTATIONS WELCOME**

## BULK DISKS FROM ONLY 19p each

**We Accept  
EXPRESS  
VOUCHERS**

### HARD CARDS



WESTN DIGITAL 20MB 65MS 195.00  
WESTN DIGITAL 32MB 65MS 210.00  
(Including XTREE Software)  
SEAGATE 20MB 40MS 199.00  
SEAGATE 32MB 40MS 220.00  
**38% FASTER THAN THE  
AVERAGE 65MS CARD**

### HARD DRIVE KIT

ST-225 - MFM 20MB 65ms 179.00  
ST-251 - MFM 40MB 40ms 269.00  
ST-4096 - MFM 80MB 28ms 399.00  
ST-138 - MFM 30MB 40ms 249.00  
ST-138R - RLL 30MB 45ms 214.00  
ST-125R - MFM 20MB 40ms 189.00  
SEAGATE DRIVERS INCLUDE  
CONTROLLER AND CABLE

### EXTERNAL DISK DRIVE

**5.25" 360K EXTERNAL  
DISK DRIVE  
FOR THE AMSTRAD 2086  
ONLY £99.00**

### MANUAL DATA SWITCHES



SERIAL/RS232 2 WAY 16.00  
SERIAL/RS232 4 WAY 25.40  
SERIAL/RS232 X-OVER 25.40  
PARALLEL/CENT 2 WAY 18.00  
PARALLEL/CENT 4 WAY 25.50  
PARALLEL/CENT X-OVER 26.50

### CABLES

2m IBM Printer Cable 6.95  
3m IBM Printer Cable 7.95  
2m RS232 M/F 6.95  
2m RS232 M/M 6.50  
2m RS232 9/25 (AT) 8.50  
Keyboard Ext. Cable 6.00

### SURGE PROTECTORS

4 way Surge Protect Mains Strip  
U.K. Standard 19.00

### SPECIAL OFFER



**AT 286 COMPUTER**  
Phone for full spec.  
Price £1599.00 + VAT  
Inc. CIT 120D Printer

### PRINTERS

**Panasonic**



**NEW**

KX-P1180 9 PIN 192cps  
DOT MATRIX **NEW!** 199.00  
KX-P1124 24 PIN 132  
COL DOT MATRIX **NEW!** 279.00  
KX-P1081 9 PIN 80 COL  
DOT MATRIX 120cps 135.00  
KX-P1592 9 PIN 132 COL  
DOT MATRIX 180cps 259.00  
KX-P1595 9 PIN 132 COL  
DOT MATRIX 240cps 365.00

### STAR

LC-10 9 PIN 80 COL DOT  
MATRIX 144cps 189.00  
LC-10C 9 PIN 80 COL  
COLOUR 144cps 219.00  
LC-10CC 9 PIN 80 COL  
COMMODORE/INT 144cps 189.00  
LC24-10 24 PIN 80 COL  
DOT MATRIX 170cps 299.00

### CITIZEN

120D 120cps DRAFT 129.00  
180E 175cps DRAFT **NEW!** 169.00  
MSP15E 160cps DRAFT 229.00  
MSP40 240cps DRAFT 249.00  
MPS45 240cps, 132 col 299.00  
MPS50 300cps, 80 col 399.00  
MPS55 300cps, 132 col 449.00

### EPSON

LX800 180cps DRAFT, 80 col 189.00  
FX800 240cps DRAFT, 80 col 369.00

### LASER PRINTERS



**TOO CHEAP TO  
ADVERTISE!**

PANASONIC KX-P4450 **CALL!**  
STAR LASER PRINTER 8 **1350.00**  
CIT OVERTURE 110+ **CALL!**  
KYOCERA F1000 HQ **1599.00**  
EPSON GQ3500 **1295.00**

**FREE PRINTER CABLE  
WITH EVERY  
PRINTER SUPPLIED.**

### SUPER MOUSE



Serial, 350DPI, 3 Button  
IBM XT/AT, Microsoft, PS2 Compatible  
Inc. Mouse Mat and AT Adaptor  
**£34.99**

### 5 1/4" BULK DISKS, ENVELOPES AND LABELS

	50	250	500	1000
SSDD 48tpi	.26	.23	.20	.19
DSDD 48tpi	.27	.25	.24	.22
DSDD 96tpi	.32	.29	.28	.26
DSHD 1.6Mb	.52	.49	.48	.46

### 3 1/2" BULK DISKS, ENVELOPES AND LABELS

	.69	.65	.63	.59
SSDD	.69	.65	.63	.59
DSDD	.79	.75	.73	.69
DSHD	1.69	1.65	1.58	1.49

## BRANDED DISKS FROM £4.90 per box

CHOOSE FROM ANY OF THE FOLLOWING BRANDS

**JVC Verbatim. SONY. 3M**

BOXES OF 10	1-2	3-9	10+
5 1/4" SSDD 48tpi	5.80	5.40	4.90
5 1/4" DSDD 48tpi	6.20	5.80	5.40
5 1/4" DSDD 96tpi	9.50	9.20	8.80
5 1/4" DSHD 96tpi	9.90	9.60	9.00

3 1/2" SSDD	10.90	10.20	9.90
3 1/2" DSDD	12.50	11.80	10.90
3 1/2" DSHD	27.50	26.95	26.00

### STORAGE BOX WITH DISKS

25 x 5 1/4" DS-DD 96 Tpi with 50 capacity LOCKABLE STORAGE BOX	12.95
50 x 5 1/4" DS-DD 96 Tpi with 100 capacity LOCKABLE STORAGE BOX	19.95
20 x 3 1/2" DS-DD 135 Tpi with 40 capacity LOCKABLE STORAGE BOX	21.95
40 x 3 1/2" DS-DD 135 Tpi with 80 capacity LOCKABLE STORAGE BOX	38.95

All disks are certified 100% error free and are supplied with labels.

### LOCKABLE STORAGE BOXES



**UNBEATABLE  
PRICES**

3 1/2" 40 Disk Lockable Box	3.99
3 1/2" 80 Disk Lockable Box	4.99
5 1/4" 50 Disk Lockable Box	3.99
5 1/4" 100 Disk Lockable Box	4.99

### HOW TO ORDER

By Telephone: 0270 666616/ By Visa or Access Card  
0270 664236  
By Post: Address Below  
By Fax: 0270 665556  
Personal Callers Welcome

### HOW TO PAY

By Cheque with Bankers Card  
By 30 Day Account -  
for Official Orders Only.  
By Cash

**DIAL-A-DISK**



**0270 666616**



**MEDIAWARE LIMITED**

Unit 9 Huntsbank Industrial Estate,  
Crewe Road, Wistaston, Crewe, Cheshire CW2 6QT  
Telephone: 0270 666616/664236



**FAX-A-DISK**



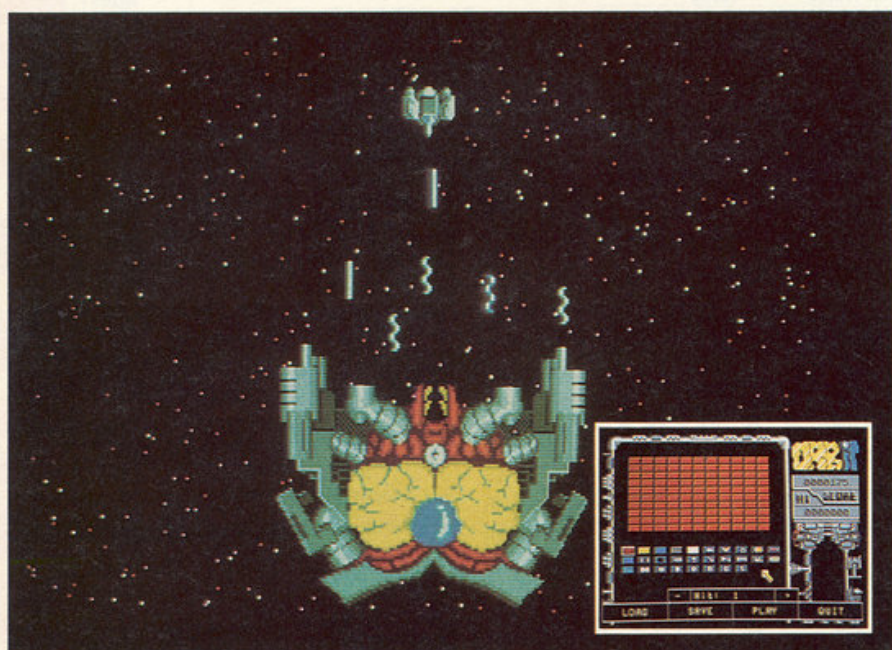
**0270 665556**

# MEDIAWARE



# It's a STOS up!

Mandarin Software's ST game creator, STOS, achieved critical acclaim and subsequent popularity when it was launched last year. Now Mandarin Software has released some STOS utility products, including the eagerly awaited compiler. Rik Haynes gets STarted with STOS.



• You can combine STOS BASIC sprites to form a meaty jobbie, as shown in this example provided by Zoltar – a shoot'em-up that comes with STOS BASIC. Inset: Breakout fun thanks to another game bundled with STOS BASIC called Orbit

**W**hen most games players hear the mere mention of BASIC, they rapidly crawl back to their joysticks murmuring "boring" as they go. But STOS redefines all preconceived ideas gamers have about Basic. With STOS you can produce your own games – which while not being exactly commercially viable, can look and feel very professional.

STOS is a powerful and versatile version of BASIC, which contains 340 commands with various games related functions, and supports up to 15 fully animated sprites with a size limit of 64x64 pixels. Also included in the three disk package is a sprite editor, room designer,



• STOS Maestro's sound sampler software gives a standard selection of sampler editing facilities

## What, where and how much?

STOS – The Games Creator •  
ST • BASIC • £29.95  
STOS Compiler • ST • Compiler  
(Needs STOS BASIC) • £19.95  
STOS Maestro • ST • Sampler  
Software • £24.95  
STOS Maestro Plus • ST •

Sampler Software and  
Hardware • £69.95  
STOS Sprites 600 • ST • 600  
Sprites (Needs STOS BASIC) •  
£14.95  
All available from Mandarin  
Software on 0625 878888

Interested Amiga owners will  
be interested to know that  
Mandarin Software is currently  
working on an improved  
version of STOS on the Amiga.  
AMOS should be available  
shortly.



character set editor, icon editor, music editor and screen compactor. STOS even has three ready made games (Zoltar, Bullet Train and Orbit), so the novice games creator can dissect them and get a good idea on how to create their own efforts.

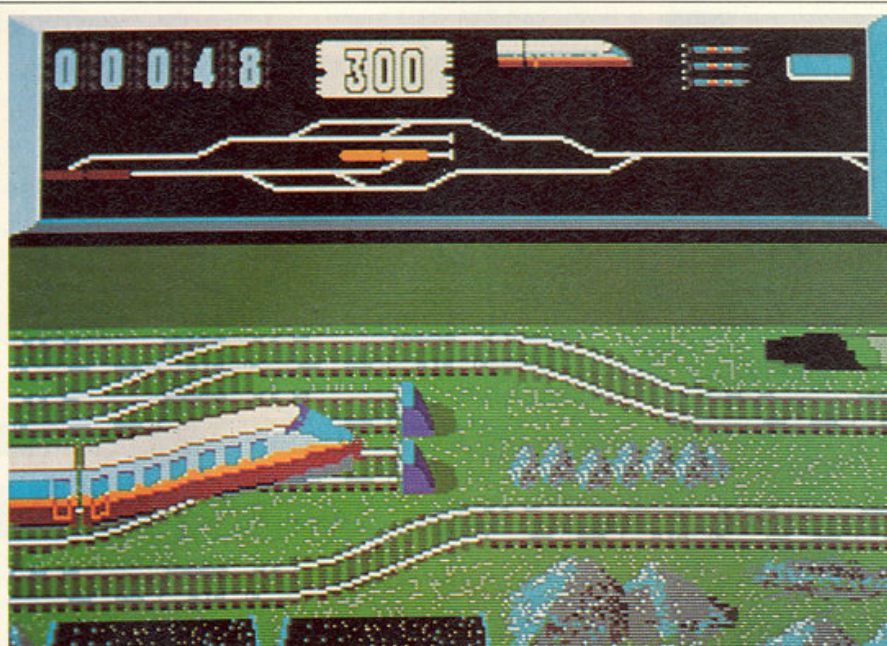
STOS is one of the best creativity tools available on the ST, and should appeal to both experienced and novice user alike – although the very inexperienced may take a little time to get used to the operating a BASIC language. After all, how many times have you bought a game, taken it home, played it and found it to be a total waste of time and money, muttering "I could do better than that pathetic pile of trash!". Well, with STOS you been given the chance to do just that... or eat your words!

## Hasten the execution

This is the program STOS owners everywhere have been waiting for, the chance to speed-up their favourite creations. The greedy among them already spending the supposed royalties from writing the next Elite, Dungeon Master or Interceptor. But will the compiler make this all possible?

For £20 quid, you get the compiler program itself, plus STOS BASIC 2.4, a new floating point routine, disk format accessory and a RAM disk.





• The third game that's bundled with STOS BASIC is Bullet Train, a horizontally-scrolling action game, with you placed in control of a speedy locomotive having to make split-second decisions on what track to travel on. All the games provided with STOS BASIC help both the experienced and novice programmer alike, and are an immediate insight into what STOS can achieve

The compiler itself is reported to compile programs at a speed of 500 instructions per second, and compiling a few simple demos it seemed to work fast. The claim that games are speeded up by almost 50% does seem a little optimistic however, but even with those simple demos there was a marked improvement in execution speed after using the compiler.

The compiler is only one of a number of add-ons for the STOSser. Maestro adds to STOS BASIC's inherent lack of full specification sound support, by giving the user the chance to use sampled sound in their STOS programs. Including in the package is a standard implementation of a sampler editor, 13 new sound related STOS instructions, and a selection of sound samples

ready to be incorporated into own programs. The Plus version of Maestro includes the sampling hardware needed to sample your own sounds.

Both versions of Maestro are overpriced (the Plus version ludicrously so) and don't offer much more than a standard sound sampling package. Microdeal's Replay 4, and Software Horizons' new £35 price busting Mastersound, sound samplers are far superior.

Last, and by every means least, comes Sprites 600, a collection of 600 sprites that would appeal only to those poor souls whose artistic skills can't stretch beyond the infamous stickperson sprite. Still, if you can't draw, this package may be of some use.

## The verdict

It would appear at first glance, that the extra add-ons for STOS aren't absolutely essential and don't offer very good value for money. However, hardened STOS users who feel their latest epic could do with an upgrade in speed, could find the compiler very useful indeed. As for the other products, they feel like unnecessary ways to cash-in on the STOS craze. A great pity considering the loyal user base that STOS has attracted in such a small amount of time.

## Keep 'em peeled...

Express will be doing a special feature on creating your own games in the near future. If you have any questions or tips on the subject, or have created your own epic game using a games creator then please tell us about it by writing to: Games Creators, New Computer Express, Future Publishing Limited, 4 Queen Street, Bath BA1 1EJ.

### 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\*

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



**WE WILL MATCH OR BEAT ANY OTHER PRICE, CALL OR WRITE FOR DETAILS**

**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

### 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	£310.00 (inclusive)
NB 24/10	£425.00 (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)
Vortex 40 Mb Hard Disk	£570.00 (inclusive)
3 1/2 External Drive	£99.00

#### 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

PC HARDWARE  
AMSTRAD  
EFI  
SAMSUNG  
OPUS

PLEASE CALL FOR THE BEST QUOTES

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





# If you demand quality PC shareware, buy from Europe's leading shareware supplier.



- ☐ Menu driven
- ☐ All 100% guaranteed
- ☐ All despatched same day
- ☐ FREE Catalogue

- ☐ All Shareware on leading brand disks.
- ☐ The lowest price for quality. Single disk £3.50. 5 disks £15. 10 disks £27.50. 20 disks £47.
- ☐ No hidden extras. VAT included. Postage included. Freepost address. You don't even need a stamp.

## WORDPROCESSORS/TEXT EDITORS

- |                               |  |
|-------------------------------|--|
| 138 PC-WRITE                  | - Quicksoft's famous W.P. package                          |
| 156 PC-TYPE+ (3)              | - Buttonwar's easy to learn W.P.                           |
| 137 SPELLING CHECKER          | - Works with most W.P.'s                                   |
| 192 MINDREADER                | - An artificially intelligent W.P.                         |
| 219 PC-OUTLINE                | - An outlining and planning program                        |
| 220 PC-STYLE                  | - A program to help improve your writing style             |
| 217 NEW YORK WORD (2)         | - A powerful, easy to use word processor                   |
| 193 GALAXY                    | - An easy to use menu driver word processor                |
| 101 FORM GEN                  | - Helps you design professional looking forms              |
| 228 WORD PROCESSING UTILITIES | - Packed with useful utilities for the word processor user |
| 251 TEXT EDITORS              | - Several text editors on one disc                         |

## SPREADSHEETS

- |                   |   |
|-------------------|---|
| 136 QUBECALC      | - A full featured 3D spreadsheet        |
| 103 GOALSEEKER    | - Works out 'what if's' on spreadsheets |
| 105 PC-CALC+ (3)  | - A very fine specimen of a spreadsheet |
| 229 MATHS & STATS | - Selection of calculation programs     |
| 102 AS EASY AS    | - A superb feature packed spreadsheet   |
| 139 INSTACALC     | - A popular spreadsheet package         |

## DATABASES

- |                        |   |
|------------------------|---|
| 154 PC-FILE+ (3)       | - A very powerful data Management system        |
| 194 WAMPUM (3)         | - A menu-driven database implementing dBase III |
| 215 LETTERS AND LABELS | - Database for generating labels and letters    |
| 191 INSTANT RECALL     | - Memory resident database                      |
| 175 DREAM (3)          | - Relational database up to 32,000 records      |

## GRAPHICS

- |                             |   |
|-----------------------------|---|
| 200 PC-KEY DRAW (3)         | - A fabulous easy to use graphics program         |
| 118 PC-KEY DRAWINGS         | - A symbols library to accompany the above        |
| 120 DRAFTSMAN               | - Advanced business graphics system               |
| 110 PC-DRAFT 1              | - High resolution pixel oriented drawing/graphics |
| 150 PRESENT                 | - Fabulous slide presentation with pop-up camera  |
| 207 3D-CAD                  | - 3 dimensional drawing and rotation              |
| 182 FLOWCHARTING (2)        | - Comprehensive system for flowcharting           |
| 209 FINGERPAINT             | - Excellent painting graphics                     |
| 252 DANCAD 3D (2)           | - 3D wire frame drawing                           |
| 286 EASY PRESENTATION GRAPH | - Fabulous graph drawing package                  |

## UTILITIES

- |                        |  |
|------------------------|--|
| 195 POWER MENU         | - A menu system for hard disc users                |
| 106 BAKER'S DOZEN      | - 13 Utilities/mini-programs from Buttonware       |
| 107 DOS UTILITIES 1    | - Useful utilities to improve DOS                  |
| 158 FILE UTILITIES 1   | - The creme de la creme of file utilities          |
| 214 STILL RIVER SHELL  | - An improved DOS environment                      |
| 221 PC DOS HELP        | - Highly recommended for first time computer users |
| 174 IMAGEPRINT         | - Produce top quality printouts on a dot matrix    |
| 212 PRINT ENHANCERS 1  | - Extra fonts, better quality etc                  |
| 179 30 ESSENTIAL UTILS | - Over thirty very useful utilities                |
| 152 HARD DISK UTILS    | - Selection of utilities for hard disc users       |
| 140 SIDE WRITER        | - Lets you print existing documents sideways       |
| 195 POWERMENU          | - A menu system specifically for hard disc systems |
| 226 AUTOMENU           | - Assists you in creating menus. Has passwords     |
| 196 LQ                 | - Vastly improved printout on a dot matrix printer |
| 197 CITYDESK           | - A comprehensive print enhancing program          |

## UTILITIES (Continued)

- |                      |  |
|----------------------|--|
| 108 PKARC/PKXARC     | - A Programme to archive/unarchive files for you |
| 232 SCREEN UTILITIES | - Includes CGA Simulation for Hercules cards     |

## MISCELLANEOUS

- |                           |  |
|---------------------------|--|
| 211 PASCAL COMPILERS      | - 3 Compilers for the Pascal programmer                |
| 144 DESK TEAM             | - An excellent memory resident desktop organiser       |
| 119 PC-TUTOR              | - Tutorial to master your PC-Computer                  |
| 109 PASCAL TUTOR (2)      | - For those wishing to learn Pascal Programming        |
| 151 C TUTOR (2)           | - Same as Pascal Tutor above but for C Programming     |
| 225 LANGUAGE TUTORS (2)   | - French, German, Italian and Spanish needs Basic      |
| 210 TYPING TUTOR          | - Learn how to type, Educational and good fun          |
| 162 FREEWAY ACCOUNTS+ (3) | - A complete business accounts package                 |
| 163 CLIENT MANAGEMENT     | - Keeps track of clients for salesperson or office     |
| 111 STOCK TRADER          | - Chart your stocks and shares                         |
| 116 HOMEBASE (3)          | - A sophisticated desktop organizer                    |
| 122 EXPERT SYSTEM (2)     | - Expert system, useful and educational                |
| 169 ASTROL/BIO (2)        | - Two astrology programs and one biorhythm program     |
| 206 WORDWORKER (2)        | - Complete King James New Testament with search        |
| 190 FAMILY TREE           | - Genealogy program to help to trace your roots        |
| 159 A86 MACRO ASSEMBLER   | - An 8086 assembler plus a powerful debugger           |
| 141 BASIC INTERPRETER     | - Run or write your own VW or BASICA programs          |
| 181 BASIC TUTOR           | - Teach yourself Basic                                 |
| 223 AMY'S 1st PRIMER      | - Keeps pre-school child busy. Needs Basic             |
| 142 4-9 YEAR OLDS (2)     | - Five more games. Does not require Basic              |
| 171 SECONDARY SCHOOL      | - Maths, geography, chemistry etc.                     |
| 143 INVENTORY CONTROL     | - Control your stock                                   |
| 132 CASH TRAC (2)         | - Helps you to handle your household budget            |
| 230 FREEWAY PAYROLL (3)   | - Freeway excellent payroll system                     |
| 231 FREEWAY CASHBOOK (2)  | - Another excellent package from Freeway               |
| 201 CHECKMATE GL          | - Feature packed double entry ledger system            |
| 184 MR BILL (2)           | - Produces itemized invoices, reports etc.             |
| 148 FRONT OFFICE (2)      | - Organise selling activities of your company          |
| 123 VIDEO/LP DATABASE     | - Catalogue your video or record collection            |
| 233 NIGHT SKY ASTRONOMY   | - Fabulous astronomy program                           |
| 235 C COMPILER            | - Excellent for the C programmer                       |
| 234 COMPASS               | - Integrated database, spreadsheet, word processor etc |

## GAMES

- |                          |   |
|--------------------------|---|
| 114 GOLF                 | - Play your way around this 18 hole course        |
| 145 CAVE QUEST           | - Temple of Asphal Adventure                      |
| 113 MONOPOLY/TUNE TRIVIA | - 2 Fun games for all the family                  |
| 147 BRIDGEAL             | - An opportunity to practice your game            |
| 165 HOTBOOT/INSULTS      | - Practical jokes on the unexpected user          |
| 167 PINBALL GAMES        | - 9 Multi player all action pinball games         |
| 187 MONO GAMES           | - 8 Games for those with mono display             |
| 125 AMULET OF YENDOR     | - Choose character and play any of 20 levels      |
| 126 ARCADE GAMES 1       | - Round 42: P Trooper, Rockets, Kamikaze and more |
| 127 ARCADE GAMES 2       | - Fighter, Sopwith, Ribbit, Bugs, Grime           |
| 128 ARCADE GAMES 3       | - Spacewar, Willy, Beasts, Novatron, Archery      |
| 129 ARCADE GAMES 4       | - Bricks, Pango, Battalia, Qubert and more        |
| 130 ARCADE GAMES 5       | - Striker, Tank, Invaders, PCman                  |
| 131 ARCADE GAMES 6       | - Sonix, Nemon, Castle, Pente, Hi-Q and more      |
| 189 DUNGEON/DRAGONS (2)  | - The classic role playing adventure              |
| 146 WAR GAMES            | - A selection of war and battle games             |
| 188 BUSINESS GAMES       | - A selection of business games                   |
| 115 SLEUTH               | - Cluedo style adventure game                     |
| 168 CARDGAME             | - Poker, Canastor, Bridge, etc.                   |
| 164 TRIVIA MACHINE (2)   | - Over 1,500 questions and answers                |

## FREE SOFTWARE/FREE CATALOGUE

To receive your free Folio catalogue containing details of hundreds of quality programs and containing the unique Folio single keystroke menu system simply phone, or return the coupon.

## ORDER NOW

Order by post, or by phone.

The charge for a single disk is only £3.50. 5 disks £15. 10 disks £27.50. 20 disks £47. You can telephone with credit card orders 24 hours a day, 7 days a week. Credit facilities available for government departments, educational institutions etc.

To order by post, return this whole page as your coupon, ticking the Shareware you would like, or list on a separate sheet.

☐ Please send me your FREE CATALOGUE ☐ Please send me the disks I have ticked  
I require 3 1/2" / 5 1/4" disks. Add £1 extra for 3 1/2" disks.

I enclose cheque/PO for £ .....  
made payable to Folio Shareware or deduct my Access/Visa/Amex.

Account No. ....

Signed .....

Name .....

Address .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

We're the best. Don't just take our word for it...

"The Folio Menu System is excellent". W. S. G. Gladbach, W. Germany

"..... excellent value for money .....". D. E. Newcastle

"..... excellent service ..... friendly and helpful ..... speedy delivery". P. D. G. Grimsby

"I have tried other Shareware companies and none provide the excellent disks that you do".

D. H. Plymouth

# FOLIO

## S·H·A·R·E·W·A·R·E

Freepost, Westbrook Works, Thornton Road, Bradford BD1 2DX.

Telephone: 0274 393679 Fax: 0274 734289



CREDIT CARD HOTLINE 0274 393679  
FREE CATALOGUE 0274 393679



Post Code .....



## BOOK LOOK

I am in desperate need for some advice. I have had my Amiga since November, and now games are beginning to prove very boring, except for classics such as The Kristal, Galdragons Domain and War in Middle Earth etc. I have decided to dabble in the depths of programming.

I was after a couple of books to help me on my way. I want an AmigaDOS instruction manual (such as Amiga DOS Inside and Out) and a 68000 Machine Code Tutorial Book. I have no experience of programming (except the old 10 Print "Hello", 20 Go to 10 sort of programs). So a simple and comprehensive manual is needed. I have the freebie - Devpac 1 from ST Amiga Format.

Iain McCormick, Middlesbrough, Cleveland

● There will be plenty of books on the Amiga in your local large bookshop, but some of our favourites are Amiga Programmers Guide (Compute!) £16.95 (ISBN 0-874-55028-9) and 68000 Assembly Language Programming (Osborne McGraw) £19.95 (ISBN 0-07-881232-1) and Amiga Hardware Reference Manual (Addison

Wesley) £22.95 (ISBN 0-201-11077-6) all available from Computer Bookshops on 021 706 1188.

## ORGANISE A DEMO, SOMEONE

I own an Amstrad 2086. It has VGA Graphics, 640K, a 30 MB H/D, and a running speed of 8MHz. Surely a machine with all this can produce a demo of the same standard of which an Amiga or ST can produce. And now that PCs are becoming more than a business machine, there is no excuse why authors don't write some. Or if they do, why haven't they been advertised?

One of my friends told me that a PC with VGA can show all 250000 colours on screen at once, but the software that does is not available yet and a PC with 8MHz running speed produce 3 channel sound?

Tobin Harris age 13, Helsby, Cheshire

● There are plenty of demos available, though they're all for spreadsheets and databases which aren't renown for their stunning graphics. I suppose it's only a matter of time before the number of good

# EXPRESS MAIL

## 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!



• The ultimate games machine - wot, the PC?

games for up-market increases - wasn't it Bill Gates who described the top range PCs with VGA as being ultimate games machines? - but I doubt that games software houses will think it's viable as a target for a few years.

## HOLMES SWEET HOLMES

It was a pleasant day in March 1989 when I visited Mr Sherlock Holmes in his rooms in Baker Street.

I had a small problem which I presented to him as he sat smoking pipe after pipe of vile smelling shag tobacco.

When I had finished my melancholy tale, he strode over to the window and brooded some time before replying.

"My dear fellow" he said, "the best advice I can give to you is to tell your story to one of those clever chaps at the offices of 'The New Computer Express'. Explain to them that you paid full price for Interceptor but that when you loaded it the monitor showed a lousy monochrome picture reminiscent of a flight over Grimsby in 1865. Further explain that all your other games load showing full colours. Also, explain that you have returned the game to Electronic Arts who say that there is nothing wrong with the colours and that they advised you to contact the shop which sold the computer to you.

"Inform them also that after having written on two occasions to the shop, your letters have been met with a pignorant silence which indicates that the said shop has no idea of after-sales service.

"It is to be hoped, my dear fellow, that 'Computer Express' chaps will be able to explain a possible cause. The game you mention is supposed to have about five colours on the monitor and not monochrome as you have described.

"Further to your story, I have written to both Moriarty and my brother Mycroft requesting their assistance. Frankly, my dear friend, I would place more faith in the chaps at 'Computer Express' offices."

Holmes then said he was too busy to discuss the matter further as he was dealing with a problem concerning a large dog...

Robert Lamb, Cottingham, East Yorkshire

● "There's not much we can deduce from this," said Watson.

"On the contrary," replied Holmes. "We know he has an Amiga, for Interceptor was only released for that machine; we know he is a fair man, because he retains the rightful name for his county, now renamed North Humberside; and we know he is in his fifties or sixties."

"What!" ejaculated Watson. "How can you tell all this?"

"Because," Holmes continued, "the problem seems to me to be caused by his monitor's SCART lead being not properly connected, indicating, I would surmise, presbyopia - long-sightedness possibly caused by maturity."

"Amazing," said Watson. "If you can deduce all this, perhaps you could tell me why the BBC chose the Acorn Electron?"

Holmes reached for his Afghan Black Shag. "That, my dear fellow," he said smiling, as wisps of blue smoke rose from his Meerschaum, "is a mystery."

## STAR OF NEIGHBOURS?

Since your magazine appeared on the scene have you ever done a comparison on games consoles? (You know - PC Engine, Sega, Nintendo, etc.) If so, which one came out tops?

Another question ... where the hell can I get Minix for the 520ST or is it just out on the mega ST? At Poly enchus is standard and so I wouldn't mind it on the ST at all.

In Issue 24 someone was having trouble with gaping gaps at the top of the screen when playing Dragons Lair on the Amiga, well a few of my friends have experienced the same problem. Could be the actual expansion unit is knackered.

Final bit - some advice for those deciding between ST/Amiga - the greatest hardware in the world is worth a part in Neighbours, without the necessary software support. Martin Windsor, Birmingham.

● Currently the PC Engine is our favourite, but when the Sega megadrive comes over that will probably take over. Especially if we can get plenty of review copies. Minix for the 520ST is certainly available; it's published by McGraw-Hill and should be in your local large software shop,

## TEST CASE

I am sending you a short sob story with the intention of showing virus writers the serious consequences of their little pranks.

I am a student doing A level Computer Studies and as part of my course I had to write a project. A few days after running a disk of a friend's, I started getting lots of disk read/write errors. I took my computer into the dealer thinking it was the drive and was informed I had a virus which has now been cleared. Unfortunately, while the virus was active it

destroyed my project which has got to be handed in a few days time. This effectively has written off my A level and two years work.

If any virus writers would like to come round and explain the humour involved in this I would gladly hear them out before removing their testicles.

Dug Barthram, Lincoln

● I wish there was something we could do to help. As a small consolation we'll send you a piece of software for your machine (drop us a line and tell us what it is).

MYSTERY PRIZE WINNER





• One million PCW owners can't be wrong. Er, what was the question?

## PCW PATCH

Let us go back into the mists of time, when Express wasn't even on the shelves: January 1988. I spotted an ad for a machine which has very few games for it (no not the Archie) - the PCW. This great machine (of which I have a 9512) is surprisingly good for the few games I have got for it (eg. Starglider). But this advert showed a PCW version of that cool, hip, trendy, game Carrier Command!

I was amazed and went straight down to my local dealer to buy it. But, surprise surprise, they had never heard of it. So here we are more than a year later and things have gone beyond a joke as I still cannot obtain this highly spoken of game. Can you tell me if there is a PCW 9152 version of Carrier Command? I desperately want this game on my ever faithfully PCW, which I think is highly underrated as a games machine.

T Coleman, Kent

● Quite. The PCW is vastly underrated and you can get all types of game software - adventures, shoot-em-ups, arcade games including soccer and cricket, Tetris, Chess, Scrabble, trivia quizzes etc. - there are well over a hundred games for the PCW!

Unfortunately, Carrier Command isn't one of them.

## ST VS PCW

Is the letter from DP Jones of Gwent in issue 24 with his favourite Atari ST one of your spoof jokes just to fill up the page? He obviously knows far more about that subject than he does about computers, particularly the PCW. This letter is being written with a PCW 8512 using Protext, all system files loaded into the 368K RAM drive from my auto-start disc; and you wouldn't write it any quicker with a Compaq 386/25 or IBM mainframe, because however tired the Z80 may be, it is still a bloody sight quicker than the human brain and fingers.

It's horses for courses. I bought the PCW to do a job and for the difference in price I can buy a Nintendo or PC-Engine games machine that will out-perform both the Atari and Amiga. John Smart, Herts.

● You're quite right (except that we don't make up any letters on this page). Even the fastest touch typists can only manage about 120 wpm, or about a

dozen operations per second, and even the Z80 can cope with that.

We were probably a bit pessimistic on the price of a new ST, monitor and printer (though we forgot to include word processing software).

(One other correspondent castigated us for this and wondered sarcastically why we hadn't bothered to check the prices in the adverts in the same issue. Unfortunately we have to actually write the articles before the issue can come out).

## Pigg sick

I have just finished reading issue 24 of New Computer Express and have come away with the feeling that your editorial team may be slightly schizophrenic. Having read Basil Pigg's informative Micro Biography on the Amstrad PCW, and seen your well-reasoned reply to DP Jones' letter I was rather surprised to read the entries for Amstrad and the PCW in particular, in the new A-Z guide.

The entries for Acorn, Apple and Atari are objective appraisals of those companies and their respective hardware - yet for Amstrad it seems that only bile will do! I do think that calling the PCW 'the spawn of Beelzebub' a little juvenile.

Considering the large user base the PCW has, would it not be possible to expand PCW Patch to half a page in line with the other main computer sections. Surely there are some short BASIC listings and such that would help us as much as the Amiga/ST/PC etc.

Mr Pigg's description of the PCW user as being someone who wants to use it, rather than play around with its insides, is rather apt. I wish all Amiga/ST users good luck with their computers; enjoy them, but don't knock others because you don't understand the fascination they have with their machines - that smacks too much of 'Electronic racism'.

John Peters, Plymouth

● Well, there is room in Express for many voices and one of its strengths is that it can reflect many different, often conflicting, shades of opinion. I quite agree with your sentiments though.

Whatever other computer owners think of the PCW and its owners, I'll tell you this: they sure write the best letters. Not only are they laid out perfectly (LocoScript is set up to write on A4 single sheet) but they're all correctly spelt, make their point, have a sensible sprinkling of full stops, and don't keep putting NAMES

otherwise try the mail order firms that advertise in Express.

Is that computer on Jane Harris's desk really an ST?

## WHAT'S THIS THEN, A?

I've written some entries which I think should have been included in the Express A-Z. I hope they raise a smile or two around the Express office.

**ANSWERING MACHINE** - What you hear when trying to contact the mail order company from which you ordered a hundred quids worth of software eight months ago.

**ASSISTANT MANAGERS** - to be found at all branches of Dixons/Comet/Currys and who will tell you 'Yes, there's loads of games available for the PCW/Sinclair PC2000/Hoover Delux Carpet Master.

**ARKANOID** - Pre-spectrum game style which took all of three days to program and retailed for 'only' a tenner in late 1987. See also Krack Out, Giganoid, Addictaball, Batty, Impact, Super Break Out .....

Stephen Whitehead, Leeds.

● Far worse than answering machines are those infuriating devices which play twee tunes as you wait while someone decides whether or not they're 'in a meeting'. In my dictionary they come under F.

## Rock on

I would like to take this opportunity to point out a number of inaccuracies in Andy Storer's review of my game 'Rock Star Ate my Hamster' (Express 22).

Firstly, he states that 'the sole aim is to make as much money as possible' leading him to conclude 'Rock Star is too easy. A band ... managed to make us two million quid in four months'.

The sole aim of Rock Star (as stated in the playing guide) is to go platinum, by collecting four silver discs. Silver discs are won through album sales, which are dependent on sales of singles, which can

be boosted by making videos. Since a single video can cost over three million pounds to make, it can be seen that the argument of Rock Star being too easy on these grounds does not hold water.

Secondly, the review states that Rock Star has no sound whatsoever. This is simply not true. The Spectrum Rock Star has both 48K and 128K sound routines. These routines are in fact quite important to the game; the music you hear when your band is practicing, recording, or charting varies according to your band members - pick heavy metal members and you get a heavy metal sound, pick a reggae group and get a reggae sound, or mix and match punk, dance, pop etc. You also get to hear how well your band is playing; their ability increases with practice.

The Commodore 64 Rock Star will be released in a few weeks. This will make full use of its improved sound chip. Likewise, the Amstrad CPC Rock Star will follow, also using its internal sound chip.

Colin Jones, Gwent

● Sorry about the sound - this was a fault in our Spectrum which we didn't find out until after the issue went to press. However, the gameplay is still rather easy, Andy reckons. So what if a video 'can' cost three million and it 'can' boost sales? He made two mil without trying and without videos, and it's not actually clear from the play guide what the objective is.

## YOU SAY TOMATO, I SAY TOMATO

In issue 24, Basil Pigg's Micro Biography perpetuates the mistaken notion that the proper English spelling of 'disk' should be 'disc'. I refer you to the Short Oxford English Dictionary (my copy printed in 1972, before the computer invasion), in which the listing for 'disc' says simply 'variant spelling of disk'. In the listing for 'Disk' it is clearly stated, 'the better spelling is disk'. This goes back to the

**THE Stun**

COMPUTER ENTERTAINMENT SOFTWARE

# ROCK STAR ATE MY HAMSTER

By Stun reporter COLIN JONES

**BUBBLES - I'M FOREVER BLOWING!**

Monkey Bubbles' nights of baked bean bingeing!

We exclusively reveal today the REAL REASON why mega moneybags rock-star WACKY JACKO seals himself in an OXYGEN TENT!

**EXCLUSIVE ALIENS STOLE MY VOLVO**

see page 5

**EXCLUSIVE**

Sexy Wimbledon masseuse Suzy Nockers, 27, last night told how agent rockstar HAZZY HASBEEN, 73, devoured her hamster. Bobo at a wild showbiz party on Rockal: 'I didn't - I a vegetarian!' said Hazy

Full story inside

• Too easy? With this game you can make two million in twenty minutes. It doesn't take real rock stars as long as that, of course.



original Greek, in which the "k" was used. The word apparently became corrupted when it was latinised, as there is no "k" in Latin, but there is no reason for "English purists" to perpetuate this Italian lapse.

Incidentally, the Shorter Oxford also seems to prefer the spelling "program" over "programme". It notes that the first spelling is the 1633 original while admitting the second, a "subsequent reintroduction from the French" is more common in use. Perhaps the French import has now lost this position, due to the computing preference, and good riddance.

It is a great mistake to assume that American usage of the English language is necessarily degenerate. In many cases the Americans have retained the original English forms, while Britain has succumbed to continental influences. *Iolo Davidson, Glos*

● **Whether we like it or not, and whether the dictionary says it's 'correct' or not, 'disc' seems to me to have established itself as the standard current English spelling (except in computing). Same with 'programme': why not tell the Radio and TV Times that they've been getting it wrong these last few decades?**

I don't see the argument that because a spelling is older, it must be somehow better. ('Bric' boards'?). Language changes and evolves, and dictionaries do not define a language, they only describe it. Try telling your local cinema they should spell it with a K because it came from the Greek; I'm sure they'll be delighted to hear from you.

Yes, many US words or forms ('gotten', 'fall' for autumn) are old English, taken across on the Mayflower. On the other hand, I find the sort of contrived American English of politicians and computer journals quite laughable, but then I suppose the same goes for British politicians and computer journals.

## SAM HOPE

The standard answer to which computer to buy is the PCW. It is generally accepted as the best choice, for those on a budget. But what do you think of the new MGT SAM?

It has colour, far superior sound 3.5" disks and that wonderful bonus of being Speccy compatible. How do you think it will fare price-wise by the time I have bought monitor and letter quality printer, and what are the software prospects like?

I have no doubts about its superiority as a computer, but if it cannot offer good word-processing then it is completely out. *Robert Smith, Bucks*

● **We previewed the SAM in Express 6. One of its four graphics modes gives four colour 80 column 512x192 res, designed for word processing, incorporating windowing and page manipulation, so it can certainly be used for word processing in theory. Whether or not it'll be a good word processor in practice depends on third party software. Will Protext et alia be out on the SAM? That's unfortunately a question that no-one can answer, not without making things up anyway.**

The price of a SAM plus drive will be about £210. Plus printer, £400 say; plus wp software, £430 say; plus 'low-cost colour monitor' to be launched with the SAM, £480 say. All these are just conjecture though.

## TOO LARGE, TOO BIG, TOO REPETITIVE

Everyone seems to agree that computer games, particularly sixteen bit games,

are caught in a vicious circle whereby high prices lead to piracy which reduces sales to produce more high prices. In this connection, I would be interested to have the reactions of you and your readers to the following suggestion - that computer games are too expensive because they are too large and repetitive.

The novelty wears off and boredom sets in long before such games are completed. In the time needed to complete one of these marathon games, I would rather try several which were shorter and more to the point.

I am aware that some people would want long games, just as some like to read long novels, but I suspect that the market for shorter games would be quite large if these could be produced for around £10 each full price. Another possibility is dual option games, with both long and short versions. I would certainly buy shorter, cheaper games in the same way as I now buy paperbacks, and much more frequently than I buy current games. *D Hughes, Bucks*

● **I wonder if there isn't a counter argument - that games are long and have lots of fancy scrolling backdrops and detailed sprites because they have to justify the high price of production?**

Adventures can be too long if they fail to keep a good plot up; shoot-em-ups are all too long in the sense that they're variations on one theme. Sims and 'classic' games such as Chess and Scrabble (and Tetris?) survive because every game, however long or short, is different to the last. I still get the nagging feeling that computer games are generally too long and repetitive, and that there's a whole new bunch of game genres out there (perhaps they'll be released by new technology such as CD ROM, neural chips etc.) but I don't think that's particularly a cause of the current high 16-bit prices.

## BAK DOWN

After reading your ST column in Issue 23 of Express, I was confused and I work for Microdeal. Where on earth did you get your information from?

To set the record straight there is only going to be the arcade version of Fright Night on both formats. Although Steve Bak won't actually be converting the Amiga version to the ST himself, the program will be converted in the states in coherence with the Amiga version. *Joanne Sharp*

Public Relations/ Office Manager

## KEY FACTS

Thank you for publishing a fine mag. every week. You really do keep up a high level of writing, full of facts and up-to-the-minute info. Keep up the good work!

The article 'keynotes' (Express 23) was well written and well-balanced, but I cannot understand Peter's idea that the ALT and CTRL on the Amiga is 'simple insanity'. He writes that he has yet to find a software package that uses the CTRL or ALT keys.

Look at Protext, in that case. This marvellous program is just about built around CTRL and ALT. Almost everything needs these in one way or another: on checking the manual's summary of all commands you will discover 75 examples of CTRL and 27 of ALT. Perhaps I have misunderstood the article and Peter did not mean what I thought he did, but it does look to me as if he has slipped up here. Can you

# SNIPPETS

## PLAYING GAMES

In Issue 23, you advertised a review of games writing packages. What happened to this review? Was it, as I suspect after trying to write a game for the Amstrad PCW using Professional Adventure Writer, that they are too difficult to use and you cannot recommend any of them?

*Irene Harrop, South Humberside*

● **Sorry, it fell through, but will be with you 'soon' - meanwhile there's the STOS add-ons review this week. The PCW magazine 8000 Plus ran a couple of 'beginners' tips' articles on PAW - details from them on 0225 446034.**

## NI CONTRIBUTION

I have just read the 1st April 1989 issue of your magazine and am grateful to you for the geography lesson I received from it. I refer to the letter in "Snippets" from Jim Black, Muckamore, Antrim, Republic of Ireland! This was an April Fool, I hope!

For those others from Britain (Northern Ireland) take heart we have not been moved a little further South and Antrim (including Muckamore village) is still British!...

*P Jones, N Ireland*

● **Whoops! Sorry about that. Geography was always my worst subject at school, along with computing.**

## TEAR OFF A STRIP

...I have watched the growth in number of strip-poker games. Instead of going to the bother of getting a photographer and model, and using digitizer software, why not cut out the computer pictures and simply sell a plain poker game with a porn mag? Much simpler. And how about sports games like

mud wrestling, nudist games etc... *M Wood, Croydon*

● **To all strip poker players out there: for total realism, why not go out, find a girlfriend, and play strip poker with her? A pack of cards is much cheaper than the software.**

## SHOW DOWN

One day I phoned Express to ask about something. I spoke to that nice Mr Glenwright who kindly filled me in with all the details. He asked me what I thought of the Software Show. I've never seen it listed. What time and day is it on please?

*Nick Booth, London*

● **It was a one-off a few Sundays back. We were promised another, maybe a series, if the reaction was good. Thankfully, it was lousy.**

## FEWER GAMES PAGES!

I'm sure your magazine could survive on just one or two games pages rather than the three... *G Watts-Davis, Glasgow*

## MORE GAMES PAGES!

The first pages I read in Express are always the games reviews and previews...

*Graham Kelly, Brighton*

## HYPHEN SOCIETY

Can you cure the oddly hyphenated words which appear from time to time in your magazine?

*D Fickling, Wales*

● **Those hyp-henations were an automa-tic and ir-ritating fea-ture of our desk-top publis-hing pac-kage.**

We have now turned the auto hyphenation off.

please settle the confusion?

Finally, since you keep a goodish standard of English in your articles and (most letters) let me make a plea. Do please drop this new fashion of referring to past issues of NCE as 'ish', as in 'Express ish 21'. OK, it is funny once or twice, but please don't let such really naff expressions permeate your columns - it lowers the tone of your worthwhile mag.

*Bernard Gerstein, Herts*

● **Seems Protext was overlooked; chalk one up for yourself. Rest assured that 'ish' was a momentary aberration and new house style sheets have been dispatched to all Express writers.**

## BOUQUET SHOP

May I commend Spectravideo of Abingdon. I have a Quickshot II joystick - unfortunately one of the firing switches gave up. No complaints, as it was well out of guarantee and has seen much usage. I rang Spectravideo to find out how to order spares. "No trouble", they said, "we'll send you one free of charge".

They did, and what's more, it was in the next morning's post. *D Fickling, Wales*

## XEDINGLY GOOD

Thanks for the XE that I won in your Christmas competition, it's great, but I can't find any software for it. I've tried Atari, but they won't listen, or rather reply.

Could you please help, or I will have to sell it. Your magazine is great, and I like the articles that you do on viruses, MIDI, etc. they are very informative. I enjoy reaching the Great Computer Debate (GCD).

I have a C64, Atari XE and three Acorn Electrons. If anyone wants to buy an Elk (with tape, leads, etc) write to me now. Long live the '64.

*Vijay Mahra, Wolverhampton*

● **Aha! Quite a few mail order places will do Atari 8-bit software, but why not advertise for Atari 8-bit software in the Express Classifieds, only £5 for 20 words (see page 46)? And if you can't get any, you could always sell your Atari there. Now, guess why we didn't publish your full address...**



# UK HOME COMPUTERS

## UK HOME COMPUTERS

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

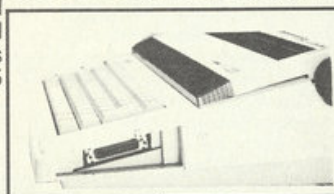
☎ 0793 695 034

### 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 £159.95 for just a Daisywheel Printer of this calibre, and over £90.00 for a Daisywheel Printer. Our Special Price is just £109.95 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

WE ACCEPT  
**EXPRESS  
VOUCHERS**  
AS FEATURED IN  
**'The Independent'** NEWSPAPER

## NO MORE NASTY BILLS FROM NIGEL . . .

## PLAN YOUR OWN TAX WITH EASE

Personal Tax Planner from Digita will help keep Nigel at bay.

A fully menu-driven program which will instantly calculate your income tax liability and provide the pertinent facts about your tax position, whilst helping you to complete your Tax Return with a minimum of fuss. You are taken through a series of questions (just like sections of a Tax Return) and the information can be used to provide useful 'what if' calculations on your tax liability. Guidance notes explain the operation of the UK tax system. If you have to sort out your own tax each year, then Personal Tax Planner is just the package you need.

#### Specification:

Easy updating of data for different tax years  
Tax years include current and 3 previous years  
Tax information can be screened or printed to  
check entries  
Enter up to 6 items of each type of income,  
charge or relief  
Pertinent information regarding tax position  
automatically given in appropriate  
circumstances:  
Is separate taxation of wife's earnings  
beneficial

Is tax relief limit exceeded for mortgage  
interest, business expansion scheme  
retirement annuity payments, etc.  
Is tax repayment restricted by non-repayable  
composite rate tax  
Class 4 National Insurance liability  
Save and load information to disc, files are easily  
identifiable between tax years  
Updating service/software support only £12.50  
per annum



#### • STOP PRESS •

Accountants: Contact  
Digita for further details  
of Professional Tax  
Planner

**SPECIAL  
BUDGET  
PRICE from**

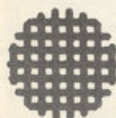
**£24.95**

"I can't stress too much the  
ease of use of this  
program"  
COMPUTING WITH  
THE PC

"An excellent program . . .  
I can unhesitatingly  
recommend PTP"  
COMPUTING WITH THE PC

"More fun than filling out  
your tax return . . . well  
worth the investment"  
8000 PLUS

"A very good product, and  
well worth the money"  
AMSTRAD PCW MAGAZINE



**DIGITA  
INTERNATIONAL**

Available to the trade from:  
GEM DISTRIBUTION, HARLOW 0279 412441

ORDER NOW - 24 HR  
CREDIT CARD HOTLINE  
0395 270273



PLEASE RUSH ME BY RETURN (enter quantity)  
PRICE  
Amstrad PC (5.25/3.5") £39.95  
Amstrad PCW/CPC6128 £24.95  
Atari ST £39.95  
Commodore Amiga £39.95  
Please send FREE Brochure Pack  
covering all Digita programs

Name  
Address

Please debit my ACCESS/VISA CARD  
No. \_\_\_\_\_  
Expiry Date \_\_\_\_\_  
Signature \_\_\_\_\_  
Post to: DIGITA INTERNATIONAL LTD.  
BLACK HORSE HOUSE, EXMOUTH  
DEVON EX8 1JL



# FAST FORWARD

*There's no time like the present to take a look at the future. Andy Storer maps out the millenium and offers a view of personal computing in ten years time*

**S**ince the arrival of the first 4-bit micro-processors of the early seventies, the cost of computing power has decreased in direct proportion to the amount of circuitry condensed on a single chip. The greater the density, the cheaper and more powerful the personal computer.

But semi-conductor technology is reaching its limits. Its rate of growth is slowing despite recent announcements by Intel and Motorola proclaiming their 'monster' 80486 and 68040 32-bit chips 'deliver mainframe power to the fingertip'. Whether made of silicon or germanium, semi-conductors are limited by simple laws of physics. Heat generation significantly slows the speed at which electrons make connections, whilst microscopic engineering, even with advances in Very Large Scale Integration, can only put so much circuitry on to a chip.

You can push the technology further by changing the architecture - using transputer configurations to process data in parallel with RISC chips - but whilst it's conceivable that by the mid-nineties many of us will be using 32-bit systems at much cheaper relative cost than today, it won't be for any significantly different applications. It'll be more of the same with more speed and less hassle.

But we need more than power to progress beyond ever faster number-crunching, higher quality graphics and all-purpose integrated software. To achieve full voice recognition and natural language processing we require significant advances in systems architecture, storage and the man/machine interface.

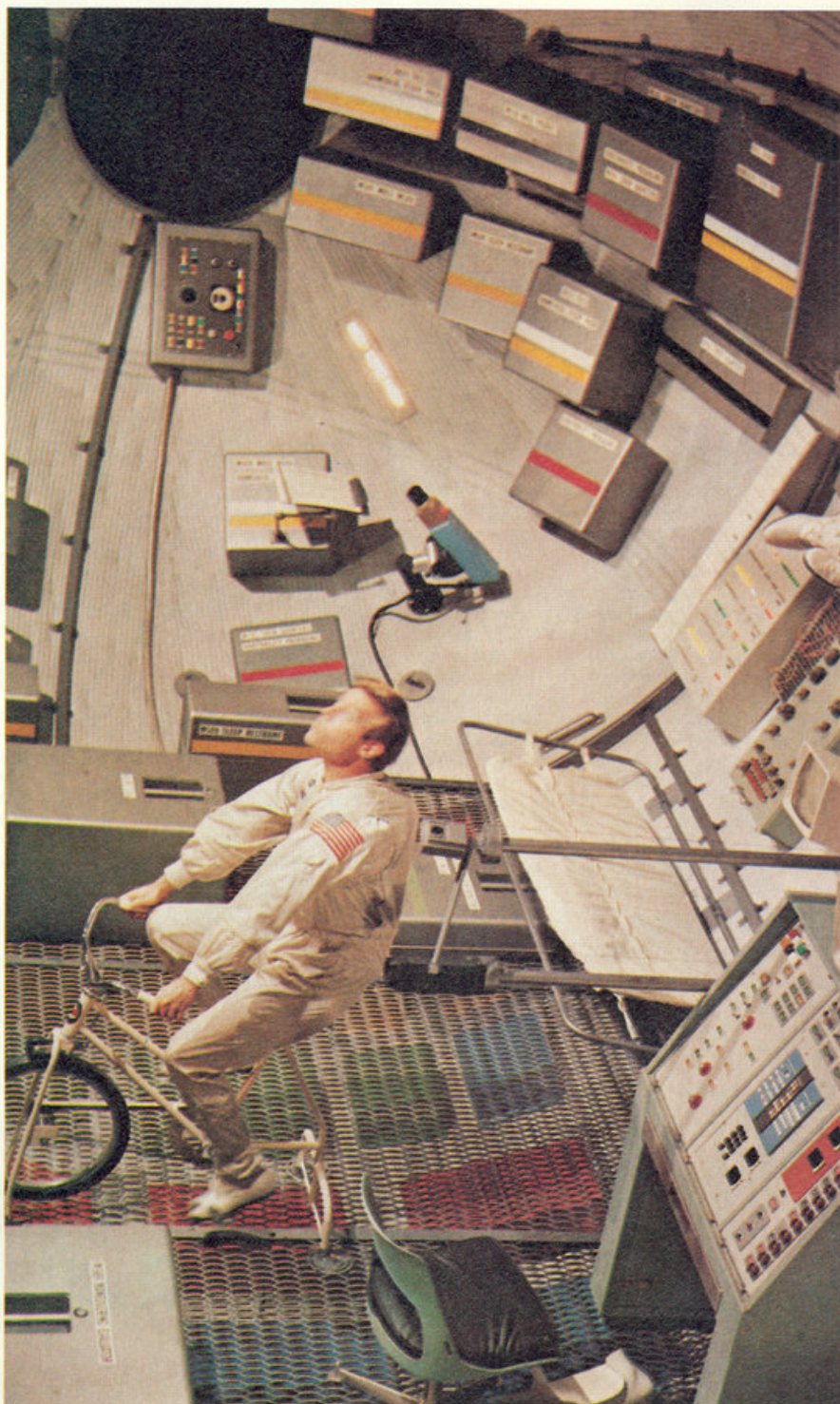
## Memories of the future

The nature of memory and the way it's organised is the key to all advances in future computing. In 1980 the ZX80 offered you 1K of RAM for £100. Now you can buy a 512K card for the same money. It's not just a result of economies of scale after a whole personal computer market grew up over night; manufacturing technology itself has improved the quality control of faster, cheaper and denser memory chips.

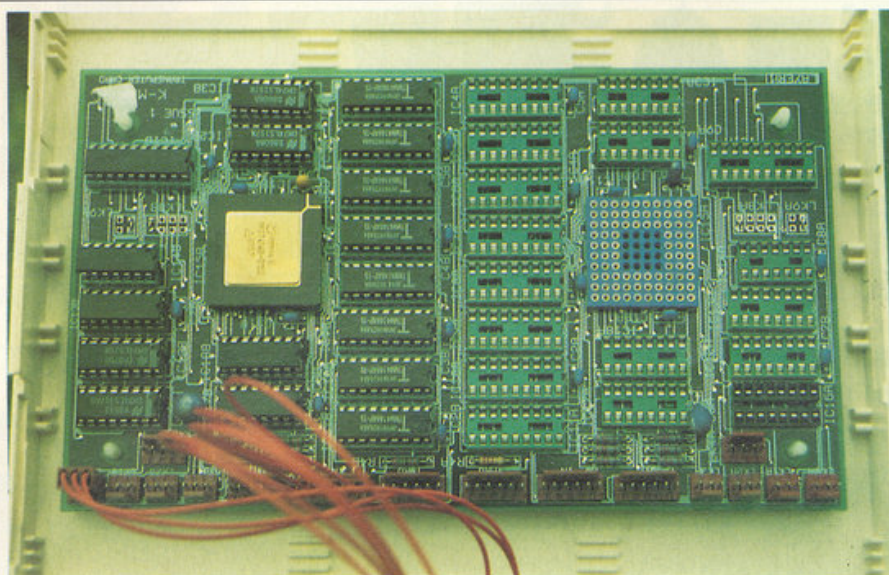
Wafer scale technology, where large numbers of RAM chips are etched directly onto a disk, will improve quality control and reduce costs even further but more and more cheaper memory is only a small part of what you can expect.

Having greeted instant ROM based software with open arms, micro-users are now awaiting non-volatile memory without the required battery backup already implemented in the Z88, Psion Organiser and the like. But non-volatile RAM is only a good mass storage system for low-volume applications. It's refresh rates take comparatively large amounts of power and like EPROMs, it's slow and expensive.

Besides which it's going nowhere new. It's the current way memory is organised as an architecture that sets the limitation. Current computers use the Von Neumann architecture consisting of a central processor and addressable memory linked by a data bus. The parallel architecture of transputer based systems speeds







• Kuma's K-Max 1 transputer board can plug straight into an ST. The 32-bit RISC chip at its heart is capable of addressing 4 Gigabytes. There's also on-board communication allowing banks or 'farms' of transputers to be connected in parallel.

this up by dividing the same tasks between several processors but to realise the potential of true parallel processing we need the distributed processing of neural networks. Here all the activities of memory are mixed and spread throughout an entire network of interlinked memory cells – there's no areas assigned to one specific purpose.

Neural networks are best described as Associative Memory systems which organise themselves into massive layered patterns of 'knowledge'. They are able to cope with faults and incomplete data by literally making the connection, learning from experience through training. As such they're useful in applications where no algorithm is known – like robotic vision and speech recognition.

It's perhaps not a great shift to think of neural networks as forming the basis for 'organic' memory systems in the future. After all the analogy with the way in which the human brain works is clear. Software applications that ran on quasi-intelligent systems would offer a user almost intuitive assistance.

By 1999 could I expect to be using a neural computer that's learned to know me sufficiently well not only to be able to recognise my speech but suggest the words I'm using to write this article? Among other things, a kind of fabulous Thesaurus?

Maybe. But it's still silicon based. Next on the agenda would be bio-chips able to physically reproduce as additional memory and storage are required.

### Put store by this

The time of magnetic storage media is over. Although you can now buy a 3.5 inch 180 Meg hard disk and a 10 Meg floppy from Fujitsu, these staggering advances rely on a technology which is unstable and vulnerable.

In the short term we can expect to see smart cards replacing existing magnetic media. Smart cards planned for use in computing are just



• Atari's POKet PC uses smart cards to hold up to 128K of program data. Their compact size disguises the massive potential they offer in terms of storage. Optical smart cards could hold a processor, megabytes of RAM and all the applications you're likely to need. Of course, Read/Write optical media are still in their infancy, but Third coast Technologies have just released a Read/Write optical drive for the Atari ST. Able to hold 900 MBytes of data the drive will set you back a tidy £4950, but as yet there's only one in the U.K.

souped up phone-cards really. Whilst NEC's PC Engine console loads its games off credit card sized smarts the 'serious' computer user of the future can expect to see smart cards containing a processor, 10 Megs of applications and 1 Meg of RAM. You just slot it home in a dumb terminal consisting of a monitor and keyboard and everything else boots up from the card.

But the key development by 1999 will be the merging of smart card and optical disk technology. You can already buy CD-ROM players for your PC containing archive and reference material – the CDs they run hold up to 550 Megs of data, access times are faster and they last 3 times the life of a floppy.

However, they're Read Only for the most part although you can buy WORM equivalents where you may Write Once Read Many times. WORMs are cheap and allow you to update material that's essentially going to be used for archive purposes – your company accounts for instance. But erasable optical technology is still some way off for the mass consumer although, of course, Sony, Kodak, Philips, 3M and Hitachi are all planning to have CD-EPROMs on the market by 1992.

By 1999 you should be able to buy a 10 Gigabyte erasable optical disk storage system, cached into 100 Megs of wafer RAM, each in turn cached into 1 Meg of fast static RAM.

Beyond that it's just a question of when the technology of light begins to replace that of electricity completely. For the ideal memory system too, whether it be based on the conventional architecture of parallel processing or some neural configuration, would ideally run on optical processors. And yes, work's going on in that area too – but it's all behind closed doors.

### Integrated machines...

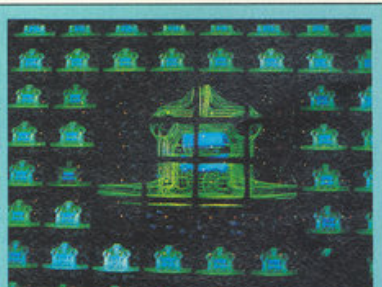
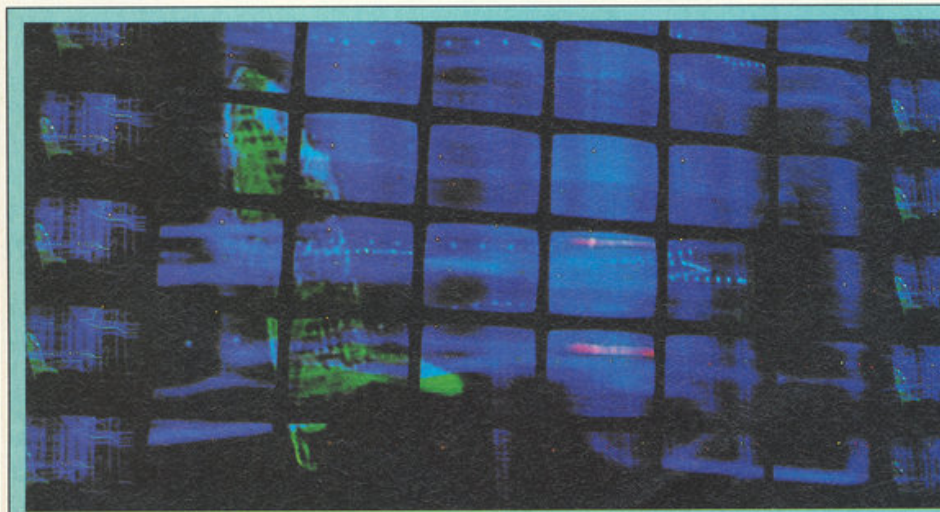
Whatever the memory and storage capabilities of the machines around in 1999, it's likely that they'll become increasingly compact and lightweight.

As such there'll be no distinction between a desktop and laptop/portable computer – the use of smart cards will remove the need for everything except a display and means of input. You'll view applications running on the compact computer of 1999 using a colour gas plasma screen with a full bit-mapped display powered by the monitors own on-board RAM.

There'll be no dots or pixels though – lines will be real lines, polygons real polygons – software addressing library images rather than screen locations. Touch screen technology, already here for machines as humble as the ST, will replace the mouse until such a time as voice recognition systems remove the need for mouse/keyboard input entirely.

Future developments in displays by 1999 might include primitive holographic capabilities but these are still a long way off.

However the machines of 1999 will represent more of what we define as the complete low-cost



• A couple of shots from the trip to Jupiter mission based in Toronto. Here you are presented with a complete environmental simulation of shuttle voyage through the solar system with you sat in converted flight sim hydraulic cinema screening back-projected 70mm footage shot by Lucasfilm. Could cut-down versions of similar simulators find their way into our homes complete with surround-a-sound ambionics and wall sized hi definition television?



# The shape of games to come

workstation of today. Besides having your portable, high-definition laser printer, your workstation will include faxcard and answerphone in a PC bundle for PCW prices.

But as compact optical disk technology becomes the new all-embracing medium – replacing the old magnetic media of video tape and cassette – it's also conceivable that the computer will merely become a dedicated peripheral of a larger optical disk based entertainment centre for the home.



• It's already possible to scan hi-res images into DTP and Art packages for manipulation everywhichway you want. Icon-driven applications allow even a novice user an easy means of navigating complex information retrieval systems. By 1999, optical disk systems will enable you to manipulate realtime video applications straight off the TV. In fact, the distinction between the PC, TV, CD and VT will have blurred to the point where all you have is a single unit.

Beyond that, the use of sophisticated smart cards will result in the computer as we know it disappearing from the desktop, and for that matter the laptop, altogether. There's no reason why mainframe systems shouldn't be accessible just like phones or electricity – just plug-in-and-go terminals in every home and workplace running integrated software accessed by your very own Profile card with its on-board neural networks.

## ...and integrated software

Apple Computers have probable done more than any company to change the way in which we use our machines. Its mouse-driven, icon and window system of 1982 based on the WIMP system developed by Rank Xerox released would-be users from the incomprehensibilities of MSDOS style command line inputs.

So successful was the interface, that it, and very similar systems are available for all personal computers. But WIMPs are only part of the progress in opening up the area of computing to the ordinary Joe in the street.

Natural language processing and the ability to generate ready to run programs from everyday English are the central tenets of fifth generation systems under development in Japan. Programming as a concept is likely to be replaced by Scripting – the crucial distinction being that you describe What you want to achieve rather than How you want it achieved.

By 1999 we might see something like Microsoft's DDE protocol as universal. DDE is a standard intended to be used by all software developers who write applications for the multi-tasking Windows WIMP system available for PC compatibles. Instead of choosing an integrated software package comprising word processor, database, spreadsheet and business graphics, you may pick and choose applications as you wish. The point being that the DDE data file standard allows you to load data files from any one company's application into and between those of others.

But this scenario is itself likely to be replaced by the ultimate integration. User-dedicated, intuitive neural computers running one application package that grows with your needs.

All we need to speculate on now is what the Dixons of the future will look like. Robot salesman probably wouldn't be a lot different to those manning the outlets now. Maybe even a bit more human if it comes to that! ●

*Imagine what computer games will be like in ten years time – keep those thoughts in mind, and see how they shape up with Rik Haynes' predictions of computer gaming in 1999...*

If all those cyberpunk novelists are to be believed, playing a game in 1999 may well entail becoming one with your machine, and experiencing life-like computer simulations which are impossible to differentiate from the real thing. But are these predictions science fiction or science fact?

## Where from...

Spawned by the huge popularity of dedicated arcade games coin-ops in the late seventies, computer entertainment in the home really took off in the early eighties with dedicated games consoles and microcomputers selling in their millions.

Rapid hardware development ensued over the next few years, with outstanding audio-visual improvements, greater memory and faster (more powerful) microprocessors.

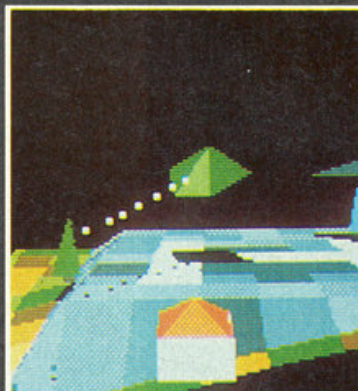
By the mid-80's console popularity had all but gone, to be replaced with micro fever – mostly in the guise of buying a micro to teach the kids computing, which actually translated into buying a micro so the kids could play the latest coin-op conversion.

## What about the software?

Despite the rapid developments in games hardware in the eighties, there has been far less evolution in games software. The same basic themes (shoot'em-up's, text adventures, platform games, maze games, role-playing games, machine simulations, sports simulations, exploration games, board games) have existed for years. Sure, each genre has undergone constant redefinition and enhancement – but very few original games have been developed over the years. Probably the most original title released for micro computers has been *Tetris*, a highly addictive and totally simple game from the Soviet Union of all places!

## Where now...

The present craze for games software is coin-op conversions, with micro owners everywhere ever eager to play the latest coin-op smash on their humble machine. Perhaps this is the best indication as to why the games console is back with a vengeance, with major Japanese multi-nationals



• *Virus by Firebird*, an indicator to the future of gaming software?



• The 16-bit Sega Megadrive, an indicator to the future of gaming hardware?

producing consoles with the pulling power to sell millions of units of hardware and software in a single day.

Using the current console boom as a possible indicator, our predictions for games hardware and software are informed guesses on what it could be like to play a game in 1999...

Games would be run on advanced console decks, utilising massive high-definition displays (possibly with holographic capabilities), multi-channel stereo audio with CD (and better) quality, all hooked up to neuro-sensory equipment with all round environment control, with the player experiencing sensations indistinguishable from the real thing.

Games would be stored on sleek smart cards (the size of current credit cards). These robust little cards would instantly load into your deck.

Another exciting development would be the ability to interact with other players around the globe using worldwide on-line games networks.

We expect no radical developments in the games software itself – based on the lack of development in this area thus far. What we do expect however, is far greater realism,

made possible by hardware advancements in speed and audio-visual quality – a logical extension of the hardware technology we currently possess, with just a few tweaks and surprises to keep things interesting.

Let's hope games designers prove us wrong...

## THREE WAYS GAMES COULD GO...

### Interactive Cinema

US software company Cinemaware is already laying the foundations for micro controlled interactive games using CD-ROM technology. It currently has a PC/CD-ROM set-up playing an enhanced version of its most popular strategy action game, *Defender of the Crown*. This version has improved audio, but future developments will undoubtedly include visuals pulled from the CD as well.

In addition, as links with the movie industry grow closer – *Robocop* being a perfect example of this liaison – pictures and sounds grabbed directly from the film could be used inside the game. Unfortunately this audio-visual improvement may overshadow further development in gameplay.

### On-Line Adventures

Of course there are already examples of this type of game system in-use today, with MUD being the most obvious example. Developments in this field could include not just text adventures, but also full graphic adventures if digital telephone lines are installed on a massive basis. The problem area with this way to play, is the cost and speed at which it operates. Current costs are prohibitive to the majority of users, so imagine the possible costs involved with setting-up and running a digital system. Hopefully, advances in technology should sort out any speed problems.

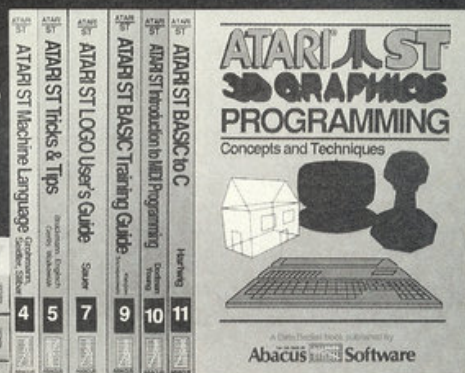
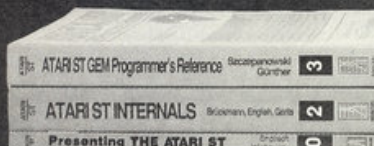
### Multi-user shoot'em-ups

Using the same principle as on-line adventures, digital phone lines could also provide the audio-visual quality needed to produce decent shoot'em-ups. Speed would be even more of a problem, as will on-line charges.



# BESTSELLERS

...from the premiere  
ST book publisher



What reviewers say about Abacus Books:

On ST Internals:

...will not be going any farther than arms reach from my computer...ST Applications  
...the best and most useful volume out so far...can't afford not to have it.—STart,  
Dewitt Robbeloth

On GEM programmer's Reference:

Anyone interested in learning how to manipulate the VDI or the AES will want to have this book at their fingertips...—ST Applications, Richard Kaller  
The next most important Abacus book...  
—STart, Dewitt Robbeloth

## Presenting the Atari ST

Gives you an in-depth look at this sensational new computer. Learn about the architecture of the ST, working with GEM, the mouse, operating system, all the various interfaces, the 68000 chip and its instructions, LOGO. 180pp £14.95

## ST INTERNALS

Essential guide to the inside information of the ST. Detailed descriptions of sound and graphics chips, internal hardware, I/O ports, using GEM. Commented BIOS listing. An indispensable reference for your ST library. 450pp £16.95

## ST Machine Language

Program in the fastest language for your ATARI ST. Learn 68000 assembly language, its numbering system, use of registers, structure & important details of instruction set, and use of internal system routines. Geared for the ST. 280pp £16.95

## Atari ST for Beginners

Written for the firsthand ST user. Get a basic understanding of your ST. Explore LOGO and BASIC from the ground up. Simple explanations of the hardware and internal workings of the ST. Illustrations, diagrams. Glossary. Index. 200pp £14.95

## GEM Programmer's Ref.

For serious programmers needing detailed information on GEM. Presented in an easy-to-understand format. All examples in C or assembly language. Covers VDI and AES functions. No serious programmer should be without. 410pp £16.95

## ST TRICKS & TIPS

Fantastic collection of programs and info for the ST. Complete programs include: super-fast RAM disk; time-saving printer spooler; color print hardcopy; plotter output hardcopy; creating accessories. Money saving tricks and tips. 260pp £16.95

## ST Disk Drives - Inside and Out

As the foremost publisher of ST books, we announce the newest volume in our continuing ST Reference Library series—**ST Disk Drives - Inside and Out**. This book includes chapters on files, file structures and data management. Thoroughly discusses the floppy disk, the hard disk and the RAM disk both from a programming and a technical perspective. Includes several full-length utilities and programming tools that enable you to further explore to ST disk drives. 450pp £18.95

## ST LOGO User's Guide

Take control by learning ST LOGO—the easy to use, powerful language. Includes: file handling, recursion, Hilbert & Sierpinski curves, 2 & 3D function plots, data structure, error handling. Helpful guide for LOGO users. 375pp £16.95

## Intro to MIDI Programming

Discover the magic of MIDI! Learn MIDI programming, how to program your synthesizer, how to buy MIDI software, how to buy a synthesizer, use extended BIOS. Includes source code for ST music box auto-player from Xlent Software. 250pp £16.95

## ATARI ST ST Disk Drives



Inside  
and Out

A Data Decoder book from  
Abacus Software

## ST BASIC Training Guide

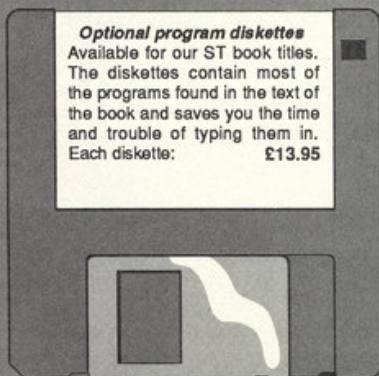
Thorough guide for learning ST BASIC. Detailed programming fundamentals, commands descriptions, ST graphics & sound, using GEM in BASIC, file management, disk operation. Tutorial problems give hands on experience. 316pp £14.95

## ST BASIC to C

Move up from BASIC to C. If you're already a BASIC programmer, you can learn C all that much faster. Parallel examples demonstrate the programming techniques and constructs in both languages. Variables, pointers, arrays. 230pp £14.95

## Optional program diskettes

Available for our ST book titles. The diskettes contain most of the programs found in the text of the book and saves you the time and trouble of typing them in. Each diskette: £13.95



For More Information:

Distributor  
Computer Bookshops Limited  
021-706-1188

Look for these Abacus titles in your  
local bookstores and computer stores.

you can count on  
**Abacus**



5370 52nd Street SE, Grand Rapids, MI 49508  
In U.S. Call (616) 698 0330



# Comms and goes

*Fancy a go at comms? The range of software and books available is staggering. To give you the best of both worlds, two new books come with the PC software they describe included. How do these software packages-cum-manuals-cum-books shape up? Eric McBride investigates...*

## ON-LINE WITH BITCOM

BUD E SMITH • £34.75 (inc. software) •  
COMPUTER BOOKSHOPS (021 706 1250) • ISBN  
0-553-34669-4

Many would-be comms freaks armed with PC, modem and software are left wondering just how it all fits together. They have everything necessary for a session on-line except one vital ingredient - knowledge. Which file transfer protocol should they use? How can secondary tasks be executed whilst the software is on-line and what if they want to automate some of the more boring processes associated with logging on to bulletin boards, such as passing passwords and user I.D.s etc.?

This book takes care of all that by providing you with the well-known communications package BitCom on disk and a clearly written textbook which deals with all parts of the program, how to get the most from the more advanced features, and yet assumes no knowledge on your part.

The book opens with an introduction to the software and details the hardware requirements necessary to run the package. Next comes a general description of just what a communications program does, specifically what the BitCom program can do for you in your electronic endeavours to communicate.

The BitCom program isn't copy protected so you are encouraged to make a back-up copy and to store the original in a safe place - the Americans seem to have a much more enlightened attitude to personal back-ups of software packages.

The book makes no assumptions about your prior knowledge, consequently, almost every chapter is simple to grasp, yet very informative and comprehensive.

Sections covering every aspect of communications follow each other in logical order. After the initial overview, you are taken through bulletin board systems and the on-line world in general, a guided tour of BIX which is one of the largest information providers in the States (this is of limited value in the UK, but does make for interesting reading). Sending and receiving text and program files is an area in which a lot of confusion can arise. On-line With BitCom provides a complete description of all available protocols for file transfer making the whole process simple and painless. Remember, the book is not dealing with abstract concepts, but with the actual software that's running on your PC.

On-line With BitCom is an excellent introduction and thorough step-by-step guide to all things comms. Unfortunately, one or two of the topics discussed apply only to those using a modem in the USA such as the information service BIX, but don't let that put you off - for your money you get an excellent comms package and jolly good textbook.

★ ★ ★

## THE COMPLETE ELECTRONIC BULLETIN BOARD STARTER KIT

BOWEN & PEYTON • £36.95+VAT (inc. software) •  
COMPUTER BOOKSHOPS • ISBN 0-553-43552-4

There is a lot of interest in the world of comms at the moment. Ordinary computer users are buying modems and the software to drive them and are logging on to bulletin board services and public information providers such as Prestel up and down the country.

Fine, but what if you want to run your own bulletin board? Where do you start, what do you need and will you be able to use your existing machine? This new book by Charles Bowen and David Peyton is based around an actual bulletin board package - the RBBS-PC by Tom Mack - and details everything you need to know about setting-up and running a board on your IBM-PC or compatible.

The first departure from the usual text on comms is that the RBBS-PC software is included with the book - that's right! The full package and all the source code written in BASIC, to allow you to modify and mould the board to suit your needs. It comes in the form of two archived files contained on 5.25 inch disk which, once un-arc'd, can be listed and examined, changed and re-compiled to produce a bulletin board that's just the way you want it.

The book begins with an overview of the bulletin board 'movement' written in the 'feeling good 'n' getting groovy' style of transatlantic authors. From there, you are told in clear and concise American

English how to configure the board for your computer system.

The first three chapters deal with the question of necessary hardware, what to look for when buying a modem and how to un-arc the software disks so that you may use the programs contained thereon, and you will find yourself quickly becoming conversant with the concept of the bulletin board.

Chapter 6 shows you how to run the board in test mode to allow you to log on as if you were a caller to the board. You can examine and leave messages, create dummy records and generally rummage around. After that, it's time to switch on and wait for your first real caller.

The final chapters of the book make up a complete technical reference manual to all aspects of the RBBS-PC software package written by the author of the software himself. Contained within are such valuable snippets as what to do if you don't have a Hayes compatible modem (Hayes is a modem manufacturer whose modem command language has been adopted as an un-official standard amongst modem manufacturers) and patching the BASIC source code.

For anyone who fancies starting their own BBS, this book is highly recommended.

★ ★ ★ ★

## GET THE MOST OUT OF COMPUERVE

BOWEN & PEYTON • £20.45 • COMPUTER  
BOOKSHOPS • ISBN 0-553-34707-1

Let me say at the outset that this book will be of limited use to anyone using a modem based in the UK. The book details the history and capabilities of America's largest electronic bulletin board and information provider, CompuServe.

CompuServe began life in Columbus, America back in 1969 as a method of leasing computer time and data storage facilities to corporations and local government. After 10 years of life CompuServe opened its silicon doors to the new breed of small computers known as home micros. Computer users all over the States could call up CompuServe, contact other users, upload and download information and generally interact on-line with the largest information service in America.

At explaining its subject, the book excels. Chapter after weighty chapter detailing every aspect of CompuServe. If this was the States, I wouldn't hesitate to award the book five stars, but in the UK this is for real fans only. Interesting though it is, two stars will have to suffice.

★ ★ ★







# FUTUREPLACE COMPUTERS

TELEPHONE 01-692 8700

ATARI AND AMIGA SPECIALIST

SOUTH EAST LONDONS LEADING DISCOUNT STORE



## ATARI COMPUTERS

ATARI 520STFM Explorer Pack .....	£279.99
ATARI 520STFM Super Pack .....	£349.00
ATARI 1040STFM .....	£459.00
MEGA ST 2Mb .....	£869.00
MEGA ST 4Mb .....	£1179.00

## ATARI MONITORS

SM 124 Hi-Res Mono .....	£99.00
SM 1224 Med-Res Col .....	£379.00

## AMIGA COMPUTERS

AMIGA A500 .....	£369.00
AMIGA A500 Professional Pack .....	£389.00

## AMIGA MONITORS

1084 Med Res Col .....	£279.00
1900M Mono .....	£94.00

## ATARI AND AMIGA PERIPHERALS

<b>CLOCKS</b> Real time LCM2400 .....	£38.99
<b>DISK DRIVE</b> Cumana 1Mb .....	£99.99
<b>HARD DRIVE</b> Triangle 40Mb .....	£649.00
Triangle 20Mb .....	£449.00
<b>MIDI</b> - Casio CZ230S with PSU .....	£259.00
<b>MODEMS</b> - Demon II .....	£85.00
Linnet V21/V23 .....	£139.00
<b>SCANNERS</b> Cannon c/w I/F .....	£1130.00
<b>SOUND DIGITISERS</b> ST Sound Sampler .....	£59.99

<b>DISK DRIVE</b> - Cumana 1Mb .....	£99.99
<b>MIDI</b> - Midi Master .....	£34.00
<b>SOUND DIGITISERS</b> - Futuresound .....	£169.00
<b>GENLOCK</b> - Graphics/Video mixer .....	£269.00
<b>AMIGA A501 RAM EXPANSION</b> <b>UPGRADE AND CLOCK</b> .....	£139.00

## 30% OFF LEISURE

### SOFTWARE

#### Example

Dragon's Lair (AM) .....	£31.50
Galdregons Domain .....	£14.00
Rocket Ranger .....	£21.00
Purple Saturn Day .....	£17.50

### WHERE ARE WE?

We are situated on the main A20 between New Cross and Lewisham opposite the Angel public house. By B.R. Lewisham, turn right on the main road and continue along for about 5 mins, we are on the right hand side.

## BLANK DISKS

10 3.5" .....	£8.90
25 3.5" .....	£22.00
50 3.5" .....	£43.00
100 3.5" .....	£84.00

## ALSO AVAILABLE

Acorn Amstrad Citizen Star Epsom Commodore, Atari. Business software storage boxes cables books joysticks and many many more. If you dont see what you want just ring. Export facilities available. Trade and educational enquiries welcome. All callers welcome.

SHOP HOURS: MON - FRI  
10 - 6 SAT 9 - 6. WHY NOT COME  
AND VISIT US ???

## SPECIAL DEALS

PHILIPS CM8833 .....	£235.00
STAR LC10 COL .....	£245.00
CITIZEN 120D .....	£138.00
CITIZEN 180E .....	£159.00

## HOW TO ORDER

We accept Visa Access Amex and Diners Club. Either write or telephone your order. Orders are normally despatched next working day. All prices include VAT. Please add £1.00 P&P for all software and blank disks. All other orders under £50.00 please add £1.50. Prices correct at time of going to press. All chqs payable to **Futureplace Limited.**

# FUTUREPLACE COMPUTERS

12 LOAMPIT HILL  
LEWISHAM, LONDON SE13 7SW.  
01 692 8700

MAIL ORDER





# First things first

*If you're new, or fairly new, to computers, there's nothing quite like the excitement of unpacking a new machine and setting it up for the first time. Especially if it's your first, or a substantial upgrade to your existing computer. Peter Worlock guides you through those first crucial minutes...*



Once you've unpacked all the boxes, check to see that all of the various bits have been included, especially power cables and connecting cables (printers never come with an interface lead - you have to supply your own).

Before you start plugging things together, always have a look at the manual to make sure there are no hidden pitfalls. Printers usually have travelling screws, for example. If you don't remove these you could do damage when you try to use the printer. Even if everything looks straightforward, a quick look at the documentation won't hurt.

Assembling computer equipment is usually a simple matter of plugging bits into other bits and there's small potential for disaster. However, it's always worth touching something large and metallic (a filing cabinet does nicely) to ground yourself for static before touching any exposed bits like circuit boards, or cable connectors.

It should go without saying, but we'll mention it anyway: make sure that everything is disconnected from the mains, and all on/off switches are off, before you start.

Once all the bits are identified and correctly plugged together, check your manual again. Some peripherals, and some computers, are fussy about what gets powered on first. The Commodore 64, for example, can be a bit uppity if you don't turn on printers before you turn on the 64 itself. The reason is that computers often check to see what peripherals are attached at boot-up and they can only be identified if they're turned on before the computer.

Finally, you turn on the power and everything works. Lucky you.

But sometimes it won't work, and that's when things get interesting.

There are symptoms of problems which brook no argument. If things explode, belch flame and

smoke, screech, emit green slime or generally behave like something from a technophobe's nightmare, switch everything off, unplug the offending article, and prepare for the long trek to the dealer.

## Houston, we have a problem

More often, though, the only sign that something is wrong is that nothing happens. Even things that are supposed to happen don't happen. So try the following:

- Visually examine all the connections and make sure everything is securely plugged in. If anything looks loose, power everything off and then you can physically adjust cables and connectors.

- Check that all power indicators are lit. If any aren't, make sure that the cable and connector are secure, then check the fuse. Two points here: don't use 13 amp fuses with computer equipment. Generally a 3 or 5 amp fuse will be correct. Also, some devices have an internal fuse so you'll need to check that too.

- If you have what seems to be a dead monitor, try to check it against something else - another computer, or a video recorder. If it doesn't work there, you have a genuinely dead monitor but the fault may be with the computer's video adaptor (try the computer with a TV) or with the cable.

- If the offending item is a printer that shows power-on but won't work from the computer, use the built-in self-test. All printers have one - details will be in your manual. If this works, again there are two possibilities: either the cable is at fault, or the computer's interface has died.

- If you have added something to your existing system and the computer itself is malfunctioning, remove the new equipment. If the computer works again, try carefully re-installing the offending item. Expansion boards are particularly dodgy in this area since it's quite easy for a slightly mis-fitting board to create short-circuits or to nobble the computer in other ways.

If you're thinking of upgrading, these problems are the best reason for keeping the current machine before you have the new one up and running. Your existing system might allow you to try things like printers, monitors and external drives from both the old and new machines.

## What should you do with a dead computer?

If your new pride and joy is truly dead, return it to your dealer. What happens next depends on the manufacturer, the dealer, and how long you've had it.

The best manufacturers and dealers will immediately offer you a brand new replacement. Others will only offer that if you return the offending item within a short period of the actual purchase - usually two weeks. For this reason, if you buy a computer as a gift for someone it's worth testing it before you put it safely away until the big day. If it is dodgy, the big day may be too late.

Should your brand-new dead computer be a Commodore 64, simply pack everything into the appropriate boxes and return them to your dealer. You need explain nothing since the presence of C64

boxes in your arms will tell him all he needs to know.

The unfortunate fact appears to be that while Commodore's C64 quality control department was having lunch last year, several thousand machines slipped quietly out of the factory. Dealers have been reporting that as many as half of these C64s have been pronounced Dead On Arrival.

If you return the computer within the grace period, the dealer must give you a replacement, or a cash refund. The dealer may offer to send your duff machine off for repair. You don't have to accept this, and probably shouldn't. You've paid for the equipment and you have a right to have a fully working system, immediately. If the dealer can't offer you one, it's up to you whether you want to wait or not,

but you are perfectly within your rights in demanding your money back so that you can go to another dealer and buy a working machine.

Do not be fobbed off with a credit voucher. If the dealer says it isn't policy to give refunds, point out that the law says he has to. Threaten lawyers, trading standards authorities, letters to the press, and Esther Rantzen. But try to be polite and don't get abusive - after all, the dealer in his turn is being shafted by the manufacturer.

And note that this only applies to dead or otherwise unusable equipment. If you just happen to have changed your mind, or have bought the machine for someone else and found they don't want it, or got one from their rich Uncle Sid, that's your problem.

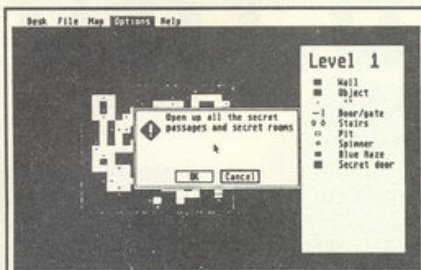


# SOFTWARE EXPRESS

For  
AMIGA and ATARI  
(021) 643 9100



## DUNGEON MASTER EDITOR



Bashing your head characters against a dungeon wall?  
At last, the answer is here to all those frustrating late nights!  
**The Dungeon Master Editor**

from Softex

Create shortcuts, new passages etc.

Open doors without keys!

Remove secret doors!

Print out maps of all fourteen levels!

# £9.95

(Disk & Book P&P £1.00)

Also includes the revised "Way of the Firestaff" with the "List of Spells", Character Attribute Chart, even more hints and tips and a brand new set of maps.

Available for the Atari ST and Amiga

As reviewed in ST Action (December 1988)



### MIDLANDS

212-213 Broad Street,  
BIRMINGHAM, B15 2JP  
Tel: (021) 643 9100

For the best in  
Service & Support,  
visit our  
Regional Branches

### SOUTH

9 Exeter Street, (The Viaduct),  
PLYMOUTH, Devon, PL4 9AQ  
Tel: (0752) 265276

SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER

# PUBLIC APOLOGY

We at M.D. Office Supplies would like to take this opportunity to apologise to all its competitors.

We shall, with immediate effect supply,  
COMPUTER DISCS AND STORAGE BOXES ETC.,  
AT BELOW WHOLESALE PRICES

JUST LOOK AT THESE AMAZING OFFERS

## 5 1/4 5.25" DISCS & BOXES 5 1/4

25 5.25" DS DD 96 TPI with 50 Capacity Lockable Storage Box .....	£12.49
50 5.25" DS DD 96 TPI with 100 Capacity Lockable Storage Box .....	£18.49
75 5.25" DS DD 96 TPI with 100 Capacity Lockable Storage Box .....	£23.49
100 5.25" DS DD 96 TPI with 100 Capacity Lockable Storage Box .....	£29.49
200 5.25" DSDD 96 TPI with 2 100 Capacity Lockable Storage Boxes .....	£54.99

ALL DISCS ARE CERTIFIED 100% ERROR FREE  
AND ARE SUPPLIED WITH FULL USER SETS

AT M.D. OFFICE THE BEST COST LESS

## 3 1/2 3.5" DISCS & BOXES 3 1/2

25 3.5" DS DD 135 TPI with 40 Capacity Lockable Storage Box .....	£22.95
35 3.5" DS DD 135 TPI with 80 Capacity Lockable Storage Box .....	£31.95
45 3.5" DS DD 135 TPI with 80 Capacity Lockable Storage Box .....	£37.95
55 3.5" DS DD 135 TPI with 80 Capacity Lockable Storage Box .....	£44.95
65 3.5" DS DD 135 TPI with 80 Capacity Lockable Storage Box .....	£49.95
75 3.5" DS DD 135 TPI with 80 Capacity Lockable Storage Box .....	£59.95

ALL DISCS ARE CERTIFIED 100% ERROR FREE  
AND ARE SUPPLIED WITH LABELS

### ACCESSORIES

3.5" 40 Capacity Lockable Box .....	£4.95
3.5" 80 Capacity Lockable Box .....	£6.95
5.25" 50 Capacity Lockable Box .....	£5.95
5.25" 100 Capacity Lockable Box .....	£6.95
3.5 or 5.25 Head Cleaner £2.95 only if ordered with other goods	
Mouse Mats £2.95 only if ordered with other goods	

### BULK BUYERS

250 DSDD 5.25" .....	£64.99
500 DSDD 5.25" .....	£119.99
1000 DSDD 5.25" .....	£219.99
150 DSDD 3.5" .....	£110.00
250 DSDD 3.5" .....	£169.99
500 DSDD 3.5" .....	£316.99

### PRICE AND QUALITY GUARANTEE

All our Discs are top quality products and are certified 100% error free. Should you ever see a comparable product advertised in this magazine at a lower price we will not match it we will BEAT IT GUARANTEED



## M.D. OFFICE SUPPLIES

18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS  
TELESALES HOTLINES: 0689 61400



All prices include VAT and Delivery UK only

Supplied subject to availability. E & OE

SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER



# 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:

- ★ 520 STFM 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.**

### 1040STFM Super Pack

**£439.00**

*Includes everything in the Atari 520 STFM Super Pack but with the 1 megabyte memory 1040 STFM Keyboard*

### 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.
- ★ £385 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.

### MEGA 1 BUSINESS PACK

**£529.00**

#### Features:

- ★ Separate Keyboard and System Unit
- ★ All the Software included with 1040 STFM Business Pack.
- ★ Blitter chip installed for faster graphics  
Inc SM124 Mono Monitor..... £628.00

### ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DS DD Disks
Competition Pro 5000 Joystick.....£13.95	Box of 10.....£13.95
Competition Pro with Autofire.....£14.95	Memorex Disk Box
Konix Speedking Joystick.....£11.95	For 40 3.5" Disks.....£8.95
Red Mouse Mat with Amiga logo.....£6.95	Amiga A501 1 Meg Expansion ..£139.99
Plain blue Mouse Mat.....£5.45	Amiga A501 + Dragon's Lair.....£169.99

### PRINTERS

Star LC10 including interface lead for ST/Amiga.....£229.00
Star LC10 colour including interface lead for ST/Amiga.....£259.00
Citizen 120D including interface lead for ST/Amiga.....£159.00
<b>SEIKOSHA 80 COLUMN PRINTERS - AMAZING PRICES</b>
Seikosha 9 pin NLQ including interface lead for ST/Amiga.....£139.00
Seikosha 24 pin LQ including interface lead for ST/Amiga.....£279.00

### Amiga A500 System 1

**£365.00**

*Inc VAT and Next Day Delivery*

**Workbench 1.3  
£9.95**

#### 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

**£385.00**

- ★ Amiga A500 System 1 PLUS over £280.00 worth of software comprising 10 games, PLUS either SPRITZ or PHOTON PAINT GRAPHICS PACKAGE.

### Amiga A500 System 4

**WITH 500 FREE AIR MILES!**

**£449.00**

**NEW !**

includes everything in our Amiga System 1 package PLUS SPRITZ Graphics Package, disk storage wallet for 25 disks, Who Framed Roger Rabbit, Nebulus, Starray PLUS 500 FREE AIR MILES, enough for a return trip to PARIS, AMSTERDAM OR BRUSSELS!

### AMIGA 1 MEG!

**£499.00**

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 +

**£519.00**

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

### EXTERNAL DISK DRIVES

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

### MONITORS

Commodore Amiga A1084 Stereo colour Monitor inc lead.....£269.00
Atari SC1224 Colour Monitor inc lead.....£259.00
Atari SM124 Mono Monitor including lead.....£104.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga.....£249.00

### CREDIT CARD ORDERLINE ☎ 0908 78008 (Mon - Sat 9am - 6pm)

To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to Digicom Computer Services and send it with your order to the address below. Callers are also most welcome at the address below

**DIGICOM**

**Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ**  
**All prices include VAT and delivery by courier**







**With Pal TV  
Converter  
and TV Booster!**

**NOW ONLY £159.95 inc VAT (+ £5.00 P&P)**

MENTION TECHNICAL SERVICES guarantee that if we are out of stock of PC ENGINES when your cheque or Postal Order arrives:

No cheques will be cashed before the goods are available.

You will be informed of any delays immediately by first class post.

A FREE GAME WILL BE SENT WITH THE MACHINE!! (Any previous orders on the voucher scheme will also now receive this new offer!)

**MAIL ORDER ONLY**

**CURRENT SOFTWARE TITLES AVAILABLE (New Titles arriving next month)**

Shanghai.....	£24.95	Alien Crush.....	£24.95
Wonderboy.....	£24.95	The Legendary Axe.....	£24.95
Drunken Master.....	£24.95	Space Harrier.....	£24.95
Victory Run.....	£24.95	Dragon Spirit.....	£24.95
Chan & Chan.....	£24.95	Fantasy Zone.....	£24.95
World Stadium.....	£24.95	Vigilante.....	£24.95
R-Type I.....	£24.95	Son & Son II.....	£24.95
R-Type II.....	£24.95	Baseball Namcot.....	£24.95
Galaga '88.....	£24.95	Moto Roader.....	£29.95*
Nectaris.....	£27.95	Honey Sky.....	£29.95
Deep Blue.....	£29.95	R*47.....	£29.95
Dungeon Explorer.....	£29.95*	Tiger Heli.....	£29.95
Out Live.....	£29.95	Overhauled Man.....	£29.95
F1-Pilot.....	£29.95	Miss Momo.....	£29.95
World Court Tennis.....	£24.99		

(+ £1.50 P&P / Software order)

\* These Titles work on the 5 player adaptor which is also in stock for £19.95 (+ £1.50 P&P)

**SEGA MEGADRIVE AVAILABLE NOW ONLY £179.95 (+ £5.00 P&P)  
SIX SOFTWARE TITLES AVAILABLE BETWEEN £24.95 - 29.95**



**CD ROM UNITS ONLY £299.95 !!!  
(+ £5.00 P&P)**

**NEW!!! - THE PC ENGINE AND NINTENDO SUPER JOYSTICK FOR ONLY £24.95 (+ £2.00 P&P)**

**PC ENGINE VHS PREVIEW VIDEO CASSETTE (36 TITLES) ONLY £6.95 (+ £2.00 P&P)**

**We also sell a huge range of NINTENDO products. SAE for details**

SEGA Trade Enquiries Welcome

Cheques and Postal Orders / S.A.E. for details to:

**Mention**

29 Malcolm Place, Helensburgh. G84 9HW

Telephone: 0436 78827 for any other details. (Access & Visa Facilities soon)

Mention Technical Services bank with: The Royal Bank of Scotland, 2 Colquhoun Square, Helensburgh. G84 8SJ



# MEDIA GOLD

Atari ST and CBM Amiga, Public Domain and Software Specialist

**Guaranteed 72 hour turn around**

On all Software available

For FREE membership to the GOLD CLUB simply purchase any of the titles listed below from us. Gold membership means you will get an extra discount from our listed prices (which are already good value), you will also receive our P.D. Catalogue for ST or Amiga

**ATARI ST**

Ballistix.....	£15.00	Lombard Rally.....	£18.50	Run the Gauntlet.....	£15.00	Gunship.....	£18.50
Barbarian II.....	£15.00	Vindicator.....	£15.00	Last Duel.....	£11.50	Pac-Land.....	£15.00
Custodian.....	£15.00	Captain America.....	£6.50	Road Blasters.....	£15.00	Real Ghostbusters.....	£15.00
F.O.F.T.....	£23.00	The Deep.....	£15.00	Leisure Suit Larry II.....	£18.50	Police Quest II.....	£18.50
Prison.....	£15.00	Realm of the Trolls.....	£15.00	Zak McKracken.....	£18.50	Leisure Suit Larry I.....	£15.00
Falcon.....	£18.50	Steve Davis Snooker.....	£15.00	War in Middle Earth.....	£15.00	Chuckie Egg II.....	£15.00
Baal.....	£15.00	Blasteroids.....	£15.00	F16 Combat Pilot.....	£18.50	Borrodino.....	£23.00

**NOW IN STOCK POPULOUS .....£18.50**

**COMMODORE AMIGA**

Super Hang On.....	£18.50	Realm of the Trolls.....	£18.50	Batman.....	£18.50	Pac-Land.....	£15.00
Denaris.....	£15.00	Slipstream.....	£15.00	Prison.....	£15.00	Run the Gauntlet.....	£18.50
Precious Metal.....	£18.50	Baal.....	£15.00	War in Middle Earth.....	£15.00	Hybris.....	£18.50
I.S.S.....	£18.50	Dragon's Lair.....	£33.00	Fourth and Inches.....	£15.00	R-Type.....	£18.50
H.K.M.....	£11.50	Kennedy Approach.....	£18.50	Steve Davis Snooker.....	£15.00	Zak McKracken.....	£18.50
Tiger Road.....	£15.00	Operation Wolf.....	£18.50	Balance of Power 1990.....	£18.50		
Road Blasters.....	£15.00	Blasteroids.....	£18.50	Knight Hawk.....	£15.00		

**NOW IN STOCK POPULOUS .....£18.50**

**SPECIAL OFFER**

**3" Disks in Stock**

**10 DSDD 3" only £19.95**

**All disks include a FREE Library Case**

**PUBLIC DOMAIN DISKS**

**Amiga Demo Pack 1...£9.95**

**Amiga Demo Pack 2 ...£9.95**

**ST Demo Pack 1... £9.95**

**ST Demo Pack 2... £9.95**

**ALL OUR PD DISKS ARE £2.50 EACH**

We also have a large P.D. Library for ST and Amiga, price at only £2.50 per disk.

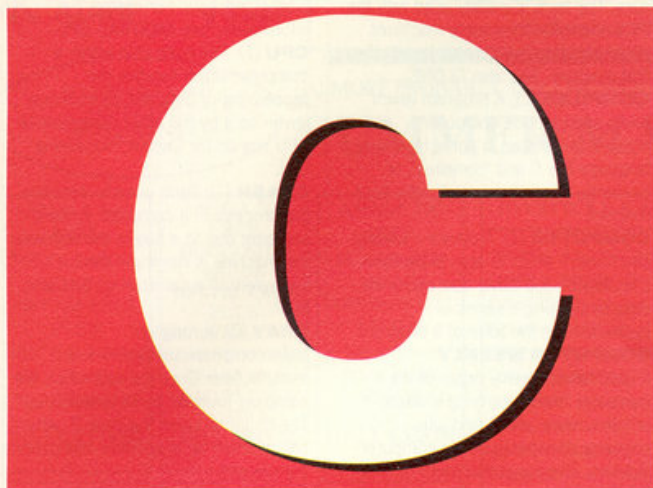
All software is available at time of going to press, any title not yet released can be ordered. All our orders are despatched by first class post (UK P&P included), Overseas add £3.50. Goldclub membership is £3.00 without a purchase. Access orders taken and despatched within 24 hours.



**Media Gold Access Orderline 0532 304384**  
**Dept. NCE, Marcon House, Wyther Lane, Kirkstall, Leeds, LS5 3BT.**  
**Written any P.D.? Send it in to us.**





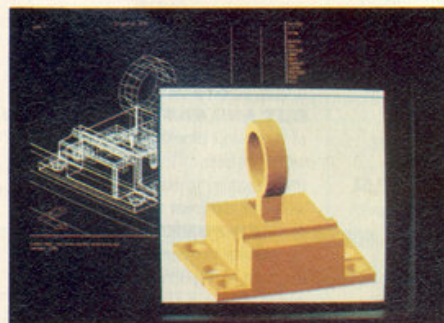


**C (L):** Programming language which evolved from BCPL and which – along with the Unix operating system, written for the most part in C – became incredibly popular in the early and middle part of the '80s. C is popular for its speed and portability, i.e. the ease with which it can be transferred to other machines and is available for most of the popular computers. Source code written in C has a reputation for being incomprehensible to anyone else, and often to the writers themselves. Here is an example of the language which prints the results of a calculation.

```
main ()
{
  int length, width, area, circum;
  length = 40;
  width = 30;
  area = length * width;
  circum = 2 * (length + width);
  printf("Length %5d\n",length);
  printf("Width %5d\n",width);
  printf("\n");
  printf("Area %5d\n",area);
  printf("Circumference\n");
  printf("%5d\n",circum);
}
```

**CACHE (T):** A portion of memory which is set aside to hold much-accessed parts of a hard disk, thereby limiting the number of disk accesses necessary and speeding up the overall computing time of a particular application.

**CAD (T):** Computer Aided Design. CAD applications programs allow the user to design complex structures on-screen, and then manipulate, rescale and eventually print the object. See also CAM.



• CAD packages allow the design and manipulation of complex structures on-screen

**CAM (T):** Computer Aided Manufacture. The process of manufacture using computer controlled machines or robots rather than humans. A well-known example is the low-end Fiat car manufactured entirely by robots. See also CAD.

**CAMBRIDGE COMPUTER (Co.):** The business alter-ego of Sir Clive Sinclair. The company is responsible for the design and marketing of the Z88, a laptop computer featuring built in word processing, database and spreadsheet software, which has become very popular with journalists and businesspersons on the move.



• Clive Sinclair's Cambridge Computer responsible for the popular Z88

**CAPTAIN BLOOD (G):** Programmed by French company Infogram, the game takes space trading to new heights with superb graphics and depth of play. The player can visit up to 32000 planets, meet aliens, trade or destroy them and generally cavort about the (un)known universe.

**CARRIAGE RETURN (T):** A.K.A. CR. The operation of forcing the next character to be printed on the left side of the screen or printer (it doesn't include moving one line downwards).

**CARRIER (T):** The continuous tone transmitted by a modem which is varied in pitch in order to send data in the form of 'intelligent' signals.

**CARRIER COMMAND (G):** Solid 3-D arcade strategy game involving a futuristic aircraft carrier and various other vehicles. The game is an excellent example of the multi-viewpoint game which allows the player to adopt several views and switch between them with ease.

**CARTRIDGE (T):** Plastic case which houses a read-only memory chip. The ROM holds a program and when the cartridge is plugged into the appropriate slot on the computer, the machine has instant access to the program. Cartridges usually hold 16K of program or data, but can be made to be larger by 'piggy-backing' extra memory on top. See also PIGGY-BACKING.

**CASIO (Co.):** Japanese electronics company responsible for a range of products such as calculators, but was one of the first companies to produce and market hand-held computers. The machines usually came with 1K or 2K of RAM and had a built-in BASIC allowing them to be programmed for real – albeit, cut down – applications.

**CATHODE RAY TUBE (T):** The technology which allows a monitor to display a picture. The cathode ray tube 'fires' a beam of electrons at the screen which is coated on the inside with phosphor. Electrons hitting the phosphor dots glow and the resulting pattern of dots makes the picture.

**CD-ROM (T):** Type of read-only memory employing the CD disk as a



• Outside the educational and music markets CD ROM has remained obscure

medium for storage. Although vast amounts of data can be stored and retrieved from the CD (e.g. whole encyclopaedias complete with illustrations) the technology has remained obscure in the computer market due to its relatively high price and the inability of the disks to be written to.

**CENTRONICS (T):** Brand name which is now used as a generic name (in the same way the brand name Hoover has replaced vacuum as a verb) to describe a parallel printer port. In the parallel printer port, the 'bits' of data are sent to the printer 7 at a time, rather than in the consecutive fashion of the serial printer port.

**CHEETAH (Co.):** Company which began life designing and marketing peripherals for the Spectrum range of computers and which progressed to MIDI keyboards upon the demise of the ZX Spectrum.

**CHESS (GG):** Probably the most programmed computer game ever. The first games ever written for computers were chess games, as the logic of the game can be easily translated into program instructions. Today, chess programs abound, and almost every machine can sport at least one chess program.



• Colossus Chess thrashes allcomers

**CHESS COMPUTERS (C):** Dedicated machines which offer the game of chess at various levels of difficulty. The first chess computers were large and not very adept at the game. Nowadays, a machine powered by batteries which can be held in the palm of the hand, can offer many levels of difficulty and thrash all but the most accomplished of players. Large chess computers have reached the levels where they can occasionally beat Grand Masters.

**CHIP (T):** Tiny slither of silicon which is etched with many thousands of discrete components, such as transistors and resistors, encased in plastic with metal legs to allow connection to the outside world, and then placed in circuit.

**CHOPLIFTER (G):** Game based on the American Blue Light tactical operations squad's attempted attack on Tehran in order to free the American hostages being held there. The game features a helicopter controlled by the player attacking other choppers, tanks etc.

**CITIZEN (Co.):** Japanese consumer electronics company which produces a range of domestic electronic products, but is mainly known for its range of printers.



• Citizen 112 Laser printer

**CLICKING (T):** The process of pressing a mouse button to select something depicted onscreen. Also includes double-clicking – the rapid depression of the mouse buttons in succession.

**CLIP ART (T):** Phrase describing 'ready-made' pictures on disk which can be used to illustrate text in desk top publishing packages.

**CLONE (T):** Direct copy of a machine (usually the IBM-PC) by a



third party manufacturer. The clone machine can run all of the available software of the cloned machine, is significantly cheaper and offers more expansion slots or other incentives to tempt the would-be PC buyer.

**CMOS (T):** Stands for Complementary Metal Oxide Semiconductors and is a process of making metal oxide semiconductors which use almost no power and yet are much faster.

**COBOL (L):** Programming language developed in the late '50s, which was the first high level language aimed fairly and squarely at the business/data processing market. COBOL itself stands for COmmon Business Orientated Language. The language consists of English-like statements which are used to process salaries, employee records, stock – everything connected with the running of a business.

**CODEMASTERS (Co.):** Software house founded in 1986 by two young programmers, David and Richard Darling. The company is responsible for a range of cheap and cheerful budget games and gained a lot of media attention due to the age of the founders.



• Darlings of the budget world?

**COIN-OPS (GG):** Machines running computer games, gathered together in arcades and operated by a coin of the realm. Many of the most popular games are converted for use by home micros and regularly feature in the lists of wants by home micro users i.e. Oh! I wish someone would convert Afterburner for my Dragon with 64K add-on.

**COLOSSUS CHESS (G):** Superior chess game programmed by David Bryant who was responsible for the popular White Knight on the BBC computer. The game beat every other chess game of the day hands down when first launched. Colossus Chess has evolved through several versions and is currently Colossus Chess X, featuring smooth animation of pieces in the form of characters and a multitude of view points for the board.

**COMMANDO (G):** The first in a popular line of coin-op conversions from Capcom, in which you adopt the role of a homicidal commando slaughtering hither and thither. The game enjoyed a long run and high position in the charts.

**COMMODORE BUSINESS MACHINES (Co.):** The company which began as a manufacturer of typewriters, moved to calculators in the '70s and eventually began to produce computers. Beginning with

the PET in 1977, the VIC 20 in 1980 and moving through the phenomenally successful C64 launched in 1982, the company built up an excellent reputation and large following in the home micro market under its guiding light Jack Tramiel. In 1984, Tramiel resigned as Commodore's chief executive and went on to buy Atari. After a wobbly start under new management, the company released the Amiga range of machines 1986. At first, the computer lacked large sales due to the popularity of Atari's rival machine the ST, but now things are changing and the Amiga is becoming one of the most popular micros in the world ensuring the continued success of Commodore.



• Commodore bounce back with the Amiga

**COMMODORE AMIGA (C):** 16-bit machine launched by Commodore in 1986 which employs the Motorola 68000 as its CPU and various other custom chips handling graphics and sound. These provide the machine with superior capabilities when compared to similar computers. Three machines make up the range and these are the 500, the 1000 and the 2000. The 2000 offers IBM compatibility.

**COMMS (T):** Abbreviation for communications i.e. the process of linking two or more computers via some medium, usually a cable or the telephone lines, for the transfer of data, programs and so on.

**COMPAQ (Co.):** Manufacturer of IBM-PC compatibles for the business market. The company is also responsible for a range of lap-tops and luggables. Compaq remain relatively obscure in the UK marketplace due in part to the rather expensive pricing structure of its range but are seen by many as the cheaper but still up-market alternative to IBM.



• Just one of the many PC compatibles

**COMPATIBLE (T):** Used to describe machines which can make use of one another's programs and

data. The term is usually used with the PC to describe third-party machines which are directly compatible with the IBM machine. See also CLONE.

**COMPILER (L):** A program which takes source code computer instructions written in some high level language like C and 'compiles', or converts, them into code for the host machine.

**COMPUTER (T):** A device – usually electronic – which is able to perform calculations and other operations on data by obeying a series of instructions in the form of a program.

**COMPUTER WEEKLY (Publication):** Weekly organ of the computer trade, carrying in-depth articles, news, views and jobs involving all aspects of the computer industry. The paper has been running for 27 years.

**CONCURRENT (T):** Two or more processes carried out within the same specified time interval entirely independently of one another.

**CONSOLE (T):** Generic name describing a computer terminal i.e.

the part of the computer system that allows humans to communicate with the computer.

**CO-PROCESSOR**

(T): A second processor within a computer which takes over and is dedicated to some specified task i.e. the maths co-processor, which performs all the mathematical operations, thereby freeing the main processor and speeding up computing.

**COPY PROTECTION (T):** Method of making secure by physical or other means the programs and data contained on disk, tape etc. The actual method can follow many paths but usually involves the use of either a 'dongle' – an electronic device, which has to be plugged into the computer before the software can be run – or protection by programming methods to prevent stopping, listing or copying of the program.

**COTRA (P):** The Computer Threat Research Association. A group set up to research, investigate and combat the spread of virus programs. The association is made up of interested parties from users to large corporations.

**COUSENS, ROD (P):** Boss of Activision UK and well-known industry mouthpiece leading the fight against software plagiarism.

**CP/M (OS):** Control Program for Micros. Written by Gary Kildall in the late '70s, CP/M was the first operating system written especially for microcomputers, in particular, those using the Zilog Z80 CPU. CP/M takes care of such functions as input/output, screen displays and other housekeeping functions. CP/M evolved through many configurations in order to keep up with trends and developments in the micro market.

**CPC (C):** The Amstrad CPC range of

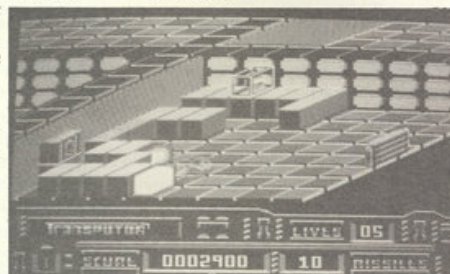
8-bit computers. For more information, see AMSTRAD CPC.

**CPU (T):** The main chip within a computer which handles the processing of data and instructions 'given' to it by the other components. CPU stands for Central Processing Unit.

**CRASH (T):** Term used to describe the process of a computer system stopping due to a bug in the software the machine is running – the equivalent of a car stalling. See also BUG.

**CRAY (C):** A range of supercomputers designed and manufactured by Cray Research Inc., the company founded by Seymour Cray. The range includes the Cray 2, which can process up to a billion instructions per second.

**CRAZY COMET (G):** Mindless shoot-em-up, notable for the involvement of Rob Hubbard who wrote the sound track. Its sequel became the first game to feature four channel sound and sampled speech on the C64.



• Blood 'n' gore or budget beauties?

**CRL (Co.):** The company responsible for a range of tacky horror games such as Jack the Ripper, Frankenstein and Dracula. The only moderate success of the company was Tau Ceti, a space trading game.

**CUMANA (Co.):** British company best known for its range of disk drives. The firm markets a range of drives both hard and floppy for almost every popular home/small business micro.



• Cumana from Nirvana

**CURSOR (T):** A position indicator taking the form of a highlighted block, blinking or flashing line which is displayed on a computer monitor.

**CUT AND PASTE (T):** The process of removing blocks of text within a word processor (cut) and transferring them (paste) to another part of the same or different document.

**CYBER-PUNK (GG):** Hacking subculture concerning a genre inspired by the film Blade Runner. The genre details a claustrophobic bleak vision of the future pioneered by writer William Gibson.





ACCESS/VISA CARD  
HOTLINE  
(0772) 452414

**HOMESoft (UK)**

## Software and Hardware



OPEN  
MON-FRI 9AM-6PM  
SAT 9AM-4PM  
CALLERS WELCOME

ALMOST PROBABLY THE CHEAPEST MAIL ORDER/RETAILER IN EUROPE

## SUMMER MADNESS SALE

<p>AMIGA 500 FREE MODULATOR MOUSE ART PACKAGE PLUS TEN TOP GAMES KICKSTART 1.3 WORKBENCH 1.3</p> <p><b>ONLY £379.00</b></p>	<p>AMIGA 500 FREE MODULATOR MOUSE ART PACKAGE PLUS MOUSE BRACKET 50 CAP DISK BOX MOUSE MAT 10 DD/DS DISKS JOYSTICK</p> <p><b>ONLY £385.00</b></p>	<p>AMIGA 500 FREE MODULATOR MOUSE ART PACKAGE * * WITH * * * 40% COLORS * * CD QUALITY * STEREO SOUND</p> <p><b>ONLY £355.00</b></p>
---	---	--

<b>ATARI</b> <b>MEGA ST1</b> <b>ONLY £520.00</b> WITHOUT MONITOR <b>ONLY £620.00</b> WITH MONITOR	<b>ATARI</b> <b>520STFM</b> <b>SUPER</b> <b>PACK</b>  <b>ONLY £340.00</b>	<b>ATARI</b> <b>520STFM</b> <b>EXPLORA</b> <b>PACK</b>  <b>ONLY £265.00</b>
--	--	--

<p>COMMODORE A501 1mb EXPANSION CARTRIDGE</p> <p><b>£130.00</b></p>	<p>COMMODORE A520 T.V. MODULATOR</p> <p><b>£19.99</b></p>
---	---

<p>WORKBENCH V1.3</p> <p><b>£14.99</b></p>	<p>1352 AMIGA MOUSE</p> <p><b>£31.50</b></p>
--	--

## JOYSTICKS & BLANK DISKS

COMPETITION PRO EXTRA.....	11.20
COMPETITION PRO 5000.....	9.50
CHEETAH 125+ .....	5.20
CHEETAH MACH 1+ .....	8.95
CHEETAH STARFIGHTER .....	9.55
QUICKSHOT II PLUS .....	6.50
QUICKSHOT II TURBO.....	8.95
KONIX NAVIGATOR .....	11.50
KONIX SPEEDKING.....	8.90
SPEEDKING + AUTOFIRE.....	9.20
>>>>>>>>>>BULK 3.5" DISKS<<<<<<<<<<	
KAO HIGH DENSITY DISKS - 10 .....	9.50
KAO HIGH DENSITY DISKS - 50 .....	45.00
KAO HIGH DENSITY DISKS - 100 .....	80.00
>>>>>>>>>>>>>>>>>>>>>>>>>>>><	
MOUSE MAT .....	3.99
100 CAP 3.5" LOCKABLE BOX .....	6.50
50 CAP 3.5" LOCKABLE BOX .....	4.50
200 CAP 3.5" POSSO BOX .....	14.90
FOUR PLAYER ADAPTOR (AMIGA).....	3.50
TWIN JOYSTICK EXTENSION LEAD .....	4.50
3.5" HEAD CLEANER .....	2.90
AMIGA PERSEUX DUST COVER .....	4.50

\* ALL A500's COME COMPLETE WITH BASIC AND TUTORIAL DISKS. ADD £10.00 FOR NEXT DAY DELIVERY

## 16 BIT SOFTWARE SUPER SAVERS

TITLE	AMIGA	ATARI ST
POPULOUS.....	16.80	16.80
ARCHELAGOS.....	14.30	14.30
LORDS OF THE RISING SUN.....	17.20	--
WANDERER 3D.....	--	--
BLOOD MONEY.....	14.30	14.30
FUN SCHOOL UNDER 6s.....	11.50	11.50
FUN SCHOOL 6 to 8s.....	11.50	11.50
FUN SCHOOL OVER 8s.....	11.50	11.50
FALCON.....	17.20	14.30
F16 COMBAT PILOT.....	14.30	14.30
STOS.....	--	18.50
COSMIC PIRATE.....	11.50	11.50
THE REAL GHOSTBUSTERS.....	12.50	12.50
ZAK MCKRACKEN.....	15.50	15.50
OPERATION NEPTUNE.....	14.50	14.50
WAR in MIDDLE EARTH.....	11.50	11.50
BARBARIAN II.....	11.50	11.50
VINDICATORS.....	--	11.50
KICK OFF.....	11.50	11.50
TIGER ROAD.....	--	12.50
TV SPORTS FOOTBALL.....	17.20	--
SUPER HANG ON.....	15.10	--
SPACE HARRIER.....	11.50	--
R-TYPE.....	15.10	--
ROCKET RANGER.....	17.20	--
TEST DRIVE II the duel.....	17.20	--
SWORD OF SODAN.....	15.10	--
BALLISTIX.....	11.50	11.50
ROADBLASTERS.....	12.50	--
AIRBORNE RANGER.....	--	14.30
PRECIOUS METAL.....	14.30	11.50
BALANCE OF POWER 1990.....	14.30	14.30
GAUNTLET II.....	15.10	--
DENARIS.....	12.95	--
CALIFORNIA GAMES.....	12.50	--
BAAL.....	11.50	11.50
GAMES - WINTER EDITION.....	--	13.20

16 BIT SOFTWARE	AMIGA	ATARI
1943 BATTLE OF MIDWAY .....	13.90	13.90
3D POOL .....	11.70	11.70
ALIEN LEGION .....	14.70	--
ALPHA MAX ONE .....	--	9.70
AMIGA GOLD HITS .....	16.80	--
ARCADE FORCE FOUR .....	--	16.80
ACTION SERVICE .....	11.70	11.70
ACTION ST .....	--	13.90
BATTLECHESS .....	16.80	--
BARBARIAN II .....	11.70	11.70
BATMAN .....	14.70	11.70
BATTLETECH .....	14.70	--
BATTLEHAWKS 1942 .....	14.70	14.70
BLASTEROIDS .....	14.70	11.70
BIO CHALLENGE .....	14.70	11.70
BOMBUZAL .....	14.70	14.70
BUTCHER HILL .....	13.90	13.90
CHAOS STRIKE BACK .....	--	9.70
CAPTAIN BLOOD .....	14.70	14.70
CAPTAIN FIZZ .....	9.70	9.70
CRAZY CARS II .....	14.70	14.70
CUSTODIAN .....	11.70	11.70
CYBERNOID .....	11.70	11.70
CYBERNOID II .....	11.70	11.70
DARK FUSION .....	13.90	13.90
DREAM ZONE .....	14.70	14.70
DRAGON NINJA .....	15.70	12.70
E. WEAVER BASEBALL .....	13.90	--
ELITE .....	14.70	14.70
EMPIRE STRIKES BACK .....	11.70	11.70
FIVE STAR COMPILATION .....	--	14.70
FANTAVISION .....	29.00	--
F.O.F.T. .....	18.70	18.70
FLIGHT SIMULATOR II .....	23.90	23.90
FLYING SHARK .....	14.70	14.70
FRIGHT NIGHT .....	11.70	11.70
GALDREGON'S DOMAIN .....	11.70	11.70
GALACTIC CONQUEROR .....	14.70	14.70
GAMES - SUMMER EDITION .....	13.90	13.90
GHOSTS 'N GOBLINS .....	13.90	13.90
GOLDRUSH .....	14.70	14.70

16 BIT SOFTWARE	AMIGA	ATARI
HELTER SKELTER .....	9.70	9.70
H K M .....	10.99	10.99
HOSTAGES .....	14.70	14.70
INTERNATIONAL KARATE+ .....	14.70	11.70
IRON LORD .....	16.80	16.80
JAPAN SCENERY DISK .....	12.70	12.70
JET .....	23.90	23.90
JOAN OF ARC .....	12.70	12.70
KENNEDY APPROACH .....	14.70	14.70
KENNY DALGLISH SOCCER .....	11.70	11.70
KRISTAL .....	17.70	17.70
LAND OF LEGENDS .....	17.70	17.70
LAST DUEL .....	10.99	10.99
LANCELOT .....	11.70	11.70
LED STORM .....	13.90	13.90
LOMBARD RAC RALLY .....	14.70	14.70
MANHUNTER NEW YORK .....	17.70	--
MAYDAY SQUAD .....	11.70	11.70
MANHATTAN DEALERS .....	14.70	14.70
MENACE (DRACONIA) .....	11.70	11.70
MINI GOLF .....	13.90	13.90
MICROPROSE SOCCER .....	14.70	14.70
MILLENIUM 2.2 .....	14.70	14.70
NEBULUS .....	13.90	13.90
NEATHERWORLD .....	13.90	13.90
NINETEEN PART ONE .....	11.70	11.70
ORBITER .....	14.70	14.70
OUTRUN EUROPA .....	10.99	10.99
OVERLANDER .....	14.70	11.70
PACMANIA .....	11.50	11.50
PIONEER PLAGUE .....	14.70	--
POOLS OF RADIANCE .....	15.90	15.90
POLICE QUEST .....	11.70	11.70
POLICE QUEST II .....	11.70	11.70
POLICE QUEST III .....	11.70	11.70
PRESIDENT IS MISSING .....	14.70	14.70
PREMIER COLLECTION .....	--	17.70
PRISON .....	11.70	11.70
PROSPECTOR .....	14.70	14.70
PROJECT D. BACKUP TOOL .....	29.50	--
PURPLE SATURN DAY .....	14.70	14.70

16 BIT SOFTWARE	AMIGA	ATARI
RAMBO III.....	14.70	11.70
RETURN OF THE JEDI.....	11.70	11.70
RENEGADE III.....	14.70	11.70
ROBOCOP.....	15.70	12.70
RUNNING MAN.....	14.30	14.30
SCENERY DISK NO: 7.....	12.70	12.70
SCENERY DISK NO: 11.....	12.70	12.70
SDI (ACTIVISION).....	11.70	11.70
SILKWORM.....	11.70	11.70
SKRULL.....	14.70	14.70
SHOOT-EM UP CON KIT.....	14.70	14.70
STAR WARS.....	11.70	11.70
STORMTROOPER.....	11.70	11.70
STARGLIDER II.....	14.70	14.70
STAC.....	---	29.90
STOS COMPILER.....	---	12.70
STOS MAESTRO.....	---	15.70
STOS MAESTRO PLUS.....	---	59.50
STOS SPRITES.....	---	10.70
SUNDOG - FROZEN LEGACY.....	---	8.70
THREE STOOGES.....	17.70	17.70
TRIAD.....	17.70	17.70
TARGHAN.....	14.70	14.70
TECH.....	11.70	11.70
TECHNO COP.....	13.90	13.90
THUNDERBLADE.....	14.90	12.90
TURBO CUP.....	11.70	11.70
ULTIMATE GOLF.....	13.90	13.90
U.S.S.....	14.70	14.70
VIRUS.....	11.70	11.70
VICTORY ROAD.....	14.70	11.70
VOYAGER.....	15.70	12.70
WEIRD DREAMS.....	14.70	14.70
WESTERN EUROPE SCENERY.....	12.70	12.70
WORLDCLASS LEADERBOARD.....	13.90	13.90
WHO FRAMED ROGER RABBIT.....	14.50	---
XENON II.....	11.70	11.70
ZANY GOLF.....	16.80	16.80
ZORK ZERO.....	17.70	---
ZOOM.....	11.70	---
ZAK MCKRACKEN.....	16.80	16.80

GOODS DESPATCHED  
WITHIN 12 HOURS  
SUBJECT TO AVAILABILITY



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.

CHEQUES, P.O.'s TO BE MADE PAYABLE TO:  
HOMESoft (UK)  
UNIT 13, CENTURION WAY INDUSTRIAL ESTATE,  
FARINGTON, LEYLAND, PRESTON, LANCASHIRE. PR5 2GU.

TELEPHONE: (0772) 452414



# PC2286: Winner or Loser?

*After several stabs at the micro computer market with varying degrees of success, Amstrad has finally launched a range of machines aimed at the hi-tech end of the market – the PC2000 range. Its 2286 is finally in the shops – how does it shape up? Jerry Glenwright puts it through its paces...*

**A**mstrad has never been overly concerned with the leading edge of technology when it came to designing and marketing small computers. The strategy employed by the company has always been to box existing technology and sell it at a slightly cheaper price than other computer manufacturers to Joe and Jo Public.

This policy has served Amstrad admirably, and has allowed the company to be one of the biggest – in terms of wealth generation – in the UK.

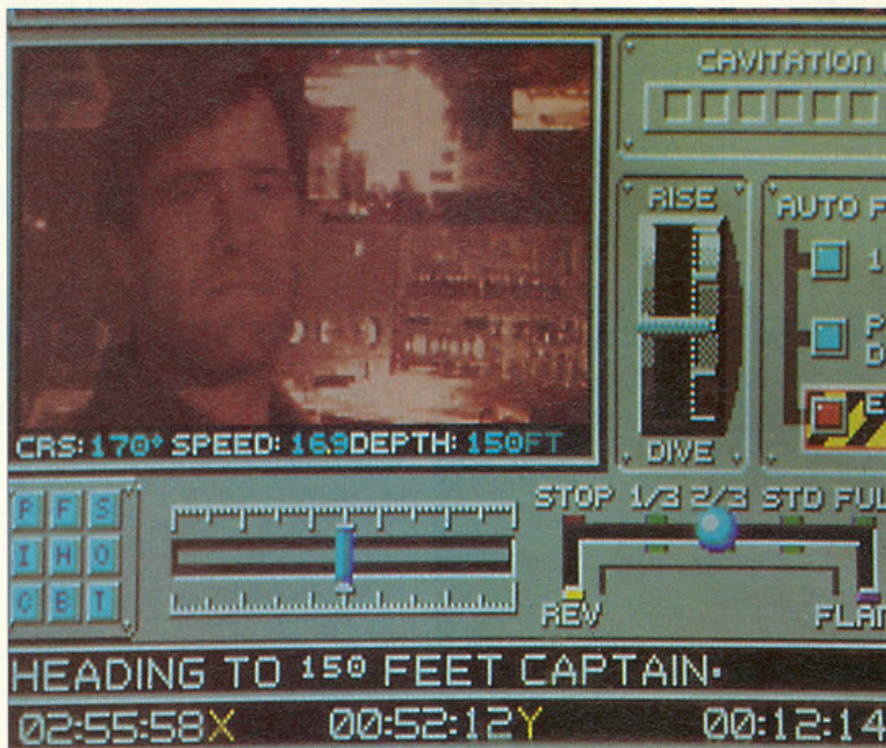
The net result of all these computer sales has been to provide the ordinary person in the street with technology which would have been unthinkable just a few years ago. In 1986, the PC was confined almost exclusively to a user base made up of businesses and the power user with money to burn. Amstrad designed a cheap little PC, coupled it with persuasive advertising and the general populace bought it in droves. It is now nothing special for the average home micro user to employ a PC compatible for their computing.

But this is 1989, and the power user has progressed to machines built around the more powerful 286 and 386 chips. Enter Amstrad: see a (possible) gap in the market and exploit it, with a new range of machines using the 'latest' chips to drive them. Remember, technology which is at the leading edge to ordinary users has usually been around for several years. The 286 and, to a lesser extent, the 386 chips constitute this new technology. Both chips have been around for a while, but it's only now that they are filtering through to be used in affordable machines.

The Amstrad PC2286 is one of the new breed of machines employing (almost) state of the art technology. The machine has an Intel 286 central processor running at 12.5 MHz. Backing storage in the form of a 3.5 inch floppy and a 40Mb hard drive. A VGA graphics adapter providing the display. There are four 16-bit and one 8-bit expansion slots, and 1Mb of RAM is supplied as standard.

On paper, the outward appearance of the Amstrad PC2286 must have looked suitably futuristic. Unfortunately, in the plastic, sorry, flesh, the machine looks as if it came from a Gerry and Sylvia Anderson production. The main case has a large footprint and wouldn't look out of place being tended by solemn persons wearing white lab coats.

The monitor case is smaller and neater than that



• The VGA screen gives excellent picture quality



• Forget that old budget image: the PC2286 is part of Amstrad's sortie into the higher end of the market

of other Amstrad compatibles. The keyboard is larger and has cut away corners at the front and a 'rest' for the heel of your hands when typing.

OK, that's the appearance of the machine out of the way – remember, beauty is in the eye of the beholder and unless you have need of a machine with a small footprint, or let the aesthetics of a machine colour your judgement, you shouldn't place too much emphasis on outward appearances.

After unpacking, the PC2286 fits together in similar fashion to its stablemate the PC1640. Four

small batteries fit into the upper part of the CPU case and the monitor sits in a slot above them. Both machine and monitor have a hard wired cable to provide power.

Switching on the machine, you are provided with Amstrad's familiar 'Please Wait...' message then after quite a wait the machine displays some guff about clearing hardware RAM pages, frames etc., clears the screen, prints up an MS-DOS 4.01 message – yes, the PC2286 runs the new DOS – and provides you with a prompt. You are now sitting with an enormously powerful 286 machine just itching to go – at least, that's the story...

## Tick, VGA

Instantly noticeable is the superior monitor display. The machine has a VGA graphics adapter as standard and a screen that can handle it. The monitor provides a rock-steady picture with good contrast and colour over the whole displayed area.

VGA is a necessary standard for some of the more advanced CAD applications and this monitor has what it takes. With all the software we tried, the machine's display was excellent. Even games will benefit with the use of VGA (providing they support it of course). Electronic Arts new game 688 Sub Attack which does support VGA graphics adaptors gave wonderful colour and high-resolution pictures.

The other immediately noticeable advantage of an Amstrad machine is the volume control on the side of the CPU case. The PC is not exactly renowned for its sound capabilities and most games have you reaching for the volume control if you're lucky enough to have one.

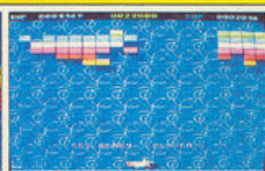
After the monitor, the keyboard is the next most used item of a machine. You issue almost all of your commands to the machine via the keyboard



# FREE! TENSTAR PACK WORTH OVER £229!



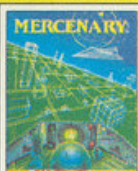
FREE! - AMEGAS - by Players



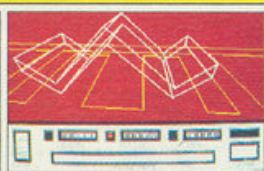
FREE! - INSANITY FIGHT - by Microdeal



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
<b>TOTAL RRP:</b>	<b>£724.43</b>
<b>LESS DISCOUNT:</b>	<b>£325.43</b>
<b>PACK PRICE INC VAT:</b>	<b>£399</b>

## 1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
<b>TOTAL RRP:</b>	<b>£999.43</b>
<b>LESS DISCOUNT:</b>	<b>£350.43</b>
<b>PACK PRICE INC VAT:</b>	<b>£649</b>

## 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

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.	
<b>Amegas</b>	<b>£14.95</b>
<b>Art Of Chess</b>	<b>£24.95</b>
<b>Barbarian, Ult Warrior</b>	<b>£19.95</b>
<b>Buggy Boy</b>	<b>£24.95</b>
<b>Ikari Warriors</b>	<b>£24.95</b>
<b>Insanity Fight</b>	<b>£24.95</b>
<b>Mercenary Comp</b>	<b>£19.95</b>
<b>Terrorpods</b>	<b>£24.95</b>
<b>Thundercats</b>	<b>£24.95</b>
<b>Wizball</b>	<b>£24.95</b>
<b>TOTAL RRP:</b>	<b>£229.50</b>
<b>INC VAT</b>	

## 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:

<b>SIDCUP (&amp; Mail Order)</b>	<b>01-309 1111</b>
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX	
OPEN: MON-SAT 9am - 5.30pm	LATE NIGHT: FRIDAY 9am - 7pm
<b>LONDON</b>	<b>01-580 4000</b>
52 Tottenham Court Road, London, W1P 0BA	
OPEN: MON-SAT 9.30am - 6.00pm	LATE NIGHT: NONE
<b>LONDON</b>	<b>01-629 1234 ext 3914</b>
Selldrives (1st floor), Oxford Street, London, W1A 1AB	
OPEN: MON-SAT 9am - 6.00pm	LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, Dept NCE 05 89 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?

\_\_\_\_\_



and so it has to be a good one. The early Amstrad PC keyboards are dreadful. Third party manufacturers quickly made a killing supplying usable keyboards to PC1512/1640 owners. The PPC range of portable Amstrads have full size keyboards which, although a little 'cheap', were very usable. The PC2286 carries on this tradition with a keyboard which feels very similar to those of the PPC machines. It's 'clunky' but positive, and typing for long periods is feasible using this keyboard.

## It drives me...

The CPU case has a sloping front panel with an LED power-on light, a single 3.5 floppy disk drive

and a 40Mb hard drive. The floppy performs adequately but the hard drive leaves a little to be desired. If you're not used to running a system with a hard drive then you won't notice how slow it is, but if your current machine has a hard drive or you use a PC at work then you'll notice the long waits associated with every hard drive access or boot-up.

The drive has an average seek time of 100.2ms, a data transfer rate of 260.2 KB/sec and a performance index of 2.098, which is excessive for a machine of this class (compare these figures with the Opus IV which has an average seek time of 68.5ms).

At the heart of the machine is an Intel 286 central processor offering performance at 5 times

that of a standard PC/XT.

The 286 can supply you with raw computing power which would have needed a warehouse to contain the machine 20 years ago. All your applications will run at lightning speed, particularly those with intensive calculations such as spreadsheets, CAD and DTP packages. No waiting for screen updates whilst the machine calculates a new set of relative co-ordinates.

## The verdict

Well, although the machine is of poor design – a flimsy plastic case with numerous cooling vents and slots typical of Amstrad – it is of reasonable quality. The monitor is very good. A steady display with nice fat colours and crisp contrast, making it easy on the eye and very usable.

The keyboard is an improvement over other Amstrad machines, with the exception of the PPC, upon which it seems to be based. Again, the word to describe it is usable.

The overall speed of the machine is let down by slow hard drive access times; boot-ups take a long time and disk-intensive applications will be noticeably slow.

Amstrad launched the CPC range with a full compliment of peripherals that at the time, couldn't be matched for price. The PCW, released with a screen, printer and software in one easy to use package, filled a market gap and sold well. The PC range put computing power previously confined to business persons, into the hands of the masses and became very popular, opening up a whole new market for PCs in home computing. The PC2286 doesn't open any doors, neither does it break down any pricing structures.

Plenty of other manufacturers are releasing 286-based machines, offering better drives and better specifications for the same – or less – money. This is a nice little machine, but at the price, Amstrad will have a battle on its hands to win your support.

## The figures behind the machine

How does the Amstrad machine compare in terms of speed, performance and ability? Is it worth upgrading your existing system in order to make use of the extra power of a 286? Check out our definitive benchmarks to see whether or not the Amstrad PC2286 brings home the bacon. In order to provide comparison, all tests are shown relative to an Opus IV XT turbo with EGA screen and 20Mb hard drive.

The Amstrad PC2286 has the following specifications:

1Mb of RAM  
64K of Cache RAM  
80286 central processor running at 12.5MHz

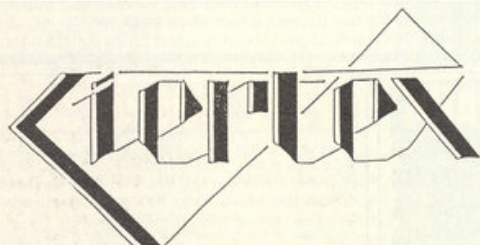
1 3.5 inch floppy drive offering 1.44Mb of storage capacity

40Mb Hard drive  
VGA graphics adapter supporting EGA, CGA, MDA and Hercules  
MS-DOS 4.01 operating system

Running the Spectrum CPU speed test version 1.10 from the sbc-Spectrum Group PLC, the Amstrad PC2286 performs like an IBM AT running at 9.8MHz and with a performance 5.2 times that of a standard IBM PC or XT. By contrast, the Opus performs like an IBM AT running at 4MHz and with performance twice as

fast as a standard IBM PC/XT.

With the CORE Disk Performance Test Program version 2.7 from CORE International Inc, the drive of the Amstrad machine has a data transfer rate of 260.2 KB/sec. The average seek time of the drive is 100.2ms with a track to track seek time 1 ms. The performance index rating was 2.098. The Opus running the same CORE disk test has a data transfer rate of 120.5 KB/sec, an average seek time of 68.5 ms and a track to track seek time of 15 ms. The performance index rated 1.520.



**TIERTEX Ltd**  
10A Barlow Moor Road,  
Didsbury  
MANCHESTER M20 0TR

*Due to major expansion, one of the U.K.'s most experienced development houses requires the following individuals to complement its current in-house team.*

## EXPERIENCED C-64 16 BIT ARTISTS

*The above positions are full time and based at our new Manchester offices. Remuneration is dependant on experience and a comprehensive bonus scheme will also be included.*

*The successful applicants would be working on the creme of Coin-Op conversions and exciting original projects for Europe's top software publishers.*

*If you think your work measures up to our past projects like Thunder Blade, Last Duel and 720°, please send examples of your work together with a C.V. to the above address.*

*Alternatively, phone Andrew Ingram on 061 446 2251 to discuss these opportunities further, all applications will be dealt with in the strictest confidence*



## The Problem!

### 53,000 vacancies Forecast by National Computing Centre

Britain is experiencing a "chronic" shortage of skilled computer staff. At present it is estimated that there are 16,000 vacancies for development staff and a growing shortage of systems programmers.

And The National Computing Centre predicts that by 1991 this could well rise to 53,000.

The low level of attention to training has been suggested as the main cause for this.

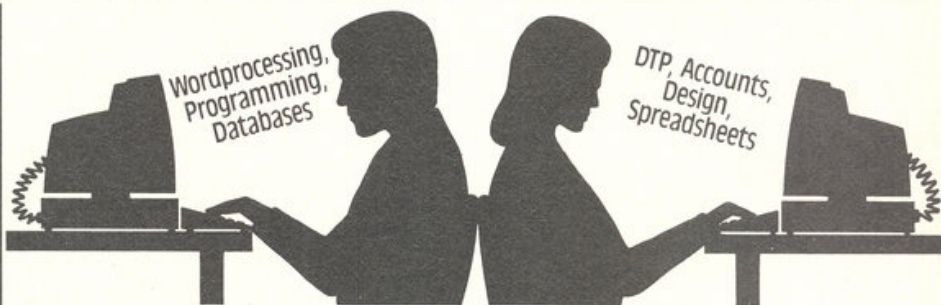
## The Solution!

### Computeach Student Wins National Award

Keith Burbanks, aged 26, has recently won the National Computing Centre's Bronze Award for the best performance in this year's City & Guilds examinations.

Keith, who is now a well-paid computer programmer, was unemployed before becoming a Computeach student, is just one of hundreds of young people that Computeach International are training to meet the national shortage of skilled computer staff.

# Computers are Everywhere! The Computer Industry needs YOU!



The electronic office is now with us. Everywhere you look computers are taking over.

In the secretary's office, in the accounts department, in the sales department and in the design office—just about everywhere.

It's bad news for those who don't have any experience in computers.

But it's **very good** news for those with the right training.

In fact, by 1991 it's predicted that there could be 53,000 unfilled vacancies in the computer industry.

So don't get left behind or worse **left out!**

Get the experience that will get you one of those 53,000 interesting, well paid jobs in computers, with a Computeach distance learning course.

Ring Stourbridge (0384) 378005 (24hr service) **now** or send the coupon to:

**Computeach International Limited, Freepost, Stourbridge,  
West Midlands, DY8 7BR.** (no stamp required)

Please send me details of your computer training courses.

Name (Mr/Mrs/Miss) \_\_\_\_\_

Address \_\_\_\_\_

Postcode \_\_\_\_\_ Tel. No. \_\_\_\_\_

Present Occupation \_\_\_\_\_ Age \_\_\_\_\_



COMPUTEACH  
GROUP

NCE 4/5



ENTER THE CHASM OF DEATH & COLLIDE WITH THE FORCES OF...

# HATE™

HOSTILE · ALL · TERRAIN · ENCOUNTER

Take control of your Terraplane or Lazatank blasting a path of total destruction over the rolling contours of this Alien Wasteland. Only by totally annihilating all enemy targets and seeking out the life plasma cores, will you achieve the Ultimate Victory. Are you ready to take on 30 levels of "HOSTILE ALL TERRAIN ENCOUNTER".



Screen shots from Atari ST version



CBM 64/128 tape £9.99 disk £14.99

AMSTRAD tape £9.99 disk £14.99

SPECTRUM 48/128K tape £9.99 +3 disk £14.99

ATARI ST & AMIGA £19.99



Gremlin Graphics  
Software Ltd., 32 Ludgate Hill, Off St. Pauls  
Square, Birmingham, B3 1EH. Tel: 021 236 9146

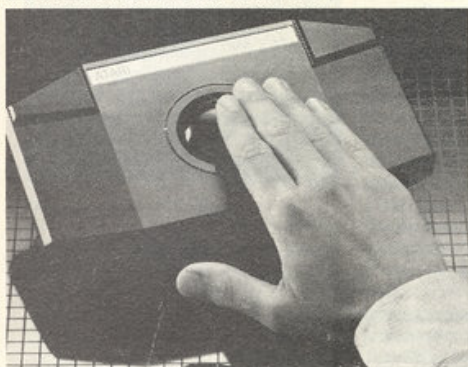


**S**

You've got less than a month to get your STOS-created games to Mandarin Software if you want to be eligible for the STOS Gameswriter of the Year competition. Anyone with STOS should seriously consider entering the competition – which requires you to write a game of your choice (if you hadn't worked that out yet) – as the top prize is advance royalties of £5,000. Oh, and you'll also get your game published by Mandarin.

The winning entry will be announced at the Atari show (which starts on the 23rd of June and ends on the 25th). The show will be held at the Alexandra Palace in London. You'd better get down to some serious programming if you're thinking of entering.

Mandarin has already selected four games that it considers to be the best so far. These



include Sky Strike in which the idea is to destroy aircraft and battleships; Battle Command where you have to protect cities from invading aliens (can't think where I've heard that scenario before); Mouth Trap where the idea is to move around the screen eating fruit and collecting bonuses while avoiding the nasties; Arthur of the Britons in which you must compete in various tournaments. Now you know what you're up against. The place to send your games is Mandarin Software, Europa House, Adlington Park, Adlington, Macclesfield, SK10 4NP.

After raving about Tempest's decision to introduce a low cost hard drive (issue 21), I've recently been informed about CST's activities. For some months CST has been selling a £299 20Mbyte hard drive. The price - incidentally - includes VAT.

The drive doesn't have a real-time clock or auto booting facilities, but at the price there's no complaining. Various models up to 150Mbytes capacity are available. Prices obviously rocket the closer you get to 150Mbytes. The 40Mbyte drive, for instance, goes for £399.

Said CST's Martin Dolney, "provision for auto booting will be made available in a month or so. Upgrading should add little more than £30 to the price." Further information from CST at The Shaftsbury Centre, Percy Street, Swindon, Wiltshire (0793 481333).

released the STOS Compile, reviewed in this issue of *Express*. This £19.95 package lets you create stand-alone (or machine code) programs from STOS BASIC. The resulting files can be run from the Desktop. An updated version of the STOS system files, V2.4, is included with the Compiler.

On average compiled programs run 50% faster – that's not a great deal, but then, say Mandarin, the STOS sprite and graphic routines are highly optimised. Loops like WHILE WEND and REPEAT UNTIL can run up to 10 times faster.

Compiled programs also tend to be frightfully large; between 40K and 80K larger than source files. A three-line program that consisted of a FOR NEXT loop and a PRINT instruction compiled to a 51K file. Not exactly efficient. The same three-liner compiled with HiSoft's Power BASIC produced a PRG file five times smaller.

All Mandarin software is available from Database Direct, freepost, Ellesmere Port, South Wiral, L65 3EB (051 3572961).

Microdeal is now distributing Michton's Hard Drive Turbo Kit. The £29.95 package provides ST hard drive users with utilities for defragmenting and backing up data onto floppy.

The more you use your hard drive, the more it seems to slow down. It's not old age, but something caused by file fragmentation. You'll probably erase and save numerous files in the course of your hard drive's life. Files saved during that time won't be saved contiguously, but wherever there's free space (which is usually a bit here and a bit there).

mouse?

While Turbo Kit won't return your hard drive to the speed of its youth, it will do the next best thing. It will rewrite files into contiguous blocks while moving all free space into one large block. Your drive will operate much better and will run at optimum speed - although you'll need to use the utility every week or so to keep everything contiguous.

It can take 20 minutes or more to set your hard drive right if files are badly fragmented. This does depend greatly on how much is stored on the disk and just how much data the disk holds.

The cache can enhance the performance of your ST as well as increase the performance of your hard drive. All recently accessed disk sectors are held in the cache - in much the same way that a RAM disk would store complete files. The cache eliminates the disk search-and-access time needed to reload old information.

Microdeal is at PO Box 68 St Austell,  
Cornwall PL25 4YB (0726 68020).

Hard Edge Communications on 0742 665719 has come up with an interesting alternative to the mouse. It's an upside down mouse – or rather a trackerball.

The Atari Trak-Ball has been suitably modified to work with the ST. It can be used either as a substitute for the mouse or as a joystick – a switch at the back of the device lets you determine how the trackerball should act. Trak-Ball costs £28.99.

**BYTEBACK**

WE ACCEPT  
EXPRESS  
VOUCHERS

KEENEST PRICES

**FAST**

DELIVERY SERVICE

We're programmed to help, so ring us now.

COMPUTERS	ONLY!
ATARI 520 STEF M EXPLORER PACK .....	£359
FREE: Rana Rama game + Utilities + Mouse Mat + WIZ Card	
ATARI 520 STEF M SUPER PACK .....	£399
including: 21 Arcade Games, Organiser pack + Mouse Mat	
ATARI 1040 STEF M BUSINESS PACK .....	£449
FREE: VIP Professional, Microsoft Write, Superbase Personal	
AMIGA A500 (Kickstart 1.3) + FREE: WORKBENCH 1.3 .....	£369
AMIGA A500 GAMES PACK (Kickstart 1.3) + FREE: WORKBENCH 1.3 .....	£399
FREE: 8 Game Software Pack + Mouse Mat + WIZ Card Controller	
A500 AIR MILES PACK (Kickstart 1.3) + FREE: WORKBENCH 1.3 .....	£449
PLUS: 500 Air Miles, 3 games and Paint Package	
VORTEX System 2000 40MB Hard Disk Drive (for AMIGA) .....	£569
* 2 Disks, 10MB sections, Kickstart/Workbench 1.3 Back up park, Separate power supply, 15 inch cable	
50 Double Sided Disks + Labels in a lockable 50 Disk Box .....	£55
100 Double Sided Disks + Labels in a lockable 100 Disk Box .....	£99

ST & AMIGA	ONLY!	ST & AMIGA	ONLY!
After Burner .....	16.90	Baal.....	13.90
Balance of Power 1990 .....	16.90	Barbarian II .....	13.90
Batman .....	(AM: 16.90) 13.90	Butcher Hill .....	16.90
Chuckie Egg .....	13.90	Chuckie Egg 2 .....	13.90
Combat Pilot .....	16.90	Cosmic Pirate .....	13.90
Crazy Cars II .....	16.90	Cybernoid II .....	16.90
Dark Fusion .....	16.90	Dragon Ninja .....	(AM: 16.90) 13.90
Dungeon Master .....	16.90	Dungeon Master Editor .....	8.90
Elite .....	16.90	Emmanuelle .....	13.90
Falcon .....	(AM: 19.90) 16.90	Fed. of Free Traders .....	19.90
Galdregon's Domain .....	13.90	Garfield .....	13.90
Gauntlet II .....	16.90	International Karate Plus .....	16.90
Leisure Suit Larry .....	13.90	Manhunter New York .....	19.90
Mayday Squad .....	13.90	Millenium 2.2 .....	16.90
Pac-Land .....	13.90	Populous .....	17.90
Precious Metal .....	16.90	Prison .....	13.90
Steve Davis Snooker .....	13.90	Super Hang On .....	19.90
Targhan .....	16.90	Voyager .....	(AM: 16.90) 13.90
Zak McKracken .....	19.90	Zany Golf .....	16.90
<b>ATARI ST</b>	<b>ONLY!</b>	<b>AMIGA</b>	<b>ONLY!</b>
Archipelagos .....	16.90	Denaris .....	16.90
Ballistix .....	13.90	Fright Night .....	13.90
Bio Challenge .....	13.90	Games - Winter edn .....	13.90
Colossus Chess X .....	16.90	Hybris .....	16.90
Custodian .....	13.90	Hyperdrome .....	13.90
Deep (The) .....	16.90	Kristal .....	19.90
Leisure Suit Larry 2 .....	19.90	Rampage .....	16.90
Police Quest II .....	16.90	Sword of Sodan .....	16.90
Raffles .....	13.90	TV Sports Football .....	19.90
Degas Elite .....	16.90	AmigaDOS Toolbox .....	39.90
First Word Plus .....	59.90	BBC Emulator .....	39.90
GFA Basic (NEW v.3) .....	49.90	Deluxe Paint III .....	62.90
Home Accounts .....	22.90	Deluxe PhotoLab .....	52.50
Mini Office - Spreadsheet .....	16.90	Fantavision .....	34.90
Mini Office - Pro. Comms .....	16.90	GFA Basic (V.3) .....	59.90
Protext (4) .....	74.90	Home Accounts .....	22.90
Scan Art + Draw Art .....	52.50	Pixmate .....	39.90
Turbo ST .....	32.90	Workbench 1.3 .....	12.90
WERCS Plus .....	37.90	miniGEN .....	99.90
Multiface ST 1.5 or later) .....	54.90	X-COPY (NEW 1.3) .....	29.90
Copy ST (NEW V1.2m) .....	29.90	PROJECT 'D' (NEW 1.2) .....	29.90

This is just a small selection of our VAST range of 68000 Software!  
Phone/Write for full catalogue - stating: Atari ST or AMIGA

**BYTEBACK** DEPT NCE6 MUMBY CLOSE  
NEWARK, NOTTS NG24 1JE

**PAY BY CHEQUE,  
POSTAL ORDER OR USE  
YOUR CREDIT CARD  
0636-79097**



24 HOUR SERVICE

NEW COMPUTER EXPRESS • 29 APRIL 1989 • 33



OVER 500 DISKS  
FOR THE  
**ATARI ST**The best selection available  
anywhere in the UK.OVER 500 DISKS  
FOR THE  
COMMODORE  
**AMIGA**The best catalogue you'll  
find anywhere in Britain.OVER 300 DISKS  
FOR THE **PC**  
(IBM, Amstrad etc.  
and compatibles)  
A selection of some of the  
best programs available.send a stamp or phone for  
a FREE Catalogue.  
Remember to quote  
this magazine  
and your type of  
machine (important)from  
£1.50  
per disk**SOFTVILLE PD SERVICE**55 HIGHFIELD AVENUE  
WATERLOOVILLE HAMPSHIRE  
PO7 7PY Tel 0705-266509**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

<b>DISKETTES</b>	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
<b>RIBBONS</b>	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.)	
<b>DISK STORAGE</b>	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 &amp; Packing)

**YOUR FORMAT**

MACHINE-SPECIFIC COLUMNS

**PC  
UPDATE****Rare bugs**

One of the most interesting aspects of the recent 'Bug Shocker Hits Amstrad' story was the nature of the bug. If you read Express's news item (issue 23), you'll remember that the supposed hardware error occurred when pieces of data separated by exactly 32Mb were accessed in close succession. You can well imagine how a fault of this type would look suspiciously like a hard disk error.

Once it was traced to MS-DOS 4.01, the operating system, it needed only a change of two bytes to cure the problem. That change has been made with Microsoft's approval, and presumably incorporated into their own copies of the program. It's still not known whether IBM's PC-DOS, a variant of the Microsoft product, has suffered the same problem, and surprise, surprise, IBM aren't saying.

The main point of this little item, though, is how obscure some bugs can be. It's all very well the end user climbing on a Shire horse and bending the supplier's ear till it looks like something off the Big Friendly Giant. What is often forgotten is that there's only a finite time available for testing any program and some bugs will inevitably only be found after serious 'real world' use once, the products have been released. The bug found in DOS 4 was never going to show until there were at least 32Mb of data on a hard disk, and be highly unrepeatable, making it very hard to trace even if it did occur.

While pleading for a reasonable approach, I can draw on my own experience in compiling and supporting the PC Plus SuperDisk. A

you can print out a document while working on something completely different. All you use is the MS-DOS PRINT command. This command takes a named file and send it to the printer, as a background task. You can control the timeslice (the proportion of time DOS devotes to printing) and set up a queue of documents. The following example:

```
PRINT jeriboa.rat
starts printing the file jeriboa.rat on the
default printer (attached to LPT1:). To add the
file mole.rat to the queue, you would type:
PRINT mole.rat /p
and to remove it from the queue, even if it
isn't the last name, you'd type:
PRINT mole.rat /c
```

**Comms, I hate 'em**

Mention the idea of computer communications to PC users and you'll either receive a stream of protocols, BBS numbers and Telecom Gold baud rates, or a stream of invective. I claim affinity to the latter group

**Prize Quiz**

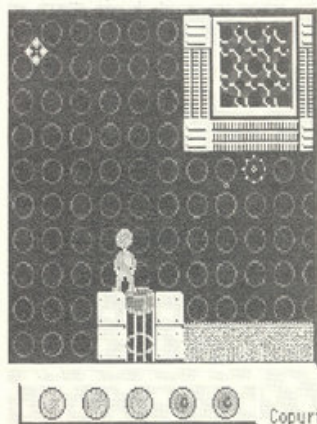
Perhaps some of you have seen the game pictured here. It runs on an EGA screen and is an animated adventure game of the Jet Set Willy ilk, though rather better. All you have to do is name it and send the answer on a postcard to May Day Game, PC Update, New Computer Express, 4 Queen Street, Bath BA1 1EJ. As the address suggests, you've got to be quick off the mark and get your answer in by May 1st. First out of the hat wins a copy of the game.

and had this dislike strengthened over the weekend, while trying to get a data file transferred from an XT to an Amstrad CPC6128 (he says, squeezing another clove of garlic over his crucifix).

It has to be said that most of the problems turned out to be with the CPC. I connected the external serial port to the COM 1 port and ran Telix on the PC - Telix is a very natty bit of shareware with many of the best features of Procomm and Baudwalk. On the CPC end I had the Amstrad SETSIO program and CP/M's PIP. I guess this is a bit hard on the Amstrad, really, as a good comms utility could probably have saved a lot of heartache. Anyway, I set the link slow, to 1200 baud, as there were no mutually compatible protocols available. Telix supports Xmodem, Ymodem, relaxed Xmodem (Californian version?), Modem7 and Kermit among others, but the serial port manual on the Amstrad just talked about a 'special transfer protocol' - apparently none of these.

PIP kept giving an ERROR - CLOSE FILE message at the end of transferring my 33K file, and left me with nothing on the CPC disk. I cut down the file into ever smaller chunks and transferred each bit in turn to the CPC, but even then there was 4K-5K that refused to go across. After a lot of faffing around, it turned out to be bad sectors on the 3" disk! Yet another example of the ninth law of computing 'It's easy to be fooled - think laterally'.

Simon Williams



Copyright 1988 by Michael Dent

number of the calls I get each month are from people who are running the software on non-Amstrad, non-IBM machines. Of course there's nothing wrong with this, and the vast majority of programs run on all PC compatible machines. What is hard to take is the disgruntled complaints of some readers about our lack of checking. There must be well over 200 different ready-made PCs on the market, plus any number of combinations of expansion card, monitor and printer. It should be obvious to all reasonable people that it's not possible to test programs on every configuration of machine. It's also very hard to analyse inconsistencies in a particular ROM BIOS over the phone!

**Printing while you work**

Did you realise your bog-standard, simple PC can multitask? It's a bit limited, of course, but



# AMIGA BLIT

## Amiga Helps Solve Lockerbie Disaster

The Amiga 2000 certainly is proving itself to be a force to be reckoned with within the world of graphic workstations. Dumfries and Galloway Police have just installed an Amiga 2000 based computer system to aid the investigation into last December's Lockerbie air disaster.

The system is being used to process the many hundreds of hours of videotape footage taken during the aftermath of the disaster. The Amiga 2000's advanced graphic capabilities are employed to reconstruct the site of the crash so that Police can establish exactly what happened immediately before the incident.

Police experts are also using the Amiga to produce stills from videotape using a digital framestore. These captured frames are then enhanced by the Amiga prior to be printed out to a polaroid film recorder.

"The Amiga 2000 system gives us the potential for crime detection by using its excellent graphics and its ability to grab video images so that we can output them as photographs and slides," says Sergeant Bob Owens of the Dumfries and Galloway Police force.

## Demos Update

The demos scene has always been one of the most active and exciting aspects of the Amiga. With the machines audio-visually advanced hardware, demo writers have understandably been having a field day exploring the possibilities of the Amiga.

The latest, and most definitely one of the greatest demos to appear on the Amiga is a very stylish animation of the famous scene in the original Star Trek movie where the Starship Enterprise moves slowly out of the dry dock that orbits the Earth. The animation was produced using VideoScape 3D and really is a worthy tribute to the Amiga's animation capabilities.

"What do I need and where can I buy it?", I hear you shout. Well, firstly you'll need at least a one megabyte Amiga to run it and the demo itself can be obtained from 17Bit Software. This demo is a definite must for all discerning Amiga demo collectors. 17Bit can be contacted on 0924 366982.

## Multi-Megs for Mini-bucks

Why is it that the price of hard drives on the Amiga is so high? The average price of an Amiga compatible drive has, until recently, been almost four times that of similar capacity drives on a PC; an unacceptable situation indeed! Thankfully, things are starting to change with the news that several manufacturers are planning to release cheap hard drives for our beloved machine.

The most interesting hard drive comes from a company that has been taking the Amiga

market by storm over the past six months or so. I'm talking about Applied Systems and Peripherals, manufacturers of the popular budget genlock, MiniGen. Their unit, the AmDrive, is a 40 Meg device for the A500 and will be sold at an exceptionally low price of £399.

The drive currently does not support autobooting under Kickstart 1.3, but plans are underway to release a £50 upgrade which will be available to all Amdrive owners. What if you haven't got Kickstart 1.3? ASAP have thought of that too; just send your AmDrive and A500 back to ASAP with a cheque for £75 and they will upgrade both your AmDrive and A500.

Plans are afoot to release a version of the Amdrive for the A2000 which will support autobooting as standard. The device will consist of a plug in card which will slot inside the A2000 and will have both the same specification and price as the A500 version.

I've been using a pre-production Amdrive on my A500 at work for the past couple of weeks now and I can whole heartedly recommend the unit. If you're in the market for a high quality, low cost hard disk for your Amiga, look no further than ASAP's Amdrive - and they can quote me on that! ASAP can be contacted on 0724 280222.

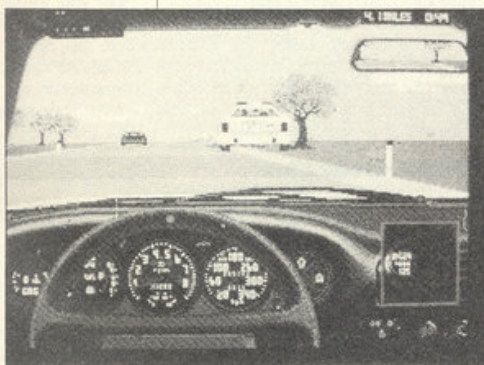
## Games News

Fans of Accolade's classic Test Drive will be pleased to learn that the follow-up, Test Drive 2: The Duel, has just been released. The game sees you racing head to head against the computer across the United States in either a Porsche 959 or a Ferrari F40.

The game plays alot better than the original and optional car and scenery disks are available to further enhance your dreams of driving some of the worlds greatest production cars.

● Since the release of Defender of the Crown, CinemaWare have managed to establish themselves as one of the top games producers on the Amiga. Their next release, after the high acclaimed Lords of the Rising Sun is called It Came From the Desert which is modelled upon those brilliantly awful 1950's 'Big Bug' movies. The game is CinemaWare's biggest project yet (they seem to say that about all their games!) and promises to feature their usual high standard in graphics and sound. 'It Came From the Desert' is due for release in July.

● Look out for Xenon II from the Bitmap Brothers coming soon to an Amiga near you. From what I've been lucky enough to see, the follow up looks set to be a very hot product indeed. Imagine a game that has fast parallax



● The Duel; follow up to the highly acclaimed Test Drive from Accolade.

graphics, more objects on screen than you'd expect, a thumping Bomb the Bass soundtrack and the same addictive gameplay that made the original such a smash hit.

Jason Holborn

# AT MICRONET WE'RE REALLY TALKING!

**FREE MODEM**  
with annual subscription or  
£11.45 HALF PRICE 1st quarter

Join Micronet and turn your computer into a communications terminal that will download free software, access up-to-the minute computing information, play exciting multi-user games, talk to other people and a lot more. And join before June 30th 1989 (offer extended) and get your first quarter's subscription at half price - just £11.45.



**FREE SOFTWARE** Browse through an extensive software library of free programs for all popular machines, including PC compatibles, the ST and Amiga.

**COMMUNICATIONS** Use your computer to communicate with thousands of other users. With electronic mail, chatlines and teleconferencing, Micronet lets you do the talking.



**INFORMATION** Stay informed with Micronet's daily computer news, reviews and features, and then access the huge Prestel database.

**ENTERTAINMENT** Play a range of games, including the popular multi-user game, Shades, where the action is live and so are your opponents!



## Low Cost

Now, not only can you get your first quarter's membership for £11.45, but using Micronet starts at just 50p an hour, including telephone charges! If you need a modem, we'll even give you one free if you choose instead to take out a year's subscription in advance.

Just phone our Sales Desk on 01-837 7872 or clip the coupon today for more information and a free brochure.

**Join Micronet, and get talking!**

**FREE DEMONSTRATION**  
If you have access to a modem (1200/75 baud) and videodata communications software you can see a free demonstration of Micronet. Just Dial 021-618 1111 and use the ID 4444444444 and password 4444.  
You can look up a local telephone number once on-line.

Return to: Micronet, Dialcom House,  
Brindley Way, Apsley, Hemel Hempstead, Herts HP3 9RR

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Tel. No.: \_\_\_\_\_ Age: \_\_\_\_\_

Machine Type: \_\_\_\_\_



NCE/SH/4 5 89

Price includes 1st quarter residential subscription by direct debit only (normally £23) and does not include hardware or software. Minimum subscription period 1 year. Offer available in the UK only to new members. Free modem available to first time UK subscribers while stocks last. Free modem and half price subscription offers are separate and not available together.



## YOUR FORMAT

### MACHINE-SPECIFIC COLUMNS



### The only unique one

How could I possibly resist an advert in Express claiming to sell Unique Spectrum Software? This is a welcome sight to a jaded journo who's seen so many coin-op conversions and games-of-the-books-of-the-films-of-the-small-bendy-plastic-toys that he has nightmares about 'T's and ©1989s. Usually in adverts for computer software where it says 'unique' you know what they really mean is 'No one's been desperate enough to do it before'. Not the case here I can assure you. The four programs written and sold by John Lewis are definitely a bit different to say the least. The two I had a look at were Dogtrack and Subliminal Suggestion and the effects of the latter still haven't worn off. Dogtrack is a sort of Professional Greyhound Simulator which lets you gamble on some rather, er, abstract looking greyhounds and lose practically every time, probably of even more interest to all you Greyhound racers out there is the built-in form analyser which simulates races on a variety of different tracks and attempts to guess how well the favourite, underdog (groan) etc. would get on. I'm not sure I'd take a racing tip from it but there's potential there, much better than this though is 'Subliminal Suggestion'. This is a wonderfully wacky little number which is supposed to affect your mental make-up with some pretty patterns and flashing subliminal messages! The kind of thing Jeff Minter would get into in a big way if the poor sap owned a Spectrum. This potential psychiatrist unemployed claims to be able to do the following - boost confidence, relieve stress, increase happiness and make you stop smoking, cut down drinking and lose weight! (The author was obviously targeting computer journalists with the last three). I'd recommend you use it in a darkened room, wearing flares and listening to Pink Floyd. The subliminal messages are great. Things like 'You will feel confident' and 'Eat lightly' flash on the screen. Does it work? I'm not sure, I'll have to have a go on the Decisiveness increaser before answering. Both programs are recommended. They're written by an enthusiast and as far as I know genuinely unique. John Lewis' other work includes a Pools analyser with form input and I Ching (more mystical fulfilment, no doubt). Prices are £4.99 for any two on one tape. Contact John Lewis, 157 Hamilton Avenue, Tulse Hill, Surrey. Oh yeah, remember to tell your family exactly what you're doing in that darkened room wan't you. We don't want them getting the wrong end of stick.

### Rubberwear plus

If you're a rubber key person who's beginning to find that your rubber keys are a bit rubbery and characters take a long time to appear on screen so you have to type very slowly here's a tip. Get hold of a new membrane. This is a rubber mat thingy that's ever so easy to fit. I put one in my aged 48K and it's a new computer. Membranes are available from most good repair/spares outlets and probably a few bad ones as well.

### Scroll on

I received a small, well-informed little listing this week. The fairly youthful 14 year old author Mark Bailey will go on to big things. I know it. The program puts a scrolling message at the bottom of the screen and is

easily incorporated into your own masterpieces. Here it goes:

```
10 CLEAR 59989: FOR A=59990 TO
60082: READ M: POKE A,M: NEXT
A
20 DATA 58, 196, 234, 60, 50,
196, 234, 254, 8, 32, 47, 62,
0, 50, 196, 234, 42, 194, 234,
35, 34, 194, 234, 42, 194,
234, 126, 254, 255, 32, 8, 33,
197, 234, 34, 194, 234, 24,
240, 38, 0, 111, 41, 41, 41,
237, 75, 54, 92, 9, 1, 8, 0,
17, 186, 234, 237, 176, 17,
186, 234, 33, 255, 80, 6, 8,
197, 6, 32, 24, 13
30 DATA 203, 22, 43, 16, 251,
1, 32, 1, 9, 193, 16, 239,
201, 229, 235, 203, 22, 235,
19, 225, 24, 234
40 DATA "Written by M Bailey "
(that's three spaces after the 'Bailey')
130 RESTORE 40: READ AS: LET
X=0: FOR I=60101 TO 60100+LEN
AS: LET X=X+1: POKE I, CODE
AS(X): NEXT I
140 POKE 60101+X,255: POKE
60098,196: POKE 60099,234:
POKE 60100,7
150 RANDOMIZE USR 59990: GOTO
150
```

### PD peeve

A query brought up in the Express letter pages a few weeks back has been bugging me for a long time. Why has the Spectrum got so little Public Domain Software? Before the +£ I suppose it was understandable; duplicating tapes successfully on a smallish scale isn't easy, but now that we have that beloved disk based machine there's no excuse. PD software is good for lots of reasons. The fact that it's free or very cheap is the first. As mentioned in the letters page in question, some PD stuff is available from Chezron Software, 605 Loughborough Rd, Birstall Leicestershire LE4 4NJ for £3.50 disk, £5 two microdrive cartridges or £2.75 on cassette. A trial copy of any format can be had for £2.

Hope that wasn't too painful. Insert your message in the DATA statement in line 140. Save the whole thing by typing SAVE 'SCROLLER' CODE 59990,111+(no. of characters in your message). Incorporate it into your own program and type RANDOMIZE USR 59990 to run. Thank you, Mark Bailey! (Remember me when you write your first mega game).

### Being mercenary

Here's this week's plea for help department. M Green has written requesting help in Mercenary - The Second City. Believe it or not, and given my track record I go for not, I went pretty far in the original Mercenary game. This update version, however, I am not acquainted with. What M wants to know is how to get through the triangular doors. Help a fellow Spectrum owner and write without delay. Hints and tips on this game, and any others of course, will also be gratefully received. Send them to SPEX, New Computer Express, 4 Queen St Bath BA1 1EJ.

Robin Alway

## PC ENGINE SUPPLIES

### PC Engines £195.00 (Works On Any TV)

£4.00 P&P for the Engine

### THE FOLLOWING PC ENGINE SOFTWARE NOW AVAILABLE

Wonderboy	£27.00	Vigilante	£35.00
R-Type I	£27.00	Dragon Spirit	£35.00
Baseball	£27.00	Watura	£35.00
Victory Run	£27.00	Son & Son II (NEW!)	£35.00
Chan and Chan	£27.00	Dungeon Explorer (NEW!)	£45.00
Legendary Axe	£34.00	Motor Racer (NEW!)	£45.00
Tennis	£34.00	Winning Shot (NEW!)	£45.00
Alien Crush	£34.00	P47 Freedom Fighter (NEW!)	£45.00
Fantasy Zone	£34.00	We are now taking orders for the Sega 16	
Galaga 88	£34.00	Bit megadrive - price	£250.00

50p P&P for each Software Title

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  
WE TRY TO BE THE FIRST WITH THE LATEST SOFTWARE  
TEL: 0782 213993



## 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	C64 PSU for sale	£20

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

**W.T.S. ELECTRONICS LTD**  
(NCE 270489)

Studio Master House, Chaulend Lane, Luton, Beds. LU4 8EZ  
Tel: 0582 491949  
(4 lines)



Standard terms of business apply

## HARDWARE AND DISKS AT TRADE PRICES

### ... Disks ...

10 x 3.5" DS/DD	£9.00
25 x 3.5" DS/DD	£20.00
50 x 3.5" DS/DD	£38.00
100 x 3.5" DS/DD	£74.00
250 x 3.5" DS/DD	£180.00
500 x 3.5" DS/DD	£345.00
1,000 x 3.5" DS/DD	£675.00
100 Capacity 3.5" Disk Box	£7.50

'Our Disks Are Cheap But They Are Top Quality - Fully Guaranteed'

All prices include VAT & next day delivery. Cheques & Postal Orders to:

**HARDWARE DISTRIBUTION**  
1st Floor, 19 Division Street, Sheffield. S1 4GE  
Tel: 0742 726485



## MIDI SOFTWARE FOR ATARI AND AMIGA

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.

### Coming soon for the Amiga

PRO 24 and Music X  
Phone for details & price

### PRO PACKAGE

New ST Mega 1 + Monitor  
PLUS Pro 24 £915

### Amiga Owners

At last ... A Pro Featured Sequencer at a budget price.  
Track 24 is a New Release from Comus featuring Real and Steptime Recording plus Notation Editing.

All this and more for only £75.00 or £100.00 with interface.

**MIDITECH, THE COLOSSEUM, PORTLAND GATE, LEEDS, LS2 3AW TEL 0532 446520**  
ACCESS & VISA WELCOME MAIL ORDER AND TRAINING PACKAGES AVAILABLE

ATARI...AMIGA...MACINTOSH...PC...DR.T...HYBRID ARTS

PASSPORT...STEINBERG...C-LAB...INTELLIGENT MUSIC





# 64

## Scroll the credits

This week we think we've come up with a listing that you will find handy in any program you are writing - it's a definable line screen scroller.

You as the programmer in BASIC or machine code can ask the routine to scroll any line on the screen from right to left. All you have to do is tell location 49153 what line number from 0-24 you want.

```
0 B=49152: FOR L=0 TO 78: READ A:
POKE B+L,A: NEXT L
10 DATA 169,1,170,189,29
20 DATA 192,133,254,189,54
30 DATA 192,133,255,160,0
40 DATA 200,177,254,136,145
50 DATA 254,200,192,39,208
60 DATA 245,96,96,96,0
70 DATA 40,80,120,160,200
80 DATA 240,24,64,104,144
90 DATA 184,224,8,48,88
100 DATA 128,168,208,248,32
110 DATA 72,112,152,192,4
120 DATA 4,4,4,4,4
130 DATA 4,5,5,5,5
140 DATA 5,5,6,6,6
150 DATA 6,6,6,6,7
160 DATA 7,7,7,7,7
170 REM THIS IS YOUR BIT
190 C=INT (RND(1)*25)
200 POKE 49153,C:SYS49152
210 GOTO 190
```

For example, if you want to scroll the top line you would do this:

```
170 POKE 49153,0: SYS49152: GOTO 170
```

Or if you wanted to scroll the top and the bottom lines only you would do:

```
170 POKE 49153,0: SYS49152: GOTO 170
POKE49153,24: SYS49152: GOTO 170
```

Cool eh! Anything past line number 170 is completely yours to do as you wish. Remember any listings you may want written just write to the usual address.

Section 64.4 Queens Street, Bath, BA1 1EJ.

## The show's over

Two weeks ago we attended a computer game show down in our home town of Basildon in Essex, but before you go why didn't you tell us, you didn't miss much.

It was a bit of a disappointment actually. The thing that really surprised us was the hall was quite small - you could walk around it in about 5 minutes - but they were charging at least £3 for children and £4 for adults!

A lot of the stall holders did terrible trade and some even left on the beginning of the third day, but not all the stall holders seemed to do that bad. Computarama from Southend took over three stands in the course of the show; they seemed quite pleased with the trade they took.

But it wasn't all doom and gloom. The 16-bit wizards, The Bitmap Brothers, came down to see us, and all we can say is, if there any ST or Amiga reading (come on, we know you've

got that C64 in your bedroom) Xenon II lots framed to be a hit. We're sure whoever does the 64 version will make it just as cool (hint)!

But the show didn't end there as our hectic weekend still hadn't finished. Mic was rushed up to Reading half way through the show to sort some bugs in 'Street Cred Boxing' (Soon to be released under the new players label Premier, you'll be sorry if you miss it).

Then there was Sunday a pretty normal day. Exactly what you should expect on a computer game show down in Basildon, so if you are the type who rushes out and jumps at the opportunity of a computer show (like us) then wait till the Commodore show in June (we'll be there).

## Help

Recently our Amiga and CBM 128 blew up. Every time we send them off they take about 4 weeks to come back, and then the cost is very high, so if there's anyone out there who does fast cheap computer repairs, we'd like to hear from you.

You never know, you may even get a free plug.

## Cheats start here...

Gary Gould has some more cheats for us (what a mega star!).

This week's cheat is for the Munsters from Again Again. Load a game as normal, once loaded reset machine then:

```
POKE 2048,216: POKE 2049,120: POKE
2050,32
POKE 15593,169 (lots of energy)
POKE 15614,169 (lots of spells)
SYS 2048 (To start the game)
```



## Looking ahead

Coming out very shortly is the release of four new games from Premier, the new budget label from Players.

Players' Premier new releases promise chart busters like *Street Cred Football*, a five a side street crazy football game, *Task Force*, which is a flip screen arcade blast em with loadsa fire power, and *Street Cred Boxing* the complete Street boxing simulation.

With the first batch of premier games is *Subway Vigilante* where you take the scene as a guardian angel trying to clear the subways from scum.


Prices:


<i>Street Cred Football</i>	£2.99 Premier
<i>Street Cred Boxing</i>	£2.99 Premier
<i>Task Force</i>	£2.99 Premier
<i>Subway Vigilante</i>	£2.99 Premier

French software house Titus is releasing its *Crazy Cars 2* on the 64 shortly. *Crazy Cars 2* is similar to *Crazy Cars* except it features split roads and police chases.


Let's hope it has a nice road routine, unlike the Amiga and ST's in *Crazy Cars 1*.

Ian + Mic


**MAIN MEDIA**  
 FREEPOST, ANDOVER, HANTS. SP10 4BR  
 Tel: 0264 333830 (24 hrs)



**UNBRANDED LIFETIME GUARANTEE**



	QUANTITY 10	20	30	40	50	100
31/2" SS/DD	135TPI £7.95	£15.50	£22.75	£29.50	£35.75	£69.95
31/2" DS/DD	135TPI £8.50	£16.50	£23.95	£31.25	£37.95	£74.95

	QUANTITY 25	50	100	250	500
51/4" DS/DD	48TPI £7.25	£13.95	£26.95	£64.95	£124.95
51/4" DS/QD	96TPI £7.95	£15.50	£29.95	£77.50	£139.95

All 31/2" Disks come complete with labels. All 51/4" Disks supplied with Write Protect Tabs, labels and envelopes and come with our No Quibble Money Back or Replacement Guarantee.

Main Media, 1 Weatherby Gardens, Charlton, Hants.

**DISKETTE STORAGE BOXES**


	Price Each
50 x 51/4" Hinged Lid Lockable	£5.50
100 x 51/4" Hinged Lid Lockable	£7.50
140 x 51/4" Hinged Lid Lockable	£9.50
50 x 31/2" Hinged Lid Lockable	£5.50
100 x 31/2" Hinged Lid Lockable	£7.50

**DISK BOXES WITH DISKS**

50 x 51/4" Hinged Lid Lockable with 25 DS/DD	48TPI	£11.95
50 x 51/4" Hinged Lid Lockable with 25 DS/QD	96TPI	£12.75
100 x 51/4" Hinged Lid Lockable with 50 DS/DD	48TPI	£20.95
100 x 51/4" Hinged Lid Lockable with 50 DS/QD	96TPI	£22.50
140 x 51/4" Hinged Lid Lockable with 100 DS/DD	48TPI	£35.95
140 x 51/4" Hinged Lid Lockable with 100 DS/QD	96TPI	£38.95
50 x 31/2" Hinged Lid Lockable with 20 DS/DD	135TPI	£21.50
100 x 31/2" Hinged Lid Lockable with 50 DS/DD	135TPI	£44.95

All prices include VAT and Carriage. All Goods despatched within 24 hours subject to availability.

**Cheques/P.O.'s to: MAIN MEDIA**  
**FREEPOST**  
**ANDOVER, HANTS. SP10 4BR**  
**Tel: Credit Card Hotline 0264 333830 (24 hrs)**





THE INTERNATIONAL DISCOUNT CLUB FOR USERS OF IBM™ AND COMPATIBLE MICROCOMPUTERS

## THE INTERNATIONAL DISCOUNT CLUB

### FOR USERS OF IBM™ AND ALL COMPATIBLE MICROCOMPUTERS

# BIG SAVINGS

## ON ALL COMPUTER PRODUCTS

### RING NOW FOR YOUR CLUB CATALOGUE AND PRICE LIST

## FREE

### HOLIDAY IN FLORIDA USA

### WHEN YOU BUY £1,500 OF COMPUTER PRODUCTS

## FREE

### COMPUTER ADVICE AND GUIDANCE

### APPROVED ADVISORS TO THE

### INSTITUTE OF INDEPENDENT

### BRITISH BUSINESS

# 01 207 6777

## 42A SHENLEY ROAD, BOREHAMWOOD,

## HERTFORDSHIRE, WD6 1DR.





## Class of Z88

Anyone about to buy a Z88 at the new cheapo prices (£250 for Z88, four batteries, mains adapter, carry case and RAM pack) faces the problem of transferring files to and from their PCW. You need a serial/parallel interface and connecting cables, and Software Diffusion on 01-376 8038 will sell you them.

The interface is a standard RS232 (which also lets you hook up external printers, modems and so on) which includes a battery-backed clock which keeps the correct time, allowing you date-stamp your files - £59.95. The cables link the Z88 and the PCW and come with transfer software written by CPort to convert LocoScript files to and from PipeDream format - £29.95.

If you're doing things to a budget you can

## Disk discovery

Recently there has been speculation that Amstrad were cornering the market in three inch disks. Latest news is that they have managed to import a million three inch disks from the 'Far East' (well, that narrows it down to a third of the World's population) so the current shortages should be relieved. Backlogs may take a few weeks to clear though, but prices will stay the same for the foreseeable future.

try getting your local computer shop to make up a cable (bring along the Z88 manual which has a pinout diagram in the Appendix). Should cost about £15. Transfers can be done with PIP - details next week...

## STOP right there

Actions in LocoScript can be suspended or stopped by pressing the [STOP] key (had Locomotive followed usual computing conventions it would have been [SHIFT]-[EXIT]-W-up-arrow-Q). Useful to remember that if you, for example, delete a block you've marked instead of pasting it, or scroll to the end of a 150k document instead of back to the beginning (with the consequent twenty minute wait). Any key again resumes the operation, [STOP] again stops permanently.

## Aargh! It's... The Saurus...

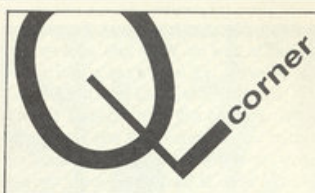
Roget's word list (Thesaurus Rex) hasn't made it to the PCW yet (so Neil Kinnock can't use it for his speeches yet). Mini Office promises to have one out soon, but there's another on the market. The Three Inch Thesaurus is available from 01-829 9219 (doesn't work on 8256s).

Essentially LocoFile data to be used from LocoScript 2 with LocoFile, it doesn't really replace the book original but if you're determined to have a paperless office it might be worth checking out for £14.95.

## Join the IQ

Anyone have details on the research done in Ottawa which linked IQ scores with the speed at which people could tell which of two lines on a computer screen was the longer? (The less time the lines were flashed on screen and you can still see which is longer, the higher your IQ). Would make a nice little BASIC program; details to me care of Express...

Basil Pigg



## Quill Document size

One characteristic of Quill that isn't made clear in the documentation is that the maximum size of a document is limited mostly by the number of paragraphs.

Each time you press the enter key, you get a new paragraph, so a relatively small document consisting of lots of single lines could quickly cause Quill to run out of space.

## QL-PC transfer via Serial Port (Part 2)

Assuming you have made up the lead as described in the previous issue of Express, you plug the QL end (telephone jack) into SER2, and the other end (DB-25 socket) into COM1 on your PC.

Switch both machines on (and boot the PC in the usual way with a DOS disk. Type the following statements into the QL:

```
BAUD 1200:OPEN £3,SER2SIZ,COPY
CON,SER2SIZ
```

and the following into the PC:

```
MODE COM1:1200,n,8
COPY COM1:CON
```

If you now type a few characters on the QL keyboard, and then press control Z, you should see the characters displayed on the PC screen, thus demonstrating that the QL is

'talking' to the PC.

Now, press control C on the PC, and shift break on the QL (they are both stuck in a loop) and type the following on the PC:

```
COPY COM1 <file name>
```

and

```
COPY <file name> SER2SIZ
```

on the QL.

When the Microdrive disk activity on the QL has stopped, the PC should respond to the end of file character by displaying '1 File(s) copied' followed by the DOS prompt. If the PC just hangs, press Shift Break on the QL, type COPY CON SER2SIZ and press Control Z. This sends a Control Z (end of file) code to the PC, closing the file, and giving the DOS prompt.

Copy the file to the screen on the PC (use TYPE <file name>) to check that the file has been transferred. Using a 1200 baud transfer rate minimises the chances of losing parts of the file while the PC is writing to the disk.

Try using a faster transfer rate (it has to be the same for both machines, of course) with the destination file in RAM, on the PC.

## MicroEMACS - A Totally Free Text Editor

The public domain programmer's text editor, MicroEMACS, has been ported to the QL by a QUANTA member, and is now available free, gratis and for nothing from the QUANTA software library.

Although it is not particularly easy to use (some of the key combinations are rather counter-intuitive) it is extremely powerful, and is also available for all the popular micros (PC, Amiga, ST).

John Torofex

# QUANTA

## QL Users and Tinkerers Association Independent QL/Thor Users Group

Worldwide Membership is by subscription only, and offers the following benefits:

Monthly Newsletter - up to 40 pages

Massive Software Library - mostly FREE!

FREE Helpline, Workshops,

Bulletin Board, Regional Sub-Groups

- one near you?

Advice on Software & Hardware problems

Discounts from most major suppliers

Subscription just £14 for UK Members

Overseas subscription £17

Barclaycard : Visa : Access : Mastercard

\*\* Now in our SIXTH successful year \*\*

Further details from the Hon. Secretary

PHIL BORMAN

15 GROSVENOR CRESCENT

GRIMSBY

SOUTH HUMBERSIDE

DN32 0QJ

TEL: (0472) 49850

Prestel MBX 219994776



## EXECUTIVE SPECIAL PRICES AMSTRAD PC/PCW

77 Barry Ave. Ingol Preston

(0772) 723491

All prices plus 15% VAT (Delivery £10 per unit)

Our Price  
£  
5 year  
Lease  
per week  
£

AMSTRAD PCW 8256	319.70	2.34
AMSTRAD PCW 8512	412.92	2.85
AMSTRAD PCW 9512	442.89	3.06

AMSTRAD PC 1640 S/D 20 Mb MONO	722.80	4.89
AMSTRAD PC 1640 S/D 20 Mb COLOUR	816.00	5.33
AMSTRAD PC 1640 S/D 20 Mb ECD	899.00	6.19
AMSTRAD PC 1640 D/D 32 Mb HARD CARD MONO	825.00	5.54
AMSTRAD PC 1640 D/D 32 Mb HARD CARD COLOUR	923.00	6.41
AMSTRAD PC 1640 D/D 32 Mb HARD CARD ECD	999.99	6.87

AMSTRAD PC 2086 3 1/2" DISC S/D 30 Mb 12" MONO	1099.00	7.18
AMSTRAD PC 2086 3 1/2" DISC S/D 30 Mb 14" COLOUR	1199.00	7.84
AMSTRAD PC 2086 3 1/2" DISC S/D 30 Mb 14" HI.RES.COL	1299.00	8.49
AMSTRAD PC 2286 3 1/2" DISC S/D 40 Mb 12" MONO	1296.00	8.47
AMSTRAD PC 2286 3 1/2" DISC S/D 40 Mb 14" COLOUR	1439.00	9.81
AMSTRAD PC 2286 3 1/2" DISC S/D 40 Mb 14" HI.RES.COL	1632.00	10.97
AMSTRAD PC 3286 3 1/2" DISC S/D 65 Mb 12" MONO	2544.00	16.93
AMSTRAD PC 3286 3 1/2" DISC S/D 65 Mb 14" COL	2688.00	17.97
AMSTRAD PC 3286 3 1/2" DISC S/D 65 Mb 14" HI.RES.COL	2880.00	18.98

## COMPUTER SPECIAL OFFER

640K S/D 20 Mb MONO	739.00	4.99
640K S/D 20 Mb COLOUR	871.00	5.69
640K S/D 32 Mb HARD CARD MONO	776.00	5.08
640K S/D 32 Mb HARD CARD COLOUR	907.00	5.93

Leasing is now the most popular method of equipment acquisition for sole traders, partnerships, local authorities, private and public companies alike.

## LEASE

MODERN EQUIPMENT WITH NO CAPITAL OUTLAY  
TAX DEDUCTABLE  
HEDGE AGAINST INFLATION  
PRESERVES EXISTING CREDIT FACILITIES





## Acorny story

The Cuckoo cuckoo's, Doves coo, and the scent of litigation perfumes the air.

Yes Spring has sprung, and so we get not one, but two different lots of acrimony. First off we have software house LTS complaining bitterly about an 'inaccurate' press release from Acorn. It appears that Acorn stole the credit for the DTP software used by some schoolchildren in an episode of the Software show. Acorn have replied by issuing a revamped press release, but no apology. LTS are not happy about this, nor about the DTI either if you read their press releases.

You can't pull the wool over my eyes though, and I reckon it's all just a stunt to gain some publicity for some otherwise dull-as-ditchwater programs. Trying to get education authorities to shell out sixty odd quid for a piece of BBC software is just like flogging a dead horse, it won't get you far.

## Fishy story

Minerva are a different kettle of fish however. Well known for their threats to BBC magazines in the past, they are currently leaning hard on a Methodist minister of all people. All this poor unfortunate has done is to crack the copy protection on two of Minerva's programs.

Perhaps Minerva are worried that more people might find out what's inside their programs! I can't say I've been impressed by

Minerva's offerings up till now. Certainly, I remember their School Administrator package which had documentation which might as well have been written in hieroglyphics. Sigmashet, billed as the worlds biggest spreadsheet, is also ludicrously slow in use.

It's not all bad though, as they have at last started to DTP their manuals (phew!) so at least you can now read them, instead of getting eyestrain.

## Mail supremacy?

Getting software by mail order is often the only way to get exactly what you want. So it comes as a great disappointment to find that the Post Office treats disks with cavalier abandon.

Only yesterday I had a 3.5inch disk returned with the corner almost broken off. Of course the envelope had DO NOT BEND written on it in red. This is obviously not an ideal situation, but unfortunately there doesn't really seem to be any alternative.

What I do suggest though is to contact the Post Office, and complain bitterly if they foul up. Eventually they might take notice, if enough of us make our opinions known. They could so easily introduce a special tariff for delicate objects, and separate pick-up and delivery points.

## The things people say

Had an interesting letter from Mr W of Horsham who accidentally left his BBC B outside in a snowstorm last week. Getting it inside it wouldn't work, surprise surprise.

Writing it off, he gave it to a next door neighbour's young son to play with. Next morning the boy came in, smiling. 'Thanks for the computer,' he said. 'I changed the plug and it's working fine'.

Andrew Brown



## 2's company

Good news this week for those of you who'd like to upgrade to an MSX 2 computer, but can't find a supplier of the MSX2s with the built in disk drive.

A new computer retailer is hoping to be trading from mid June, and he has already found stocks of the Philips 8235 and 8250 computers. At the moment the persons involved in this venture are looking for premises in the Spalding area, and are hoping not only to be supplying MSX hardware and software, but will also be involved in the retailing of the Sega games console and software.

Orders are already being taken for the MSX 2 computers, although a £50 deposit is required on each order. Other items of MSX hardware will soon be available, e.g. modems, printers and disk drives.

For more details and prices of the MSX 2 computers - promised to be at reasonable prices - phone David Webb on 0775 711109.

## It'll slay you

I've had a real bash at Gremlin Graphics' latest MSX release, Hercules, Slayer of the Damned. Boy, is it tough!

In this game Hercules has to compete twelve labours. You tussle with skeletons while trying to collect your labours, which are in puffs of smoke, and fight off a thieving spider which tries to steal the labours you've collected. You eventually get the chance to

fight the Minotaur, an even tougher task.

This game is a real arm archer, and difficult enough to hold your attention for quite a while.

Graphics are pretty good, monochrome figures set against a colourful backdrop. Joystick response is pretty good too. In many respects the game reminds me of Way of the Tiger, and is none the worse for that. All in all one of Gremlin's better efforts.

## FAST talking

There's a lot of talk these days about FAST, the Federation Against Software Theft. Their campaign focuses on the fact that computer programmers are losing revenue due to copying, but I think that more importantly that for machine with a relatively small user base like the MSX, piracy means lower sales, and software houses then sell too few copies this making conversion to MSX an unviable proposition.

For example, Gremlin Graphics have greatly reduced the number of MSX titles released, and it appears that Navy Moves by Spanish Software house Dinamic is not going to be distributed in the UK due to poor sales of their previous titles such as Game Over and Army Moves.

This is a pity as Navy Moves looks as if it would be better than any of the previous releases. I urge MSX users not to copy such games as Image Works' Blasteroids and Ocean's Robocop, to buy them and show these companies that MSX titles will sell in the UK.

## Mazeing

Caroline Kyle from Ayrshire asks me if I know how to collect the cross in World 10 of Maze of Galious.

I'm afraid I don't know - I see so many games I never get to finish any of them! Anyone able to help Caroline?

Keith Neal

## EEC LTD

### PRINTER CLEARANCE



### ★ BROTHER HR10 ★

Daisywheel 80 col. 12 C.P.S. 2K buffer

**C.B.M. Dedicated Commodore version only. (Plugs straight in) inclusive of Tractor Feed.....£125.00**  
(Booklets in English, French and German)  
Previously sold at £335

### ★ SEIKOSHA 500 VC ★

**DEDICATED COMMODORE Graphics Printer. 80 col. 50 C.P.S. 8 Country Character Set, Tractor Feed.....£149.95**

### ★ ALPHACOM 32 ★

**DEDICATED SPECTRUM PRINTER AND INTERFACE, 32 col. (4 1/4"), white paper, fast, quiet, just plug in - £42.95 (For Spectrums & Plus 2 only)**

### ★ BROS HR5 ★

(SUITS MOST MICROS)

80 col. 30 C.P.S., quiet, battery or A.C. operated portable (4lbs) £49.95 (previously sold at £159.95).

Spare Power Units - Brother and Alphacom - £9.95.

Consumables available for all models.

**ORDERS: C.W.O. or VISA. Please add £6 UK, £10 overseas for postage and packing. All offers subject to availability.**



Orders to:

**EEC LTD**



**18-21 Misbourne House, Chiltern Hill  
Chalfont St. Peter, Bucks SL9 9UE  
Tel: 0753 888866  
Fax: 0753 887149**

## LOOK NO FURTHER

You have found Britain's one and only supplier of high quality learning software

*Subjects now available include.....*

**French, German, Spanish, Italian, Welsh, English, General Knowledge, Arithmetic, Spelling, Geography, History, Science, First Aid, Natural History, Sport, England, Scotland and many others.**

Kosmos are specialist producers of Educational Software designed to help you and your children *enjoy learning* from your computer. Our programs even allow you to add your own lesson material.

*Write or telephone for.....*

**a FREE 20-page CATALOGUE of our Educational and Leisure software and details of how to claim your Kosmos T-Shirt.**



**Kosmos Software Limited  
FREEPOST (No stamp needed)  
DUNSTABLE, Bedfordshire, LU5 6BR  
Telephone 05255 3942 or 5406**



# EXPRESS EXPRESS EXPRESS

# SAL

## Freeway PD

at Exmouth Micros

Tel: 0395 287734

13/15, South Street, Exmouth, Devon EX8 2SX.

Public Domain Software

5.25" cost £2.00 3.5" cost £2.50

ATARI ST IBM PC AMIGA

P.S. Please note that Freeway Software Ltd has no association with us. We are independent.

## E.M.P.D.L

Amiga PD disks over 400 in stock. £5.00 p.a. subscription includes 2 FREE Catalogue Disks (regularly updated). SPECIAL OFFERS MONTHLY

Bulk disks 100% certified & guaranteed

3 1/2" DS DD 10	£10.00	Sony Bulk - 10	£11.00
25	£22.50	25	£25.00
50	£42.50	50	£45.00

Amiga A500 Dust Covers - £3.75  
Mouse Mats - Large 12" x 9" - £3.50  
Mouse Mats - Small 9 1/2" x 8" - £3.00  
Lockable Storage Boxes 3 1/2" x 8" - £7.50  
Disk Labels - 100 - £1.50

All prices include VAT and P&P

Cheques and Postal Orders payable to:

**E.M.P.D.L.**  
54 WATNELL ROAD  
HUCKNALL, NOTTS. NG15 7LE

### BLITSOFT Amiga Public Domain Club

£5 per year subscription gives you  
- 3 introductory disks from our rapidly growing catalogue  
- FREE disk for every 3 purchased  
Join now or send S.A.E. (A4) for catalogue  
Members will receive catalogue and disk vouchers  
All Disks £2.50 incl. P&P

Send Cheques P.O.'s to:  
BLITSOFT, 6 Dorney Place,  
Bradwell Common, Milton Keynes,  
Buckinghamshire MK13 8EL

### UNBRANDED DISKS

TOP QUALITY, 100% GUARANTEED, WITH LABELS			
10	3 1/2"	DD DS	135 TPI £8.99
20	3 1/2"	DD DS	135 TPI £17.50
30	3 1/2"	DD DS	135 TPI £25.50

Price includes P&P - Cheque + P.O. to:  
Mr G.S. Bradley, 49 Churchill Ave., Wyton,  
Huntingdon, Cambs. PE17 2EG

### 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

### PUBLIC DOMAIN SOFTWARE FOR THE C64/128

We have 150 disks full of  
all types of programs.  
ALL DISKS ARE £2.95 each.  
Also for the PLUS 4  
Send S.A.E. or phone for FREE Catalogue. (state model)

**KINGSWAY COMPUTER SERVICES**  
Dept NCE, 140 Rushdale Road  
Sheffield, S8 9QE  
Tel: (0742) 588429

### PREMIUM SOFTWARE

24 STATION ROAD, BARTON HALSALL, NR. ORMSKIRK, LANCs., L39 7JN  
TEL: 0704 841213

**SPECIAL LIMITED OFFER (ONLY A FEW LEFT)**  
AMSTRAD 1640 EGA + 32 Meg + Col. Monitor + STAR printer + 5 Meg SHAREWARE  
ALL IN PRICE £1199 INC.

OTHER MAKES AVAILABLE (XT, AT, 286 & 386) FROM £459  
SPECIAL OFFER ON PC2086 AMSTRAD (inc. LQ Printer + Lotus Symphony V2.0)  
FROM £1149 + VAT

HARDCARD WESTERN DIGITAL HI Q (INCLUDES 5 MEG SAREWARE)

20 MEG £224 32 MEG £245

42 MEG £285 54 MEG £499

CDROM DRIVES FROM £499 VIDI PC DIGITISER £119

Multilingual wordprocessor from £239

Star NL10 printer + lead (our best seller) £179

5.25" DISKS D/SD/D FROM .31p 3.5" D/SD/D FROM .89p

Wide Selections of Public Domain & Shareware programs from £1.25, over 4,500 + disks (over 15,000 progs) to choose from. ASK FOR OUR FREE CATALOGUE. ALL OUR PRICES ARE INCLUSIVE.  
What you see is what you pay. No hidden charges. Prices and specifications subject to change without notification.  
WE ARE AMSTRAD AND KYOCERA AUTHORISED DEALERS

AMSTRAD

## AMIGA MEMORY EXPANSIONS

### MX1 - MEMORY EXPANSION BOARD

Low cost, high quality 1/2 meg. switchable board. Ideal for the latest games needing 1 meg. of memory, ie. Dragon's Lair, Dungeon Master, etc.  
Just plugs into your A500 memory expansion slot. MX1 Expansion

ONLY £84.95 inclusive

**MX2** - All the features of the MX1 plus battery backed time and date.  
MX2 expansion, only £99.95 inclusive

**OR** Your Board fitted with 16 \* 256K Dram chips.  
Price includes testing and return P&P.  
ONLY £62.95

**DRAGON'S LAIR, 6 DISKS, 1 MEG ONLY. £34.95**  
**DUNGEON MASTER, 1 MEG ONLY. £19.95**

All prices include postage and packaging. Cheques/Postal Orders to:

**C & M Micros**  
25 Middlefield Road,  
Bessacarr, Doncaster. DN4 7EB



SERIOUS SPECTRUM OWNERS wanting UTILITIES  
PROGRAMMING HELP, PRACTICAL software and  
USEFUL articles, GRAPHICS, INFO, IDEAS and MORE  
from LIKE-MINDED THINKERS, TRY ...

### OUTLET monthly on MDRIVE, OPUS, DISCIPLE, PLUS D, TAPE

£2 gets YOUR FIRST issue! A blank disc or  
cartridge (not cassette) gets a FREE demo!

**CHEZRON SOFTWARE, 605 LOUGHBOROUGH  
ROAD, BIRSTALL, LEICESTER LE4 4NJ**

### THIS SPACE ATTRACTS ATTENTION! FOR JUST £14

CALL SARAH KING TO RESERVE YOUR  
SPACE NOW!!  
ON 0225 446034

## COMPUTERS & BUSINESS

The Home Study course that works.  
Learn about the role of computers in  
today's businesses.

Study in the comfort of your own  
home, our easy Home Study course  
covering such topics as:

- \* Computer at work \*
- \* Programming in BASIC \*
- \* Graphics \*
- \* Machine code \*
- \* Commercial applications \*

FREE brochure, no obligations from:  
**IDEAL SCHOOLS**  
FREEPOST CU4  
GLASGOW G1 4BR

## NCL REPAIRS

Dept 14, 22a Bartleet Road, Washford,  
Redditch, Worcs. B98 0DG  
0527-510409

### REPAIRS TO ALL HOME MICROS !!

- \* Quote given before proceeding with repair if wished.
- \* Free software with every Commodore 16, 64, 128, +4, Amstrad 464, 664, 6128 \* Spectrum repair.
- \* Guaranteed seven-day return if in the UK.
- \* Repair guaranteed for six months.
- \* P&P included in the price.
- \* Spectrum, Commodore, Amstrad, BBC £19.90 - £35.00 or quote given.
- \* Commodore Amiga & Atari ST machines will be quoted before we proceed.
- \* All cheques & P.O.'s to be made payable to N.C.L.



And also ex-Rental software for sale. Prices from 50p

## J.D. LEWIS COMPUTERS & REPAIR SERVICE MAIL ORDER ONLY

5 1/4"	DSDD 96tpi Unbranded	£3.95	Mouse Mats (Red or Blue) Soft Type	£3.75
5 1/4"	DSDD 48tpi KAO	£8.95	Amiga/ST Printer Leads 2m.	£7.50
3 1/2"	DSDD KAO	£16.95	Spectrum Joystick Interface	£7.50
3 1/2"	DSDD Kodak/3M	£15.45	Spectrum Joystick Dual Interface	£8.50
	Disc Cleaners 5 1/4 or 3 1/2"	£3.50	T.V. to Computer Leads	
5 1/4"	Storage Box 140 Capacity	£8.95	1.2m long	£1.95
3 1/2"	Storage Box 80 Capacity	£7.95	2m long	£2.45
	ST Joystick/Mouse Extensions	£4.95	3m long	£2.95
			4m long	£3.45
			Spectrum + 3 Cassette Leads	£3.45

All items subject to availability. P&P FREE on all orders over £10.00. Otherwise add 65p  
Software available with up to 20% Discount. Look out for our advertisement in Issue 28  
Full Catalogue Available Shortly. Send Large S.A.E. for your copy.



Make Cheques & P.O.'s payable to:  
**J.D. Lewis**  
97 Chaplin Road, Longton,  
Stoke on Trent, Staffs. ST3 4RH  
Tel: 0782 323348











# Personal Finance Manager

£29.95

## —The Worlds Most Sophisticated Personal Finance Program—

If you run a personal bank account and have an Atari ST then you need "PERSONAL FINANCE MANAGER".

### AS EASY TO USE AS A CALCULATOR

PFM makes full use of the ST's Gem interface, if you need to amend or update an entry or Standing order simply click on it. Your screen looks just like a bank statement!

### STANDING ORDERS & DIRECT DEBITS EATEN ALIVE

PFM handles Credit and Debit — Monthly, Quarterly, Yearly and even complicated regular payments like 12 payments of £52.99 followed by one of £12.50, PFM will check the date and automatically insert standing orders as they become due.

### BUDGET WITH EASE, AT THE CLICK OF A MOUSE

If you're the type that likes to look ahead then PFM allows you to set budgets for both expenditure and income. Up to 10 budgets can be set over a year, a quarter or a month and then displayed either in figures or as a bar graph for a given period. Income/expenditure for these budgets can also be shown as a pie chart so you can tell at a glance where your money's gone. PFM also allows you to display or print your budget groups selectively so you can see your expenditure quickly and easily.

### BALANCING WITH YOUR BANK ACCOUNT IS NO LONGER A JUGGLING ACT

When you get your bank Statement or a balance from an autobank machine you can confirm it with PFM quickly and easily. Simply select PFM's unique "Auto Balance" option and type in the balance as given by the bank and PFM will attempt to balance and highlight entries that have not yet been processed through the bank.



## Home Finance Program By Peter Veale.

Here's what the critics say:

"PFM is one of those rare programs with which it is easy to feel comfortable from the first time you run it."

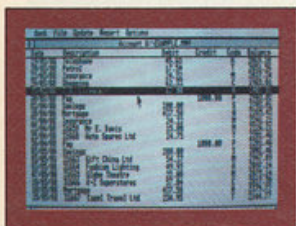
Ron Massey, ST USER

"Personal Finance Manager is a sophisticated home financial package, it will probably help you save money."

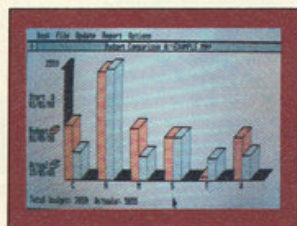
ST UPDATE.

"PFM is just the ticket if your expenditure is as disorganised as mine."

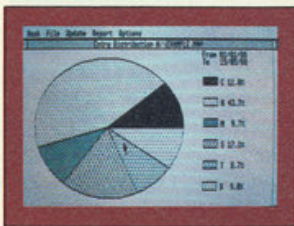
POPULAR COMPUTING WEEKLY.



MAIN ACCOUNT SCREEN



BUDGET COMPARISON BAR-GRAPH SHOWING BUDGETS & ACTUAL EXPENDITURE OR INCOME



PIE CHART SHOWING SELECTED ENTRIES OVER CHOSEN DATES



BALANCE DISPLAY SHOWING HIGHS & LOWS OVER SELECTED DATES

### OTHER FEATURES

- \* The number of entries is limited only by memory size
- \* You define the file size
- \* Old entries are automatically deleted
- \* Automatically places entries in date order
- \* European or U.S.A. date formats
- \* Balance of account graph
- \* Moveable and re-sizeable windows
- \* Run multiple bank accounts by simply using different file names
- \* Facility to check off items against statements
- \* Locates cheques written months ago in seconds
- \* Selective print features for dates/statements/standing orders and budgets

### Free 30-Day Trial

Order direct from MICHTRON and if you are not 100% satisfied, return within 30 days for a full refund.

NOT COPY PROTECTED

### TO ORDER:

SEND TO: MICHTRON  
PO BOX 68, St. Austell,  
Cornwall. PL25 4YB.  
Allow 28 Days for delivery.



BY PHONE:  
WITH CREDIT CARDS.  
TELE: (0726) 68020.  
£30.95 (incl P&P).



Please send me **Personal Finance Manager** at £30.95 (incl P&P)

☐ Cheque enclosed made payable to MICHTRON

☐ Please debit my credit card account:

Expiry date:

Name \_\_\_\_\_

Address \_\_\_\_\_

Signed: \_\_\_\_\_

**MichTron**

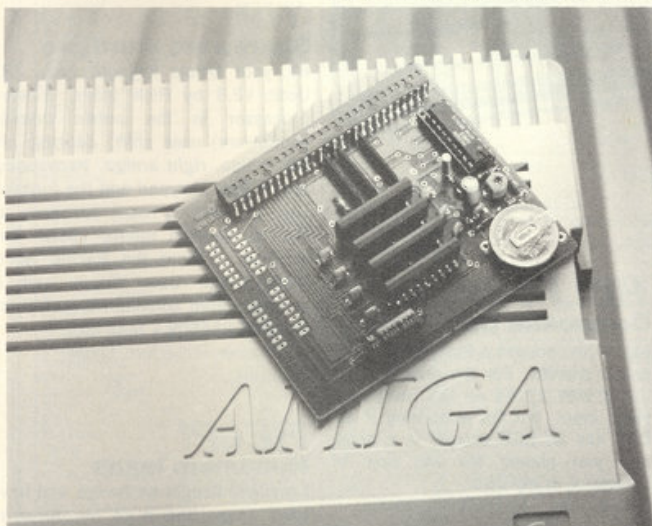


# TIPS

## HELP! Amiga expansion

Congratulations on such a great magazine. I have recently bought a Commodore Amiga A500 with 1084 monitor. I wish to upgrade my Amiga to 1 megabyte of RAM. Some advertisements state the A501 expansion and others just memory expansion all at different prices. What are the differences between them and which do you think I should buy?

P. R. Burridge, Wheatley, Oxon.

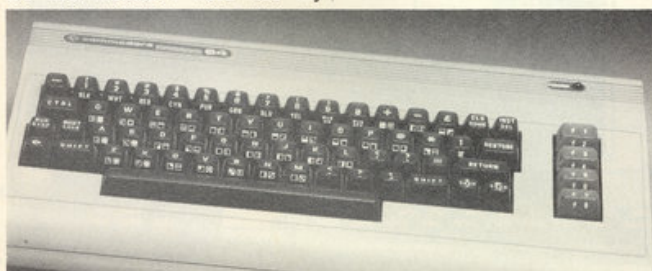


● A typical RAM expansion for the Commodore Amiga.

● By now, you've read the Express guide to RAM upgrades (ish 25) and know all about it. Some of the expansions on sale are compatible with Commodore's own A501 expansion card - others, as you say, are not. If the expansion of your choice isn't compatible then there may be a tiny risk with some software not being able to see the extra memory. Take a look at my choices for the Amiga and pick one of those - you won't be disappointed.

## HELP! C64 digitiser

I am interested in buying a video digitiser for my Commodore 64. For the five months I have had my



● Choosing a video digitiser for the Commodore 64

computer I have been looking in almost every magazine to see if I could find one advertised. This has proved unsuccessful. I would be grateful if you could send me details as to where I can acquire a digitiser.

Nigel Mitchel, Sittingbourne, Kent.

● New peripherals for the tired old 64 are a bit thin on the ground, so the best course of action is to place an ad. in the Express classifieds (form at the back of every issue).

## HELP! Mixing it

Please could you help me? Amongst my hobbies as well as computers I like mixing songs together. I have a four track mixer a couple of turn-

tables etc. I also have an Amiga and I have heard some samples which it can reproduce and I would like to combine the two hobbies. So please could you tell me the best sampler there is and also software which can play four samples at once of possible. Also, where can I get leads to connect the computer's audio output to my mixer. I would be very grateful for any help you can give

Matthew Wakley, Seaton, Devon.

● Call Datel Electronics on 0782 744707. They have all the hard and software you need to sample and play back music.

## TIP Help on hand

We can help your reader Derek Byrne and others like him who are searching for serious PD software for their C64, 128, Plus4 or even the PET. The Independent Commodore Products User Group has a huge software library which is free to members. Our service to Amiga users is well known and we have the latest Fish disks up to 194.

Our members send a blank disk to the appropriate librarian who will send in return a catalogue disk from which to make a selection.

For details of membership write to Jack Cohen, 30 Brancaster Rd, Newbury Park, Ilford, Essex IG2 7EP. John Bickerstaff (Chairman) Croydon.

## HELP! Aladin's lamp

I am a student and would like to upgrade from a PCW to an ST or Amiga. The only problem is that I have lots of Macintosh software and can't afford a Mac - who can! I also want something that plays games well. I am aware of the Aladin emulator for the ST which sounds excellent. There have been short mentions of a Mac emulator for the Amiga in certain other publications but all they say is that it is available in America. Why can't it be bought over here? I have contacted loads of dealers but nobody knows anything about it. Please, please could you give me some details as I can then chose between the two systems (hard disks are essential).

Michael Stephenson, Port of Erin, Isle of Man.

● You have lots of Mac software but no machine? May I ask where you obtained the software? Am I to assume that you have access to someone else's Mac and have made copies of the software? Uncle Techtip is crusading for a world free of software pirates brothers and sisters, Hallelujah!

Don't copy software Mike, it isn't nice. The new Amiga Mac emulator is excellent. It can read Mac disks directly but for you, the device is next to useless as it can't access hard disks. You should choose the ST and buy acopy of Spectre 128 the new Mac emulator from Hisoft (call them on 0525 718181). The Spectre offers a 30% larger screen, 20% increase in speed and can access hard drives faster than a Mac - it also uses the new 128K Apple ROMS which you can buy from Hisoft with the device.

## TIP Seen and heard

I have just read the 15th April issue of Express. Your main article on which micro to buy explained about the beep sound of the PC. I have news - there is a sound board available for the PC! It is made by

the Innovation Computer Corporation in the USA.

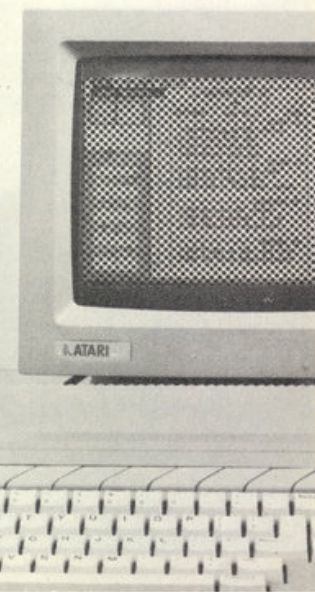
The Innovation SSI-2001 sound board is a half-height, plug-in expansion card that will fit any IBM compatible computer. The card has a 15 pin game port for joysticks and an RCA jack for headphones or an external amplifier. Three voices of synthesised sound. At present software is being developed by Spectrum Holobyte and Microprose. By summer, there should be 12 or more games supporting the card. Cost of the board is \$129 and Innovation are happy to ship units to this country. The company's address is Innovation Computer Corporation, Innovation Building, 1325-1327 Juniper Street, Cleveland, WI 53015 USA.

John Crawford, Tiverton, Devon.

## TIP Oh Brother!

Regarding your reply to Keith Spence about connecting a serial printer to the ST, having had trouble connecting a Brother EP22 to the ST, the following may help. There is a problem with the serial problem of the ST. The book Atari ST Internals states that the CTS pin is non-standard and prevents serial printers working. However, in a document file on the 1st Word disk, the following connections are given and they certainly work with the EP22.

With a 25-way standard connector



● Serial connections and the Atari ST

make the following connections. ST pin 1 (PROTECT) to printer pin 1, ST pin 2 (TX) to printer pin 3, ST pin 5 (HANDSHAKE) to printer pin 20 and finally, ST pin 7 (SIGNAL GND) to printer pin 7. I hope this will be of use.

Ian Ferguson, Lowry Hill, Carlisle.

## HELP! Mini changes

Can you or your readers help? I recently bought a budget copy of MiniOffice (released by Summit Software) as a first foray into the world of databases, word processors and spreadsheets.



I have transferred them to disk and changed the device number to save files to disk but being a dum-dum as far as programming goes I would appreciate some help to change the save routines in the database and spreadsheet programs to include a save/replace feature.

R. C. Whinnerah, Letchworth, Herts.

● The Reverend Techtip replies: There is a little known parable (in the stop press at the back of the book) concerning the four dum-dums. Three of them used their software diligently and remained true to the word of the licence, but the fourth – decided to break copy protection and corrupt the poor software for his own purposes. One night this fourth person experienced a visitation from the forces of the great spirit FAST and was never seen or heard of again – here endeth the first lesson.

You didn't even tell Uncle Techtip which machine the software is running on, so how can I help.

## 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.

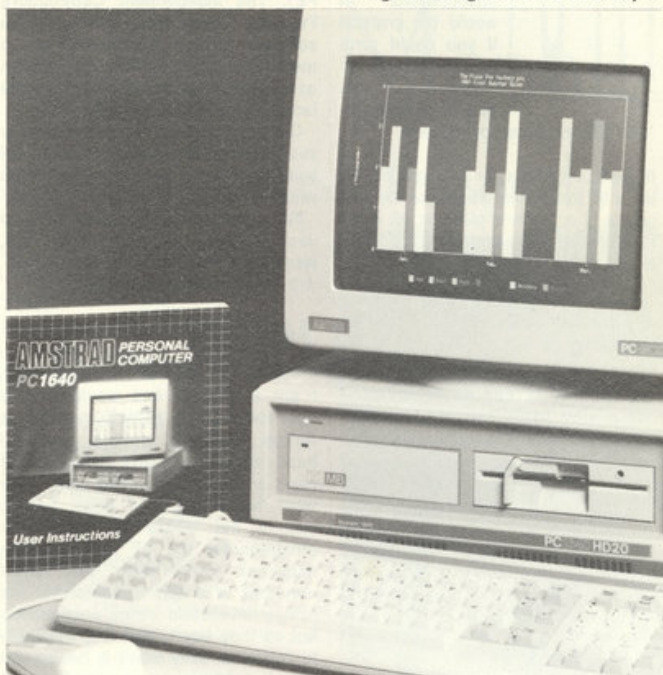
## TIP Never ending story

I own an Amstrad PC1640 with a mono monitor. I think that some of your readers might be interested to know how I went about converting it for use with a colour monitor. I purchased a second-hand Taxan 760 colour monitor in the first place but I had to use the mono monitor for the power supply.

I traced a suitable power supply to Display Electronics of 32 Biggin Way, Upper Norwood, London. The type is a 13090 made by Boshert. This power supply is of open construction so it will require a suitable case with due regard to the mains voltage involved. The 14 pin DIN plug for the

power supply is available, complete with cable, from Genuine, 27 Ramford Street, St. Helens, Merseyside price £7.95 + £1.00 VAT.

I have been using this set-up for about two months without problems. T. J. Hancox, Patchway, Bristol.



● Changing the mono monitor of the PC1640 for colour.

## HELP! Better BASIC

Did you know that the graphics commands in GW BASIC supplied with the 2086 will not function properly on the high resolution monitor. Something to do with GW BASIC not being programmed for the pixel size of the screen. Can you tell me

1. Is there a command or program to enable GW BASIC graphics to be used with colour on the monitor described above?

2. If 1. then is there a manual for programming GW BASIC?

3. If not 1. is there any BASIC language program in existence which will work to full capacity with the above configuration?

1. Butterworth, Royton, Oldham.

1. No.  
2. There is a quantity of BASIC programming texts the size of a small planet. Visit any branch of Waterstones. With a little application and a pocket full of moolah you'll find something.

3. Call HiSoft on 0525 718181. HiSoft is one of the best language suppliers in the UK (I'm angling for freebies, right? – Tech Ed) and will be able to furnish you with a replacement for the dreadful GW BASIC.

## HELP! Dreaded infection

I was wondering if you could give me some advice about Amiga viruses? I recently borrowed a public domain disk in (...edited here. Yes, it's the old story – Tech Ed).

K. A. Grant, Reading, Berks.

● Read the Express feature all about

viruses and what to do if they infect your machine (Express issue 19) available from Express back issues, The Old Barn, Somerton, Somerset TA11 7PY, for the amazingly cheap price of 75p including post and packing. I just don't know how we do it, I really don't. I was just saying to Madge in the High street the other day...

## HELP! New serial

Can you help me please? I drive a Seikosha GP100A (this isn't a motoring mag – Tech Ed) printer (I stand corrected) from my Spectrum +2 using a Tasword +2 package. I cannot get the graph commands to work. I have tried the program in this week's Techtips re. self drive printing, but I can only get ordinary text. Do you know any tricks for this (I have nothing up my sleeves and absolutely nothing between my ears – Tech Ed. Hang on, that's not right...) either with Tasword or LPRINT?

Also, can you assist with a suppliers name. I wish to get a disk drive (with an interface) for the +2.

● Anyone with information re. the first problem can call Uncle Techtip and I'll pass on the glad tidings. As for your second query, call MGT on 0792 791100 who market a range of drives for the Spectrum.

## TIP Shareware word pro

Re. your article keynotes (ish. 23). Uedit V2.3 by Rick Stiles, a word processor in the public domain (shareware) uses shift, control, alt, left amiga, right amiga, backspace, cursor keys, keypad and the function keys to perform many functions as well as optional mouse clicks. The program is from the Pacific North West Amiga User Group and is available from Softville PD (call them on 0705 266509 – Tech Ed).

J. P. Banner, Rotherham, South Yorkshire.

## HELP! Needmore leads

I recently bought an Amiga and have tried connecting it to my Amstrad CPC464 colour monitor without much success. Can you tell me how to wire up the lead, or who can supply such a lead?

G. J. Rees, Chelmsford, Essex.

● Call Meedmore Ltd on 051 521 2202 who supply 500 leads for all makes and configurations.

## HELP! Composite Commodore

I have just bought a Philips CM 8833 colour monitor. For the time being, I use it with a C64 on the composite video input, but I'm wondering if my C64 has an RGB output? If it does, can you please tell me how to connect it to my C64?

Gerald Corny, Palmers Green, London.

● Prepare yourself for a shock G. C. – it doesn't! Carry on using the composite output and all will be peace and tranquility. Our very own Rik 'Hitman' Haynes who – by his own admission – has a very strange set-up, uses the CM8833 monitor with composite input and experiences no problems – at least, not problems associated with computing...



● The Amstrad colour monitor. Used with every machine other than the CPC



**Hellfire Attack**  
ST & Amiga £4.95



# EXPRESS Classifieds

**SOLAR SOFT PDL** offers you the Mini Office Business Pack, Address Book Database Spreadsheet 1st Word for £7.50 £1.85 each! Payable T O'Brien 2 Muswell Close, Theale, Nr Reading, Berks

**SPECS NEWSLETTER:** Sinclair Spectrum support. Just 75p inc P+P. Paul Harrison, 17 Bullington Road, Oxford, OX4 1QQ Includes mysterious Kevin Allsworth (0865) 721286

**DDI-1 DISK drive and interface**, worth £159.95 will accept £80.00. Contact S Livingston at, 3 Palgrave Square, Penneywell, Sunderland, SR4 8EA

**ATARI 520STFM** 5 months old with guarantee includes joystick, blank disks, games. All boxed as new £260 ono 01-574-2000

**AMSTRAD CPS8256** serial and parallel interface. Enables PCW users to connect to external printers and modems. Only £25 Tel: 0525-220980

**XT 8086 conversion board** inc software £60 CGA card £20 Will exchange memory chips 0202 298083

**ATARI ST FAST basic cartridge** £30. Hisoft Devpac £15. Jackpot pools £12. Originals. 0789 763502 (Works) after 6pm

**PRINTER: AMSTRAD DMP 2000** 9-pin dot matrix. Excellent condition £95 tel (0636) 71275

**ATARI 520STFM** with over £750 worth of games including Falcon and Thunderblade. Will sell for £400. Contact John (0733) 310449

**COOL AMIGA contacts wanted**, no beginners. Write to Stace.K, 19 Burton Lane, Goffs Oak, Herts EN7 6SG or phone 0707 873015

**XEROX 4020** colour ink-jet printer 1st class condition cost new £1600 will accept £495 ovno Mark 01-903-8964

**COMM 64** and software inc. Seuck, Solid Gold etc. £90 the lot. C Yau, 39 Delancey St, London NW1 7RX

**WANTED QL disk and memory swap** for Psion organiser IXP 32K Datapack Spellcheck leather case books phone Carl 0462 670177

**C64, DATASETTE**, excelerator disk drive, MP5803 printer printkit/IV fitted, freeze machine, joystick, games/utilities, Neos mouse/cheese £250 phone 01-441-1127

**AMIGA SOFTWARE.** Interceptor, Jinxter, Carrier Command, Silent Service, Starglider, Nebulus, Captain Blood, Virus, Pawn, plus many more. £10 Ring 0353 661080

**WS4000 MODEM**, upgraded to WS3000 specifications. V21/23, auto dial, auto answer, number store. £120. Boxed with manual, leads. (0302) 370136

**92 TEAMS** needed for Football PBM now! Letter featured in Express 18 all replies answered. Spread the word OTP's coming! (0734) 419417

**ST SOFTWARE for sale.** Heroes of the Lance and FOFT £15 each. Both Originals. 0533 885171

**AMSTRAD 464** computer £400+ software, dust cover, joysticks, books, mags. Sell £100 ono. Tel: Malcolm, (01) 878 9945 after 5pm.

**SNAP (ORIGINAL)** Deluxe Productions for (original) Director for the Amiga. Gordon Keenan, 61 Glenfinnan Road, Glasgow Tel: 041-946-9110

**AMIGA DRIVE** and thirty disks all for £90 ono. All excellent condition. 2 Ashfield Grove, North Shields, Tyne and Wear, Tyneside 091-259-5702

**ST GAMES:** Ikari Warriors, Super Sprint, Zynaps, Speedball - £6 each. Thrust - £3. Lipstick plus (voice activated firebutton) - £6. Phone 0405 915637 (Paul)

**SHEFFIELD'S ALTERNATIVE solution BBS** (0742) 325232, V21/23, 8N1, weekdays 6pm - 11pm, weekends 9am - 6 pm. News, hints, files, etc. No fees.

**PD DISKS for sale.** Must clear the lot £1.50 each (Amiga only) SAE list 113 Main Street, Forth, Strathclyde ML11 8AB

**ZX81 AND ZX16K Spectrum Club.** Write to: - Robert Froddick, One Northolme Close, Grays, Essex, RM16 2NX for details.

**GLENTOP GFA BASIC compiler V 2.0** fast two-pass compiler, needs no linker. Unwanted gift worth £40. Sell for £15. Ring Dave 0276 64606.

**ARCHIMEDES 310M** with colour monitor, PC emulator. Two disk drives, printer lead and lots of software £1,050 ovno (0727) 22497

**SEGA MASTER system**, extra control stick, 8 games worth £214, sell £100. Tel. 0292 77300 after 4pm

**WANTED: INTERFACE 1** (Microdrives not essential). Must be in full working order. Phone Daniel on Dunstable (0582) 472067 after 4pm

**PHILIPS PORTABLE P2012C.** CPM2.2, Wordstar, Calcstar, Cardbox, many others. Manuals, cables, with daisy printer and ribbons. £300 (0929) 462634 (Dorset)

**THE BEST offer ever! Spectrum 128K +2** with joysticks, video digitiser and £400 brilliant

and utilities. £125 Richard: Aldershot 22411

**SPECTRUM SOFTWARE** tape originals Tasword 2 wordprocessor £3, VU3D 3Ddrawing £3 Powerprint poster printer £5. Phil Peterborough 204534

**HUNDREDS OF** original Spectrum programs for sale. For list send an IRC to Thierry Kumps, Langeweg 193, B-1900 Overijse, Belgium

**PD for the ST.** For latest catalogue send SAE to: The other PD Library 108, Kenmare Road, Wavertree, Liverpool L15 3HQ

**C64 MODEM.** Compunet type. BBS software supplied plus Cnet info. Bargain £10. Write to: Graham 43 Fairholme Road, Hodgehill, Birmingham

**AMSTRAD TAPE + disk games** send an addressed envelope for full list. All original games. 01 443 2970

**ATARI ST, ART director, DGCALC,** £19 each. CPT. blood, Outrun, Test Drive, £8 originals, Roger Poppleton, 8 Waldemar Avenue, Fulham SW6

**ATARI ST software.** Xenon, The Pawn, Ballyhoo, £6 each. Send SAE with PO/Cheque to M. Pease, 103 Nursery Close, Helledon, Norwich NR6 5SL

**FOR SALE** Commodore 64 games, tape only, from only £1, all originals. Telephone 091 263 4866

**FOR SALE,** Amstrad software, Robocop, Never Ending Story, Thunder Cats etc, cheap, good condition. Telephone 01941 607911, Jonathan.

**ATARI 520 STFM** under guarantee. Double sided drive. Also Barbarian 2, F16 Combat Pilot and loads more. Sell for £400 ono, Phone 0670 851513

**TAS WORD,** Tas Print and Tas Spell for Spectrum +3. Artist 11 (48k), Writer (48k) as new, £7.50 each. Phone 0636 71275 after 4pm.

**COMMODORE 1551** disk drive (works with plus four only), £45. Also +4 light pen and software, £6. Telephone 041 889 7388.

**SPECTRUM +48K** for sale, 30 original games, joystick and interface worth £150, will sell for £59.

**COLECOVISION GAMES** unit with Donkey Kong cartridge £35, VCS add on for above, £22. Both in unmarked condition, telephone 0983 840363.

**YAMAHA SHS10** midi keyboard. 25 voices/rhythms, pitchbend, sequencer. Video tutorial, £60 ono. Mike, 103 Nursery close, Helledon, Norwich, NR6 5SL.

**WANTED ATARI ST!** No software, but in good working order. Must be cheap. Phone 0726 72323 8am - 4.30pm, ask for Tony.

**C64 SECOND HAND** bargain tape games for sale. Send SAE for list. Roddy Mackenzie, 14 Lynedoch Road, Methven, Perthshire PH1 3PH.

**AMIGA CONTACTS** wanted for swaps, ideas, phone Ken on 0533 830760.

**SEGA AND Spectrum 48+**, Sega eleven games, Spectrum fifteenth. Also light phaser + two joysticks, £250 only. Phone 01 685 0277 after 5pm.

**EINSTEIN TC01** colour plus mono monitor 800Cil. card, twin drives, manual, software, Einsoft Forth, £250. Chown 039 86273.

**ST MUSIC** matrix midi disk mag for the ST user with a midi system, also midi p/d library. Phone 0592 714887.

**C16 +4 ORIGINAL** games software, utility disks, bargain prices! Send SAE for list; Billy Miller, East Lodge, Finlaystone, Langbank, Refhewshire, PA14 6TH.

**ST FREEZE** back up cartridge plus software, £25 (for Atari ST). Also Elite £9.75 Strike Force Harrier £4.75. Telephone 01 868 6028, originals.

## 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.

The charge is £5 per entry, up to a maximum of 20 words. Payment can be by postal order or cheques made payable to Future Publishing Ltd.

Send off the form today and your ad will appear in the next available issue of New Computer Express.

## Express 26 Classifieds form

Name .....

Address .....

.....Tel .....


One space equals one word. All adverts must be 20 words or less.

### Please note:

- 1 All entries should be accompanied by £5 payment
- 2 New Computer Express will not accept responsibility for any minor typographical errors which do not materially affect the meaning of the adverts.
- 3 We cannot vouch for the quality of goods and/or services advertised in this section. All ads are accepted in good faith.
- 4 We reserve the right to amend or even refuse ads at our discretion.
- 5 No pirated software may be sold through these columns. Any readers being offered non-originals should contact us.
- 6 We cannot guarantee that adverts will appear in a specific issue of New Computer Express.
- 7 The following declaration must be signed:  
I have read and understood the terms for the inclusion of my ad.

Signed .....



# Eye to Eye

Rik Haynes takes a look at the latest release being hawked by Thalamus



## HAWKEYE • THALAMUS

Considering the success of *Hawkeye* on the C64 last year, it comes as little surprise that Thalamus should choose this platform game as its first foray into 16-bit territory. Currently under development on ST and Amiga, *Hawkeye* features 12 horizontally-parallax-scrolling levels. Originally programmed by Dutch team, Boy Without Brains, *Hawkeye* is being converted to 16-bit format by Esprit Software, and is due for release later this month.



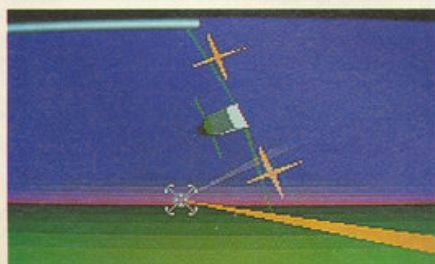
## ALTERED BEAST • ACTIVISION

Continuing its commitment to convert the latest coin-ops over to Spectrum, C64, CPC, ST and Amiga, Activision is due to launch Sega's scrolling martial arts hack'n'slash-em-up, *Altered Beast*. Other Sega coin-ops on their way to micro-format – via Activision – include *Power Drift*, *Galaxy Force* and *Super Wonderboy*. Let's hope they're more playable than the last Activision/Sega over-hyped coin-op Christmas biggie, *After Burner*.

## TAIL GUNNER •

### ACTUAL SCREENSHOTS/CRL

Due for release on the Amiga in July, with an ST version following in August – *Tailgunner* recreates the dangerous but crucial job of a tailgunner in a World War II bomber. Blowing away the bogey at one o'clock while keeping an eye out for another member of the enemy flight formation – you'll have to be on the ball to stay one step ahead in this shoot'em-up.



## LEGEND • ACTUAL

### SCREENSHOTS/CRL

Playing either a king or a queen, *Legend* allows you to partake in a spot of empire building as you take on all comers in this role-playing adventure. During play you can cast spells, make or break armies and dispatch all manner of evil or good, depending on what sort of leader you wish to be. Available soon on ST, with an Amiga version due out in June.



## TANGLED TALES •

### ORIGIN/MICROPROSE

From the software company that brought us the *Ultima* series of role-playing adventures, comes *Tangled Tales* "The Misadventures of a Wizard's Apprentice". Reportedly offering a more light hearted approach to the role-playing genre, *TT* is a blend of menu and icon interfaces, with you set in the role of a wizard's apprentice, undergoing three tasks to prove your worth. Out soon on C64 and PC.



## FUTURE SPORT • ACTUAL SCREENSHOTS/CRL

*Future Sport* is a multi-directional scrolling shoot'em-up recreating the sport of the 21st century – street violence transferred to the stadium. What with its Practical Virus Killer and a string of new releases, CRL looks set to make more of an impression on the software market this year. *Future Sport* is out later this month on ST, with an Amiga version to follow shortly afterwards.



## BATTLE CHESS • ELECTRONIC ARTS

After its debut on the Amiga, and even an outing on the trusty old PC, *Battle Chess* is due to make an appearance on the ST next month. Featuring an admirable blend of classic gameplay and 4 Megs of animation graphics and sampled sound, *Battle Chess* is the most attractive micro implementation of chess we've ever seen – we wonder when its out on the ZX81?



## FIRE KING • STRATEGIC STUDIES GROUP/ELECTRONIC ARTS

Available on C64 disk in early Summer, *Fire King* is a fantasy arcade/adventure role-playing featuring an overhead scrolling view of the action. Taking on the quest to throw some light on the death of the great *Fire King*, you'll meet all sorts of monstrous scum like Vampire bats, while constantly on the look-out for the mysterious and deadly *Death Beasts*.



● Real variety in software origination this week, with the latest from Germany, USA and UK.

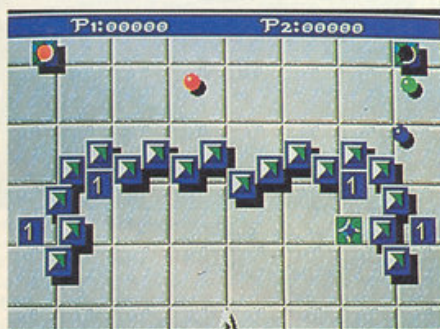
Fielding drove a steering wheel to steering wheel road test with *The Duel* and *Lombard RAC Rally*, but afterwards decided to stick to his trusty old Sinclair C5.

*International Karate* kicked off ok on the PC – albeit with a crummy CGA display – and German-sourced *Tom & Jerry* and *Beam* recieved only indifferent reviews. But the game that outshone the rest was *Total Eclipse II* – another great example of UK programming skill.

## BEAM

MAGIC BYTES

£ TBA  
Other versions TBA



● A beaming release...

Nothing esoteric here. Just a plain ol' computer game depending on addictive qualities rather than any fancy notions of gameplay or graphics.

### ● GAMEPLAY

You are a cursor under inertia which Beam clearly couldn't be bothered turning into anything faintly resembling a ship.

Fire button will put the skids on as the ship attempts to avoid nasty bouncing balls. All that needs to be done is knock out a load of bricks and link up fire banks with laser beams.

If you're really dumb you'll cross your on beams – end of chat. All your efforts will be rewarded with a trip to another screen in much the same way as *Arkanoid*.

Indeed, the whole affair is best described as *Breakout* with lots of horrid baddies and you in total control of the ball.

### ● SOUND AND GRAPHICS

Dreadful Euro Pop electric screechings make up the title sound track – sane people will almost certainly prefer silence. Sound effects are minimal and fade into the subconscious – as the darned things should.

On the graphics front Beam looks presentable and doesn't pretend to be anything else. Magic Bytes has wisely decided not to faff around with sprites and the like which, in this case, can only get in the way.

### ● EXPRESS VERDICT

A higgledy piggledy mish mash of lots and lots of game concepts going back to the earliest days of Pong. Some clever sod somewhere had the bright idea of chucking the lot together and offering Amiga owners a simple little affair with no pretensions. It looks like a decidedly dodgy

# TOTAL ECLIPSE II

INCENTIVE

CPC £11.20cs (includes Total Eclipse I)  
Available from Home Computer Club (01 637 0341)  
also out on Spectrum, C64.

*Driller*, *Dark Side* and *Total Eclipse* owe their success to the Freescape system developed on the CPC and their immensely involving gameplay. *Total Eclipse II - The Sphinx Jinx* - continues the mix, though here you only have one hour to complete the brief.

### ● GAMEPLAY

Your mission is to rebuild a Sphinx from 12 parts hidden around the underground system of tunnels and caverns of an Egyptian pyramid. You have a revolver, wrist watch, water bottle and compass to help you manoeuvre your way through the subterranean maze and negotiate levitating floors, shrinking rooms, invisible walls, disappearing stairways and mirages. Like its predecessor, you encounter undiscovered chambers and barriers along the route only accessible if you're in possession of Ankh's - Egyptian symbols of Life. But the deviousness of design makes *Eclipse II* much much harder. For a start there's less water to replenish you and you can't rest as much since you only have an hour to complete the task. As such the load/save feature is essential plus you'll need to make a map because we're talking



serious puzzlement cut with plenty of fiendish traps. Although it will obviously help, you don't need to have played the prequel to succeed in the sequel.

### ● GRAPHICS AND SOUND

Freescape graphics convey a convincing impression of endless solid constructions. The main screen is devoted to a viewing window surrounded by various indicators of your current state of health, progress and orientation. At any point you can move up, down, forward, back, left, and right so you can easily lose all sense of direction. There's also the usual skilful use of shading to convince you there's a lot more than just four colours up and running. Sound is confined to beeps and spot-effects but still maintains the great sense of atmosphere.

### ● OTHER VERSIONS

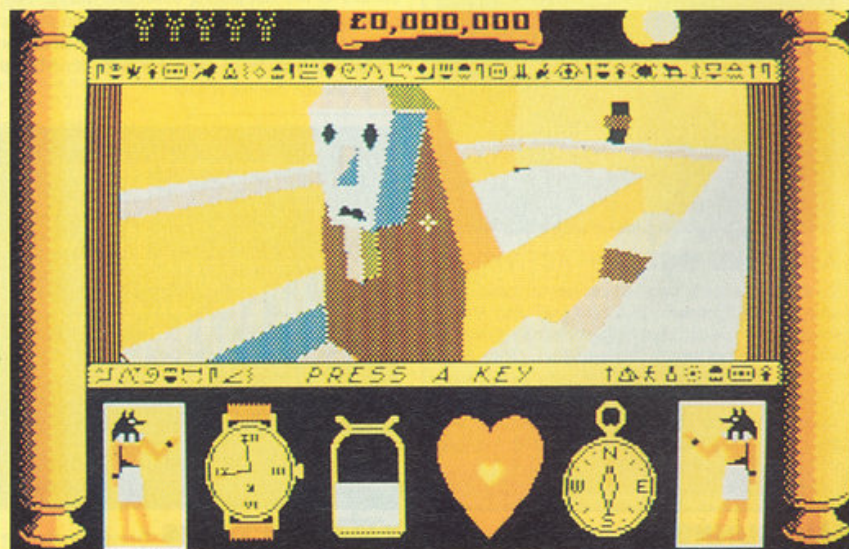
*Total Eclipse II* is as yet unseen on the Speccy and C64. ST and Amiga versions will follow. Both *Total Eclipse I* and *II* are available together for £11.20.

### ● EXPRESS VERDICT

Another winner from Incentive in terms of convincing atmosphere, technical accomplishment and graphic excellence. Although Freescape's screen updates aren't anywhere near fast enough to support frame animation, they're still quick enough to deliver the sheer involvement essential to any game. And in this game the difficulty factor is cranked up so high it'll take you hours before you finish it in a hour!



Andy Storer



● Play like an Egyptian?

affair at first sight. But soon emerges as, in the blandest possible terms, a nice game.



John Mc Cleary

## INTERNATIONAL KARATE

System 3

IPC £24.95  
Also on C64, ST

Already highly regarded by C64 martial arts gamers, *International Karate* has just hit the

PC screens in CGA only, perhaps the worst graphics mode this side of a PCW...

### ● GAMEPLAY

*International Karate* is a kick-em-to-death-em-up played against a series of stylised backdrops from around the world, ranging from Sydney, Australia to New York, USA.

Playing against the computer or a human opponent, you control a nimble karateka with 16 possible manoeuvres under your (black?) belt – including a front lunge punch, flying kick, back crouch punch and an infamous roundhouse – with just one aim in mind, knocking out your opponent.

### ● GRAPHICS AND SOUND

CGA graphics fail to enliven or inspire, although the sprites and backdrops are accurate representations of their C64 parent. The only remarkable aspect of the visuals is the terrific speed at which the sprites move and animate around the screen.



## 520ST-FM SUPER PACK



The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The pack includes a 520ST-FM with 1Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

# £399

INCLUDING VAT

With SM124 mono monitor: £498 INC VAT

With SC1224 colour monitor: £698 INC VAT

### 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
Quadrailen	Logotron	£19.95
Ranarama	Hewson Consultants	£19.95
Return To Genesis	Firebird	£19.95
Roadways	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

# 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. £SOL

## 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

## 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 a 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 Silica/SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- \* TEXT-FLOW AROUND GRAPHICS
- \* ROTATION OF TEXT & GRAPHICS
- \* SLANT OR TWIST ANY OBJECT
- \* POSTSCRIPT COMPATIBLE
- \* TAG FUNCTION
- \* AUTO/MANUAL KERNING & HYPHENATION
- \* GROUPING OF OBJECTS

## 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 05 89 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX  
**PLEASE SEND FREE LITERATURE ON THE ATARI ST**

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

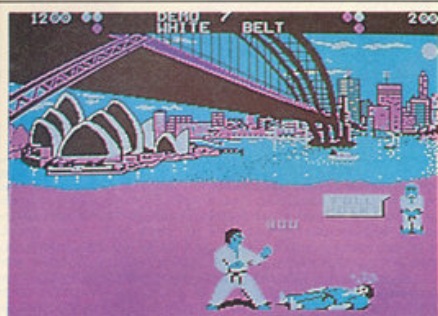
Address: .....

Postcode: .....

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

DTP ☐





● Kicking ass down under

Audio is even worse – as you could probably guess – with a totally irritating version of the oriental soundtrack and puerile sound spot-effects.

#### ● OTHER VERSIONS

A timeless classic on the C64, IK scored highly in both audio and visual departments, thanks to the talents of programmer Archer Maclean and musician Rob Hubbard.

ST IK hits the mark as well, with picturesque backdrops and really cute sprites – in fact, it was one of the first games to successfully show off the ST graphics capabilities.

#### ● EXPRESS VERDICT

PC IK is a fast'n'furious game which provides a dimension of urgency not usually found in a PC release. This is unfortunately negated by the appalling CGA graphics, which leave you with the unwholesome feeling of being badly let down somewhere along the line.

International Karate is still worth a look, though – especially if System 3 do an EGA version.



Rik Haynes

## TOM & JERRY

MAGIC BYTES

Amiga £ TBA  
Other versions TBA

After its lacklustre attempt at producing a computer game based around The Pink Panther last year, German software house Magic Bytes now has Tom & Jerry targeted for computation.

#### ● GAMEPLAY

Horizontally-scrolling platform action again folks, but this time it's not even interesting enough to inform you of any relevant gameplay info.

#### ● GRAPHICS AND SOUND

Clichéd backdrops, ineffectual sprites and revoltingly slow speed make Tom & Jerry look and sound more like a license of a technical manual rather than a fast paced, classic cartoon series. The Tom & Jerry sprites are recognisable but certainly not outstanding and the monotonous soundtrack sounds like it comes from an

appalling "Oh no, what will the Vicar say?" TV sitcom title tune.

#### ● OTHER VERSIONS

No details at present.

#### ● EXPRESS VERDICT

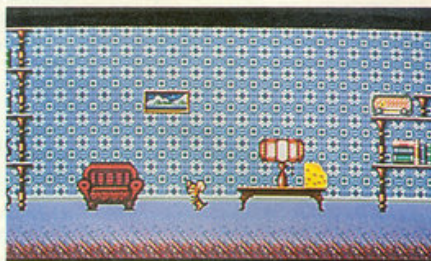
The fact that this game is just an inadequate attempt could be forgiven if it wasn't such a total misuse of a great opportunity.

Imagine what this license could have incorporated – snippets of the cartoon series could have been used, animation and sound-effect sequences could have been formed from the cartoon's huge repertoire, and the best of the set pieces could have been used for stage scenarios. But not in this release, what you get is a standard platform affair, written to strict formula – not even uplifted by decent audio-visuals.

Tom & Jerry, the computer game is a waste of time. You're better off sticking to the excellent cartoons.



Rik Haynes



● By the way, you control Jerry

## Road Test ★ Road Test ★ Road Test

### THE DUEL/TEST DRIVE II

Accolade Software

PC £24.95  
Also on C64, Amiga

Sick with envy when a Porsche 959 forces your moped into the gutter? Maybe your salary at the dog-food factory won't stretch to the rich oil's favourite form of transport, but you can have the next best thing in the form of The Duel with Accolade.

#### ● GAMEPLAY

After choosing either a Ferrari F40 or a Porsche 959 as your street-cred conveyance, you find yourself at the wheel of the chosen beast on a typical-looking American highway just waiting to take off.

You can race against the computer or the clock so after moving smoothly thru, sorry through, the gears you will either worry about the time, or the white computer car up your ass.

The game involves you racing across the States, avoiding the cops, remembering to gas up, avoiding juggernauts whilst overtaking other vehicles and

generally experiencing the thrill and exhilaration of racing a fast car against crazed silicon opponents. That's the idea, anyway.

#### ● GRAPHICS AND SOUND

The game is opened with a tune reminiscent of the Peruvian nasal flute being played by a drunk with a runny nose. The rest of the game's sounds are buzzings, squeaks and squawks that will have you reaching for the volume control or the sick bag.

Graphics are progressive and the whole concept is innovative. Unfortunately, owing to the limitations of the PC, the display is crap – what more can I say? Slow and blocky with dreadful colours and indistinguishable landscape features.

#### ● OTHER VERSIONS

Also out on the C64, Amiga, Spectrum, CPC and ST versions under development

#### ● EXPRESS VERDICT

A good idea poorly implemented. The car is difficult to control and the display is difficult to decipher – save up your gelt and buy yourself a driving lesson.



Fielding 'Stirling' Mellish.

## LOMBARD RAC RALLY

Mandarin Software

PC £24.95  
Also on ST, Amiga

Transfer your desires to burn up the streets in a rodded Cortina MKII to the relative safety of your micro by zooming around in Mandarin's RAC rally sim

#### ● VERSION UPDATE

After getting through the opening 'setting-up' screen in which you can choose to give a TV interview and select the leg of the rally you wish to execute, you find yourself seated at the wheel of a Ford Sierra Cosworth at the start of the race. A chequered flag drops before you then it's hard forward



● Less exciting than Top Gear? Impossible!

on the joystick, sorry, accelerator and in a flurry of mud, you're off.

The point of the race is to complete your chosen section in a time sufficiently small to entitle you to the doh – to do this, you must drive at top speed along a screen display resembling a scrolling zebra crossing. At each side of this there are barrels, trees etc., which you must avoid. If you do happen to hit one of the obstacles, you will see pieces of the car fly into the air before you.

#### ● GRAPHICS AND SOUND

The interior of the car is well drawn with lots of instruments and a navigator holding a map. A real-time clock is on the dashboard and the driver (you) changes gear and turns the wheel quite smoothly. The scenery outside the car is poor – a sweeping panorama of either green or brown and a zebra crossing to drive along.

Sound is dreadful but then this is PC game, whaddaya expect? That bluebottle at the windscreen is supposed to be your engine in full flight.

#### ● OTHER VERSIONS

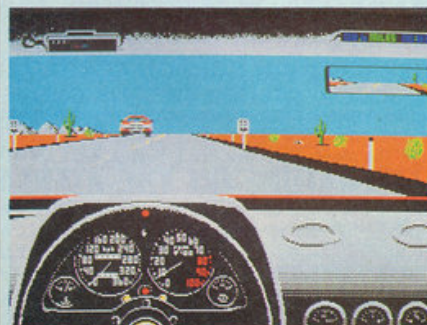
Also available for the ST and the Amiga.

#### ● EXPRESS VERDICT

Beats the hell out of driving rodded Moggy Minors, but as for true racing simulation there's about as much excitement in an episode of Top Gear.



Fielding 'Grand Prix' Mellish



● Not even worth a provisional license

Car crash!



**The  
incredible  
New  
Computer  
Express  
voucher  
scheme can  
save you over**

**£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 **May 21, 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 **May 21, 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 **May 21, 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 **May 21, 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.



# 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 £329.00**

520 STFM latest version with 1MEG drive fitted ..... £269.00

1040 STFM including TV modulator ..... £399.00

1040 STFM model as above, with 'Microsoft Write' & 'VIP Professional' ..... £419.00

1040 STFM model as above, including 21 games, business software and joystick as supplied with above '520 STFM Super Pack' ..... £419.00

1040 STFM as above with super pack extras, with 'MS-Write' & 'VIP Pro' ..... £459.00

Buy any 1040 STFM model with a monochrome monitor for only £110.00 extra

Mega ST1 with mono monitor, 'Microsoft Write' and 'VIP Professional' ..... £599.00

Mega ST2 with mono monitor, 'Microsoft Write' and 'VIP Professional' ..... £849.00

Mega ST4 with mono monitor, 'Microsoft Write' and 'VIP Professional' ..... £1099.00

'Super Pack' Software, as supplied with above 520STFM offer ..... £60.00

SLM804 laser printer, great value at ..... £1099.00

SM124/5 mono monitor ..... £119.00

Mega-File 30Mb hard disk ..... £539.00

Mega ST2 package - includes Mega ST2, mono monitor, external 1Mb 3.5" drive, SLM804 laser, 'MS-Write', 'VIP Pro.', 'Fleet St Publisher' and 90 days on site maintenance ..... £1795.00

Atari DTP system - (Mega ST4/MM/SLM804/30MB HD/S/WARE) ..... £2795.00

System AT40 40MB Hard Disk, super bargain value at only ..... £469.00

5.25" External drive 40/80 track 360/720K formatted capacity ..... £159.95

Pye 1185 15" FST Teletext TV/Monitor inc. full remote control and cable ..... £269.00

Philips CM8833 colour monitor c/w ST or Amiga cable ..... £229.00

Philips CM8852 as above, higher resolution ..... £299.00

## commodore hardware

### NEW SPECIAL OFFER AMIGA PACK

Specially priced Amiga 500 package including the following:

- \* Amiga 500 computer
- \* TV Modulator
- \* Mouse & Mouse mat
- \* Joystick
- \* Return of the Jedi
- \* Eliminator
- \* Zynaps
- \* Custodian
- \* Powerplay
- \* Helibent
- \* Bubble Ghost
- \* plus 5 disks of public domain s/ware

all for only  
**£399.00**

Amiga 500 computer including TV modulator ..... £359.00

Oceanic OC-118 64/128 disk drive for 64/128 with free GEOS software ..... £129.95

Freeze Machine complete backup cartridge, 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!

20MB...£209.00 32MB...£229.00 40MB...£289.00

## DISECTOR ST VS

for all Atari ST models  
only **£28.95**

New Version 5 disk utilities for the ST, features include: protected software backup, incorporating turbo nibbler, a very fast and powerful copier, which uses all available drives & memory and includes 80 parameter options for handling a greater range of software; drive B boot allowing many programs to startup from drive B; organiser accessory providing many major disk management commands; special formatters giving up to 25% extra user storage per 3.5" disk and accelerating access speed by up to 30%; fast backup version 2 copies standard disks speedily; ramdisk accessory; undelete file; PLUS much, much 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 £39.00 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	566.09 651.00	659.13 758.00	853.48 971.00	876.52 1000.00
COLOUR 1512	494.78 569.00	555.65 639.00	N/A	676.52 778.00	737.39 848.00	893.91 1000.00	914.78 1040.00
MONO 1640	474.78 546.00	555.65 639.00	738.26 849.00	656.52 755.00	737.39 848.00	873.91 975.00	894.78 1000.00
CGA (colour) 1640	561.74 669.00	651.30 749.00	825.22 949.00	763.48 878.00	833.04 958.00	980.87 1100.00	1000.00 1138.00
EGA (EGU) 1640	677.39 779.00	738.26 849.00	938.26 1079.00	859.13 988.00	920.00 1058.00	1076.52 1200.00	1097.39 1240.00
2086 MONO	569.57 655.00	662.61 785.00	912.17 1049.00	751.30 864.00	846.35 994.00	1068.70 1240.00	1081.74 1240.00
2086 CD	712.17 819.00	821.74 945.00	1051.30 1209.00	893.91 1028.00	1003.48 1154.00	1200.00 1380.00	1202.87 1380.00
2086 12" HRCD	794.78 914.00	912.17 1049.00	1120.87 1289.00	976.52 1123.00	1093.91 1258.00	1300.00 1440.00	1311.30 1480.00
2086 14" HRCD	886.09 1019.00	1007.83 1159.00	1233.91 1419.00	1067.83 1228.00	1189.57 1368.00	1380.00 1560.00	1400.00 1580.00

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	Enhancer 101 replacement keyboard .... £74.95
Maths Co-processor 8087-2 ..... £129.00	3.5" drive (720K) for SD models ..... £79.95
NEC V30 (8086 replacement) ..... £24.95	PC2000 series compatible 5.25" (360K) external drive ..... £100.00
Cipher CT1525 tape streamer ..... £319.00	Joystick & Controller Card self centering analog type ..... £34.95
Amstrad Modem Card V21/23 ..... £99.00	
Amstrad MC2400 Modem Card ..... £199.00	

## Amstrad PPCs

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

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

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 its 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

star

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 120 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  
Tel: 033294 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



# In the twilight domain

Dave Langford makes contact with software from the dead

You probably have a few pieces of ghost software lurking on your disks. These undead programs linger on with a strange and ghastly semblance of life; they flit and moan and haunt the conscience of their murderers. Or at least, they would be if big software entrepreneurs had consciences.

Well, I exaggerate, as usual. Ghost software is perfectly lively stuff, however much its erstwhile makers insist that it's dead. A good example is WordPerfect 4.2 as configured for the old Apricot computers. (As distinct from Apricot's current IBM clones; the 'real' Apricots were nice machines and ahead of their time, so were of course junked for being better than the then IBM 'standard'.)

There are plenty of Apricots around, elderly and slowish by 1989 expectations, but still hale and hearty. The best word processor ever issued for them was surely WordPerfect 4.2. But you can't buy the Apricot version any more. Indeed you would often be discouraged from buying it back then: the program had a bug on some models, and the UK importers would tell enquirers, incorrectly, 'No way will it ever run on an Apricot F series machine!'

(My own outfit had whipped up a memory-resident cure for the bug. In gratitude, a certain company which shall be nameless threatened us with a lawsuit because, when marketing this and other WordPerfect utilities, we wickedly mentioned the name WordPerfect. With grim determination to avoid making sales they also continued to tell enquirers that no way would WordPerfect ever run... etc. But I digress.)

WordPerfect Corporation offered a solid reason for pulling the plug on this particular version. The program might exist, and likewise the manuals (you only got the IBM manual with a couple of Apricot-specific bits of cardboard) but they couldn't cope with support. It wasn't economic. Once again my own dynamic company leapt into action! 'No trouble, squire. Just give permission to buy IBM WordPerfects at trade price, substitute copies of our master Apricot disks, and take over all responsibility for support.' WordPerfect Corp. found it uneconomic to reply.

So, along with many another package, that WordPerfect version is ghost software... in the twilight domain. Although we all know that making pirate copies is as wicked as genocide or parking on double yellow lines, it's hard to condemn anyone who resorts to a naughtily acquired program when it's one which the manufacturers and their dealers refuse point-blank to sell you. One day it'll be a lovely test case in some court. 'I desperately needed the program, I tried for months to buy it, but the makers refused and left me no alternative.'

Har har, you think, this only affects

unlucky users of machines which like the Apricot have fallen by the wayside. Actually it's a wider problem, because manufacturers are always positive that their newest program version is best for you, and with the firmness of an Edwina Currie will try their damndest to lumber you with this hyper-enhanced version containing 850% of the features you actually want.

Consider, for example, WordPerfect 5.0. As a writer I've been using 4.2 for some while, and know hordes of other devotees. IBM 4.2 has one serious bug (if you write plays or TV scripts with it using the 'parallel columns' feature, beware of giving anyone a speech longer than one full-page column) and some little roughnesses. But it's got a nice clean screen without poxy windows everywhere, is straightforward to use, and boasts all the features writers need.

When you try version 5.0, the added knobs, bells and whistles really begin to get in the way should you just want to, you know, write. The huge bloated program needs a disk change to load from 360K floppies. Format options invariably take more keystrokes than in 4.2. Affordable printers take second place to expensive laser gadgetry in the set-up menus (and if you want to configure an offbeat printer... forget it, the program for doing so isn't documented! They want a disgraceful extra twenty quid for that manual). The UK importers wittily summed it up by issuing helpful 'tech tips' describing in two columns of small print the endless keystrokes required for that most arcane of tasks - setting up WP 5.0 for A4 paper.

As a writer pal said, 'What WordPerfect thought was, we've got a good bicycle here and everyone agrees it's a good bicycle. So what we'll do is, we'll put thirteen more wheels on it.'

Meanwhile, one can feel the IBM WordPerfect 4.2 drifting towards the twilight domain. There's an ominous silence about whether it'll be supported or available after 1989. Maybe the users' enthusiasm will keep it alive or bring it back, as with Classic Coke...

More and more, big manufacturers want to sell huge batches of expensive programs to other big firms who've already been conned into buying PC networks forty times as powerful as actually required. More and more, they produce overmuscled software requiring 2Mb of added memory, a 385Mb hard disk, an ultra-high resolution screen, a nest of mice and a bar-code reader before you can word-process so much as a postcard. And the earlier program versions, the ones that ordinary people like us can run, fades slowly into that twilight state which to some looks temptingly like the public domain.

Personally I'm not half as worried about this as the big software houses ought to be.

## NEXT WEEK

### Word processing

Find the best machines, the best programs, and the best buys with the Express in-depth guide

### C Light

Another great new animation package for the Amiga

### A-Z Part 4

Dungeon Master, DEC, Domark, Disk, Database, Daisywheel, Dump, dBase, Dragon...

### Vital fax

How you can change your PC into a full fax machine

### Tech tips

Your computer problems solved

## PLUS

Another cocktail of letters, reviews, features, games, classified bargains... and the very latest in news and comment on the computer scene



On sale Thursday  
May 18th

ORDER  
YOURS  
NOW!

Only  
58p!



# Pick up an Atari 520STFM Super Pack for £279\*

We Accept EXPRESS VOUCHERS

## COMPUTER EXPRESS

### NORTH LONDON



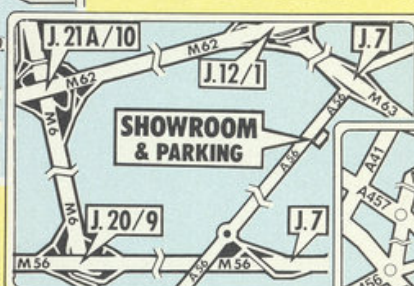
99 Park Street Lane,  
BRICKET WOOD,  
St Albans, Herts AL2 2JA.  
(0727) 72790

### WEST LONDON



304 Kingshill Ave,  
(off Uxbridge Road)  
HAYES, Middlesex.  
01-841 8744

### MANCHESTER



85 Washway Road (A56),  
(opposite IBM)  
SALE, MANCHESTER M33 1TQ.  
061-962 0780

### SHOWROOM OPENING HOURS:

Monday-Friday 9am-6pm

Saturday 10am-5pm

### BIRMINGHAM



1046 Coventry Road (A45),  
HAYMILLS, BIRMINGHAM B25 8DP  
021-772 5212

### ATARI 520STFM

with 1 Megabyte Drive and  
SUPER PACK of software.

worth over £450 worth at normal retail price.

including Organiser Business Software, Chopper X, Ranarama, Starquake, Genesis, Black Lamp, Thrust, Test Drive, Buggy Boy, Quadrailen, Xenon, Wizball, Seconds Out, Zynaps, Marble Madness, Beyonds Ice Place, Thundercats, Summer Olympiad, Arkanoids II, Eddie Edwards, Ikari Warriors.

**Spring Special Price ... £279.00**  
(£328.25 including VAT and next day delivery.)

(Offer only available to first 100 callers. This special offer is not available in conjunction with any other offer or vouchers.)

## Plus many more bargains....

### ATARI HARDWARE

Atari 520STFM Explorer Pack with 512K RAM, 1Mb Disk Drive, Mouse	£235.00
Atari 1040STFM 1Mb RAM, Disk Drive, Mouse	£399.00
Atari 1040STFM with SM124 Mono Monitor	£499.00
Atari 1040STFM with Philips 8833 Colour Monitor	£599.00
Atari Mega ST2 2Mb RAM, Mouse, Mono Monitor	£799.00
Atari SM124 12" High Res Mono Monitor	£119.00
Atari SC1224 12" Med Res Colour Monitor	£339.00
Cumana 1Mb Double sided 3.5" Disk Drive	£90.00
Philips 8833 Med Res Colour Monitor - Excellent Buy	£249.00
Supra Drive 30Mb External Hard Disk - Auto Boot!	£478.00
Atari SH205 20Mb External Hard Disk	£399.99
Atari SLM804 Laser Printer 8 pages/min 300dpi	£1045.00
Supra 2400 Modem V21/V22/V22bis	£159.00
Pace Linnet Modem V21/V23 with cables	£99.00

### ATARI STARTER KIT

Exclusive to Computer Express. Contains ST OWNER'S SECOND MANUAL, 5 DISKS OF PUBLIC DOMAIN SOFTWARE and DELUXE MOUSE MAT. £10.00

### STAR LC-10

For the money no other printer offers so much. 80 column multifont printer with 8 resident fonts and paper parking. 144cps draft and 36cps in NLQ quality. £175.00  
Colour version printing 7 colours. £219.00

### EPSON LX800

This latest offering from Epson zips along at 150cps in draft and 25cps in NLQ. Comes complete with Parallel Esc-P or IBM Parallel interface as standard, plus top mounted tractor feed. 80 column wide and good clear typeface. £159.00

### PANASONIC 1180

The NEW low cost successor to the popular Panasonic 1081. More features, more speed, more for your money. £159.99

### TIMEWORKS

The latest in low-cost DTP. An excellent package for anyone wanting to make a start in DTP for a very modest sum. Timeworks is very popular, and has good telephone support from the manufacturer. Atari version. £89.54

### COMMODORE AMIGA 500

with free Modulator. £319.00

### AMIGA HARDWARE

Amiga 500 with modulator and 10 Games	£355
Amiga Colour Monitor	£249
Amiga Mini Genlock	£99
Amiga 500 External Drive 3.5"	£90
Amiga 500 External 20Mb Hard Disk with SCSI	£499

### NEC P2200

At last a 24 pin printer you can afford, and with NEC's renowned reliability. This little baby cruises along at 168cps in high speed. 140cps in standard and a really nippy 56cps in Letter Quality mode. This printer should be on every discerning buyers list. £289.00  
Cut Sheet Feed for P2200. £65.00

Large Range of Popular Atari and Amiga Software Available.

\*All prices exclude VAT and delivery.  
All prices/specs subject to change

## We're there because you're there.

CALL FOR FULL PRICE LIST  
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

Computer Express Ltd., Caxton Centre, Porters Wood, St Albans, Herts AL3 6XT



**THE MOST EXCITING  
FILM OF THE YEAR  
NOW FOR AMIGA & ATARI ST**

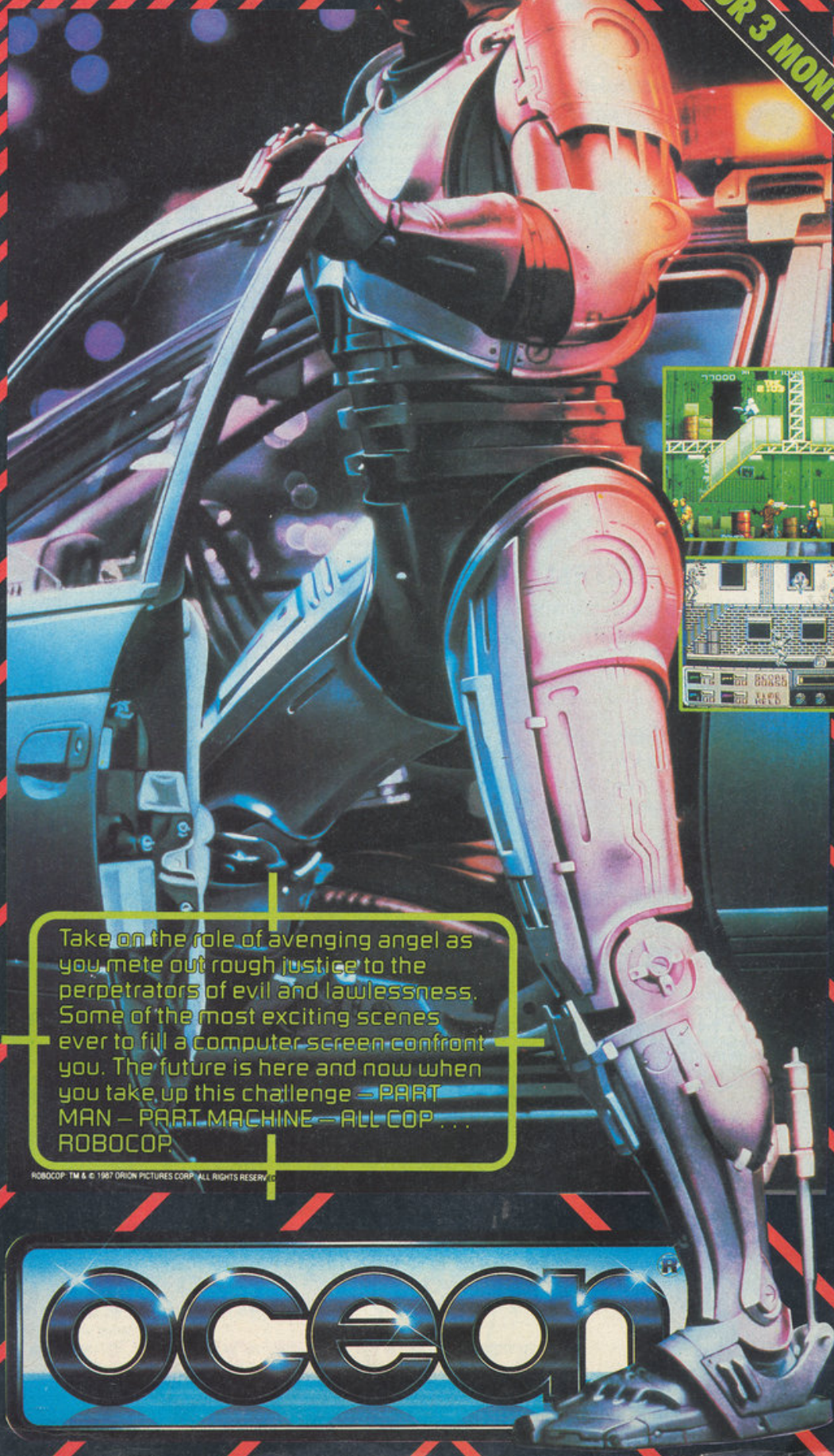


"This is definitely  
the best film tie-in  
to date and is an  
utterly superb game in  
its own right - don't miss it."

**NO.1 FOR 3 MONTHS!**

# ROBOCOP™

THE FUTURE OF LAW ENFORCEMENT



Take on the role of avenging angel as you mete out rough justice to the perpetrators of evil and lawlessness. Some of the most exciting scenes ever to fill a computer screen confront you. The future is here and now when you take up this challenge - PART MAN - PART MACHINE - ALL COP... ROBOCOP.

ROBOCOP: TM & © 1987 ORION PICTURES CORP. ALL RIGHTS RESERVED.

AMIGA  
**£24.99**

ATARI ST  
**£19.99**

# ocean