ATARI ST USER

May 1993
Issue 87
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Britain's best for ST • STE • TT • Falcon

BUILD UP YOUR ST

Improve your speed, memory and graphics

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COMPLETE PACKAGE

- Hard disk management
- Getting to grips with your ST
- Piracy - the effects
- Reviews: Midi Studio Master, Stylus 800 printer, Calamus S

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Ladbroke Computing International are one of the longest established home computer dealers in the U.K. We have developed an extensive customer service policy which involves testing of all hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup.

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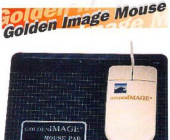
Golden Image Mouse



- Amiga Format Gold Award winner with 90%
- Switchable ST/Amiga
- High 290 Dots per inch resolution
- 2 Microswitched buttons for crisper response and higher reliability
- Opto/Mechanical Mechanism incorporating an anti-static silicone rubber coated ball.
- Mouse Mat included
- Ergonomic design

Golden Image Mouse £14.99

STACY Batteries

- Complete re-chargeable battery upgrade kit for STACY
- Weighs 2.2 pounds
- Slow charge in 14 hours
- Fast charge in under 4 Hours (with optional fast charger)
- Fits into STACY's battery compartment and is charged by the STACY's power supply

STACY Battery Upgrade £49.99
Fitting Service £10.00

Hand Scanners

- 100, 200, 300, 400 dpi resolutions
- 1 letter mode, 3 photo modes
- 105mm scanning head
- Includes the excellent **MIGRAPH TOUCH UP 1.8.** This is the full package with manual
- Includes **DELUXE PAINT ST**, full package with animation and manual. One of the best available art packages for the ST
- **MIGRAPH's OCR** Package available as an upgrade to all Golden Image Scanner owners.

Golden Image Scanner £119.99

Scanlite

- For those times when all you want to do is quickly scan an image and not bother with a larger editing program
- Supports GOLDEN IMAGE, Migraph, Geniscan and Daatascan Hand Scanners
- Works in low, medium, high and BigScreen resolutions
- Instantly accessible from within programmes supporting accessories
- Scans directly into Silhouette and Megapaint II

Scanlite Accessory £20.00

Migraph OCR

We can now offer a TOUCH UP 1.8 Upgrade along with Migraph's OCR (Optical Character Recognition) Software to all owners of the Golden Image Hand Scanner for the ST. Requires at least 2Mb RAM and a hard disk.

Migraph OCR Upgrade £79.99

JIN Mouse

- Switchable ST/Amiga
- High 290 dots per inch resolution
- Opto/Mechanical Mechanism incorporating an anti-static silicone rubber coated ball
- Ergonomic design

JIN Mouse £7.99
Ladbroke's Mouse Mat £2.98

Silhouette

- Autotraces bit image graphics to resolution independant vector graphics
- Produces Beziers, B-Splines, High resolution grey scales
- Supplied with FontGDOS
- Supports FSM GDOS
- Imports IMG, DEGAS, TINY, MacPaint, GEM, SGF Bit image files
- Exports IMG, GEM (1.3), SGF, DXF, EPS (Postscript) files
- Supports direct scanning via Scanlite accessory Requires 1Mb ST, Hi-res monitor

Silhouette £60.00
Calamus Vector Graphics (CVG) support coming soon
Calamus V1.09N £124.99
That's Write 2 £109.99
1st WordPlus £39.99
Timeworks 2 DTP £39.99
Signa's Scipt WP £79.99

GI Optical Mouse

- Switchable ST/Amiga
- High 250 dots per inch resolution
- Microswitched buttons for crisper response and higher reliability
- Fully optical mechanism with no moving parts for higher reliability
- Optical Mouse Mat included
- Very light, ergonomic design

GI Optical Mouse £24.99

Monitors

Atari SC1435 £POA

The SC1435 comes complete with cable and tilt/swivel stand

Atari SM146 Mono mon £POA
Philips 8833 MkII £229.99

- SCART input TV
- 39 channel remote control
- Flat Screen

Philips 15" Cube Teletext £259.99

- SCART input TV
- 60 channel remote control
- Fastext teletext
- Flat Screen
- 3 Speaker sound

Philips SCART to ST/STE £9.99
8833 Mk II dustcover £7.99

GI Brush Mouse

"The Natural way to draw"

- 150 dpi resolution
- Opto/Mechanical mechanism
- 500mm/SEC tracking speed
- Switchable between ST/Amiga
- Direct Mouse replacement
- Includes the exceptional **DELUXE PAINT ST** art package with full manual

GI Brush + Dpaint ST £24.99
GI Brush Mouse £19.99

STE Packs

- Includes Mouse and built in modulator to connect to TV.
- 4 Great games: 9 lives, Escape from the planet of the robot monsters, Final fight, Sim City.
- 1st Word wordprocessor, Neochrome Art & Ani ST

520 STE £219
1Mb STE £229
2Mb STE £275
4Mb STE £329
1040 STE CURRICULUM 2 £289

Falcon 030

- 16MHz 32 bit 68030 Central Processor, 16MHz blitter
- 32MHz 56001 Digital Signal Processor
- 1.44Mb 3.5" Floppy up to 14Mb RAM
- Displays 65536 colours from 262144 palette at 768 x 480 resolution
- 8 Channel 16 bit, higher than CD quality stereo sound sampling
- Multi TOS MultiTasking Operating System

FALCON 1Mb No HD £589.00
FALCON 4Mb 65Mb HD £979.00

Floppy Drives

- 720K formatted capacity
- Double sided, double density
- Daisy chain through port for compatibility with older ST(M) machines
- External Power Supply
- Attractive case design

GI External drive £54.99
ST Internal drive £44.99

Data Pulse Plus

Hard Drives

- All Data-Pulse Plus Hard Drives are formatted, partitioned and tested before despatch, ready to "plug in and go"
- Fully Autobooting and Autoparking
- DMA device selector & on/off switch on front of case for ease of access
- DMA Out port for daisy chaining extra drives or Atari Laser printers
- Full metal case measuring 300mm x 285mm x 51mm (wdh), providing good shielding and monitor stand
- We use only high quality ICD controller boards including on-board clock and software
- Only Highest Quality Quantum or Maxtor mechanisms used
- All drives come with full 12 months warranty and free expert help and advice over the phone
- All drives include Vault archiver, Backup software, Virus killer, MCP shell program, Midistudio Master demo

Data-Pulse + 42Mb	**£319.99**
Data-Pulse + 85Mb	**£379.99**
Data-Pulse + 127Mb	**£429.99**
Data-Pulse + 170Mb	**£499.99**
Data-Pulse + 213Mb	**£579.99**

Diamond Back II

- Extremely Fast backup to floppy or hard drive with optional compression and encryption
- On Line help facility makes it very easy to use
- Load/Save Custom backup configurations
- Incremental backups by date/ time or Archive bit (TOS 1.4)

Diamond Back II **£34.99**

ICD's LINK

- Adapts the ST's DMA port to a 50 way SCSI Connector
- Allows connector direct to SCSI hardware including Hard drive Mechanisms, Floptical Mechanisms, Optical Drives, CD ROM's

ICD LINK **£69.99**

HD Turbokit

- De-Fragmentation Utility optimises the speed of your hard drive by moving all data blocks into contiguous data areas

HD Turbokit **£4.99**

Floptical Drives

- Capable of storing over 20Mb of uncompressed data on a single 3.5" Floptical disk
- Can read and write 720K and 1.44Mb 3.5" Floppy disks
- Average access time 65ms
- Data transfer rate of 200K per sec (6 times faster than Floppy disk)
- 3.5" SCSI mechanism
- Utilises only high quality ICD host adaptors
- High quality Case and PSU as used in all Data-Pulse Plus Hard Drives (see opposite for details)
- Available as a stand alone unit, an upgrade to existing Data-Pulse (Plus) drives or as a combination unit with Hard drive mechanisms from 42Mb to 213Mb
- Ideal for fast data backup from hard drive
- Low cost removable media

21Mb Floptical Drive	**£399.99**
Datapulse upgrade	**£299.99**
42Mb HD+21Mb Floptical	**£509.99**
85Mb HD+21Mb Floptical	**£669.99**
127Mb HD+21Mb Floptical	**£719.99**
170Mb HD+21Mb Floptical	**£789.99**
213Mb HD+21Mb Floptical	**£869.99**

All the Above drives include one 21Mb 3.5" Floptical Disk

21Mb 3.5" Floptical Disk	**£24.99**
5 x 21Mb Floptical Disks	**£114.95**
10 x 21Mb Floptical Disks	**£199.99**

Aries Upgrades

- Will fit any ST(F)(M) or Mega ST
- Extremely compact in house designed Multi-layer circuit board smaller than a credit card
- Upgradeable in stages for the base 512K to 2Mb then 4Mb
- Solder in design for greater reliability
- Fully tested prior to despatch
- All Aries RAM upgrade boards come packaged in a 10 capacity disk box, complete with full fitting instructions and memory test software.

512K Board	**£39.99**
2Mb Board	**£79.99**
4Mb Board	**£129.99**
512K SIMM's STE	**£9.99**
2Mb SIMM's STE	**£49.99**
4Mb SIMM's	**£94.99**
2 x SIPP to SIMM adaptors	**£3.00**

Image CAT

- Catalogue all image files on your hard disk. Prints tiled display with path names

Image CAT **£24.99**

ST Networks

Datanet Network Hardware

- Cartridge based high speed network solution
- Compatible with ST (F)(M), Mega ST, STE, Mega STE

Powernet Network Software

- MultiTasking Network software allows applications to run on the server while drive and printer accesses take place in the background
- Allows the mixing of Network types. ie DataNet, LanNet and MidiNet devices
- Full Falcon compatibility using LanNet device

DataNet with PowerNet	**£99.99**
LanNet with PowerNet	**£89.99**
MidiNet with PowerNet	**£59.99**

Prices quoted are for 1 Node. Each computer attached to a Network requires 1 Node. A LanNet device is required to Utilise the Lan Port on a Mega STE, TT or Falcon.

Printers

Star

Star LC100 Colour	**£165.00**
Star LC20	**£124.00**
Star LC24/100	**£179.00**

All Star Dot Matrix printers include 12 months warranty.

Starjet SJ48 Bubblejet	**£210.00**

Citizen

Citizen Swift 240 Colour	**£270.00**

Hewlett Packard

HP Deskjet 500	**£339.00**
HP Deskjet 550 Color	**£580.00**

Lasers

Seikosha OP104	**£549.00**

- 512K RAM (Exp to 2.5Mb)
- HP Laserjet IIP emulation
- 14 resident fonts
- Centronics/RS232C/RS422
- 12 months on-site warranty

Seikosha 512k RAM upgrade	**£69.00**
Ricoh LP1200	**£759.00**

- Fully HP III compatible
- 400Dpi resolution
- 2Mb RAM on board
- Serial & Parallel ports
- 12 months on-site warranty

Add £3 for Centronics cable and £7 for next working day courier delivery.

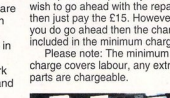
Repair Services

Our Service department can repair ST's in minimum time at competitive rates. We can arrange for fully insured, courier pickup and return delivery of your machine to ensure it's safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day.

We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc.

We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair. If you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge.

Please note: The minimum charge covers labour, any extra parts are chargeable.



Quotation	**£15.00**
Minimum repair charge	**£35.25**
Same day service	**£15.00**
STFM(E) PSU	**£39.99**
1Mb internal drive	**£44.99**
A/B Boot switch	**£4.99**
TOS 2.06 + Switch STFM	**£65.00**
TOS 2.06 + Switch STE	**£65.00**
Courier Pickup	**£11.00**
Courier Return	**£7.00**

Phone for price and availability of ST spares

PC Emulators

- Run PC Software on your ST
- Full installation instructions
- XT or AT Emulation

PC Speed STFM (XT)	**£54.99**
PC Speed STE (XT)	**£54.99**
AT Speed STFM (8MHz)	**£129.00**
AT Speed STE (8MHz)	**£139.00**
AT Speed C16 STFM	**£189.00**
AT Speed C16 STE	**£199.00**

Cadbroke Computing

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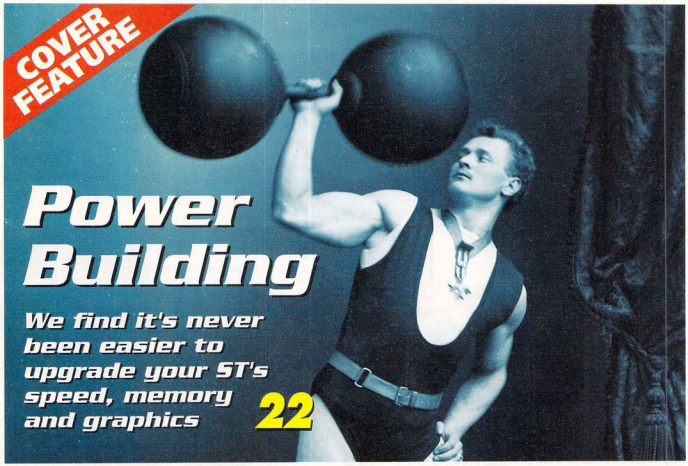

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Free this month is Personal Finance Manager, a complete financial program from Microdeal to help you get your home accounts in order

PLUS:

- **Save valuable disk space with STZip v2.2, an archiving utility used every month to produce Atari ST User's CoverDisk**
- **Scribe, a fast and easy-to-use text editor crammed with features**
- **IBS Pegasus – Explore space and battle with aliens in this exciting strategy sci-fi game**
- **Repair and examine files stored on your disks with ST Tools, an invaluable disk utility**
- **View ST/TT is picture viewer which supports 12 formats including GIF, TGA and even Amiga pictures**
- **A collection of samples for use with Stereo Master, given away on last month's disk**

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READER OFFERS

PFM 17

Manuals to help you get the most from this home accounting program and PFM Plus upgrades, both at unbeatable prices

Stereo Master/HiSoft C ..94

Complete the two full-price programs that we gave away on last month's CoverDisk with massive savings

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GOLDENIMAGE ALFA DATA ICD POWER ATARI

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ST BOOK 1Mb 40Mb H/D.....£1275.00

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STE Mother Board No RAM.....£149.00
DMA Chip.....POA
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1/2Mb STFM Mother Board.....£149.00
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SVGA Monitor for Falcon.....£239.00
Atari SC1435.....£199.00
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HP 500 .....£309.00
HP 500 Colour.....£439.00
HP 550 Colour.....£550.00

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ST/STE (COMING SOON).....POA
Marpet XRAM Deluxe Simms Upgrade
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4Mb.....£109.00

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Floptical 20Mb Disks.....£24.00
Optional Clock for above.....£15.00

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* DMA Cable.....£6.00
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* ICD Host Adaptor £69.00
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ACCESSORIES

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Multisync Switch Box.....£29.95
Printer Cable.....£6.00
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Null Cable.....£6.00
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Scart Cable.....£10.00
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Ad Speed STE £165.00
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MICE + TRACKBALL

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Mega Mouse.....£10.95
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Optical Mouse.....£23.95
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New Golden Image
400 DPI Mark 2 Mouse.....£14.95

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Calligrapher Gold £109.00
That's Write V1.4 .....£19.00
DTP Software
Pagestream V2.2.....£149.00
Timeworks Publishing 2 .....£80.00
Calamus V1.9 .....£129.00
Calamus SL £339.00
OCR Software.....£165.00
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Cyber Control.....£25.00
Cyber Paint £25.00
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Future Design Disk.....£10.00
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Thats Fun Face £18.00
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C-Lab Creator £179.00
Cubeat £150.00
Cubase £279.00
Cubase Light.....£150.00

REPAIR SERVICE

New service centre/repair for most Atari computers. We offer a quotation service of £10 for which we will examine your computer and report back with an exact quotation price for the repair. If the repair is carried out the £10 is then deducted from your bill.

PLEASE PHONE IN FOR REPAIRS ON ST

DELIVERY CHARGES:
Small consumables & software items.
Other items, except lasers.
Offshore and Highlands.
IN ADDITION WE OFFER THE FOLLOWING EXPRESS SERVICES
Saturday deliveries
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UK MAINLAND (not Highlands)
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Next day courier service, £10 per box.
Please enquire
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Normal rate plus £8 + VAT per box

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Industry support returns for Atari

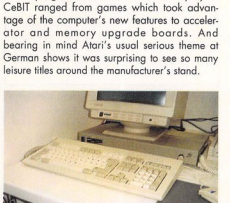
EXCLUSIVE John Butters reports from Hanover

THERE was overwhelming industry support for Atari from across the world at this year's CeBIT technology show, where developers showed scores of Falcon-specific products.

It was the biggest sign yet that the recent decline in the Atari market could now be over, with many firms now looking forward to the Falcon's success.

And *Atari ST User* can exclusively reveal that more than 80 products are either available now or are being developed, including Apple Macintosh and 486SX emulators .

The programs and hardware on display at CeBIT ranged from games which took advantage of the computer's new features to accelerator and memory upgrade boards. And bearing in mind Atari's usual serious theme at German shows it was surprising to see so many leisure titles around the manufacturer's stand.



Case: Alternative with separate keyboard

Among those shown were Vroom II, an improved version of Lankhor's racing car simulation which now features up to four players on-screen at the same time.

Britain's Imagitec had been working on Humans and a Falcon version of Dinolympics, and Eclipse had a space shoot-'em-up which uses true colour, texture mapping and plays in real-time.

The German software house also previewed a new true colour paint program which uses an interface similar to Neochrome's and will be aimed at games programmers.

French games house Silmarils have already released two Falcon titles – Transarctica and role-playing adventure Ishar – and at CeBIT they showed work on Ishar II is also well under way.

From the same country but aimed at serious use was Eurosoft's Photo Studio. A 24-bit retouching program, it has been designed specifically for the machine's true colour modes.

Still under development from the firm is Home Video Kit. It will be supplied with a true colour digitiser, a genlock, titling program and retouching software.

And while many potential Falcon buyers are waiting for Atari's new casing later this year, a German company have designed their own alternative.

The Digital Data Deicke version includes a separate keyboard, a box to cover the original Falcon case and software. It features a lock and a hard disk write-protect switch.

For users requiring extra speed and memory, developer GE-Soft demonstrated an accelerator board. It uses a 68030 processor operating at 32MHz – double that of the original.

It can be fitted with up to 128Mb of memory, using a combination of 1, 4 and 16Mb SIMMs. Unpopulated it will cost about DM1,500 (£610).

Other products included a range of titles from HiSoft and Compo Software, document processors, databases, direct-to-disk recording programs and a video digitiser.

CeBIT: Big hand for Atari

STFM reintroduced at aggressive £159

IN a surprise move Atari have restarted production of the 520STFM and are set to sell the computers in Britain at an aggressive £159 price point.

The machine's return is aimed at attacking the Commodore 64 and games console market, as well as trying to attract customers to the ailing independent stores.

They will go on sale at independent computer stores and possibly some High Street chains within the next few weeks, and Atari hope they will lift ST sales this year to 150,000.

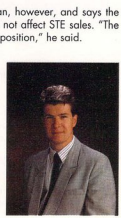
Four games will be packed with the machine, although the exact titles have yet to be finalised, and Atari hope that increased demand in the ST market will lead to higher software sales.

"It will appeal to parents, the independents, it will help software sales and will, we hope, take some console and Commodore 64 sales," said Atari's marketing manager Darryl Still.

And speculators are now predicting that Atari will slash the cost of 1040STEs to around £199 later this year, as the price gap between a half and one megabyte machine has jumped to £149.

Still denies the plan, however, and says the new STFM price will not affect STE sales. "The STE is a different proposition," he said.

"I think we will sell to people who are clearer about the future direction they want to take in computing. They will buy the machine and then probably start out on upgrade paths."



Still: STFM to attack the C64 and consoles

Board makes Falcons faster

ONLY weeks after the British release of Falcons to enthusiasts London-based Gasteiner Technologies (081-365 1151) have introduced an accelerator board for the computer.

Operating at 32MHz, it is claimed to offer a speed increase of about 75 per cent and can take up to 32Mb of SIMM memory.

A VME bus is included for further expansions such as graphics cards and the firm says the board is easy to install. Without memory the board costs £599.

EC may force disk prices up

BUDGET software prices could rise if a European Commission plan to slap a levy of up to 30 per cent on the cost of imported disks goes ahead.

The move follows an appeal to the EC by Diskma, a body representing European disk manufacturers, who are concerned by the number of cheap Far Eastern imports.

According to trade newspaper *CTW*, the Commission has already reviewed the situation twice, but before it can be implemented needs the support of each member country.

Some sections of the industry are now campaigning to split the support, and communication has begun with the UK's representative Sir Leon Brittan.

One industry figure told *Atari ST User* that the question of retail price rises depends entirely on how much is added to disk costs.

He said that if it was only a small increase then most companies could probably absorb the cost. A high levy would make it necessary to pass rises on to the public.

Disks: EC price rise threat

Features boost for Superbase

FOR release later this year by HiSoft (0525 718181) is Sbase 4, the new Superbase with all-round extras and improvements over earlier versions of the database.

Among the line up of changes will be an easier to use form editor, the ability to use mono and colour graphics and perhaps even video support.

Developed by US-based Oxxi, Sbase 4 will be faster than its predecessors and a GEM interface will be used for the first time.

It will be compatible with all STs fitted with 1Mb or more of memory, and the Falcon. The Price remains to be fixed but it seems likely to cost between £149 and £179.

Also due for the Falcon is True Image. To be launched in May, it is an image processor with a low-end price point and is claimed to be ideal for use with Photo CD.

And just weeks after the UK release of Gribniff's Arabesque and Convector by Compo Software, distribution of the products has been passed on to the Bedford-based firm.

Prices remain the same, with painting and vector drawing program Arabesque selling for £129 and auto-trace software Convector costing £99.

Epson go dotty over inkjet

DOT matrix printer users looking for near laser quality printing at an affordable price are targeted for Epson's new inkjet model, Stylus 800.

With a £379 price tag, it features the manufacturer's new Piezo Multi-layer Actuator Head printing technology to achieve a resolution of 360 x 360 dots per inch.

Four scalable fonts and 15 bitmapped fonts are included and with a 32k buffer it can print at up to 150 characters per second.

An indicator advises users when the ink cartridge is running low, there is a 100-sheet A4 paper feeder and the machine accepts manual feeding of envelopes and single sheets.

"The excellent print quality and speed offered by the Stylus 800 has created a high-level of interest," said Epson's sales and marketing boss Peter Turner.

"Initial reactions to the printer indicate that Epson can expect to become a major supplier of high performance low-cost inkjet printers."

CompuServe cut connect costs

WITH the introduction of a slightly higher monthly subscription fee, on-line information service CompuServe have slashed connect time charges by more than a third.

The move affects members using the firm's Standard Pricing Plan, who can have unlimited access to 36 services such as news, travel, investment and games for $8.95 per month.

When using some other services, members pay an $8 hourly charge for access at 1,200 or 2,400 bits per second. 9,600bps access costs $16 per hour.

Previously, there was a monthly fee of $7.95 and hourly charges of $12.80 and $22.80 for access at 1,200/2,400 and 9,600bps respectively.

"In essence we have made accessing all of CompuServe's many services much more affordable," said CompuServe's executive vice president Barry F Berkov.

"A year ago we introduced the Standard Pricing Plan in response to our members' growing desire for flat-rate pricing.

"These changes let members save money when using services not covered under the flat rate, such as the forums."

The American communications giant have also axed surcharges for members accessing the service through all CompuServe nodes in Europe during non-prime hours.

Stylus: Low-cost inkjet from Epson

Industry fights violence claims

THE computer games industry has hit back against new national media claims about the effects some leisure software has on its players.

Reports made in a World in Action documentary – Welcome to the Danger Zone – claimed that video games could cause kids to develop anti-social or violent tendencies.

The claims were picked up by several newspapers, and strengthened by criticism of video games from teachers, unions and parent groups.

But computer trade body ELSPA took an exceptionally dim view of an article published in The Daily Star, reacting with a complaint to the Press Complaints Commission. Headlined "Breeding a nation of monsters", the story linked a violent society with the popularity of video games and ran alongside a picture of a murdered toddler's grieving relatives.

ELSPA described the report as "utterly unacceptable journalism". They are now planning a campaign to help local education authorities and teachers understand the issue.

Daily Star: ELSPA complains over report

Switchsoft share Paintpot graphics

A GRAPHICS creation package which used to sell for £14.95 has just been released to public domain libraries as a shareware program.

Paintpot takes advantage of the STE's extended colour palette and works in all resolutions. It supports IMG, Degas and NEO formats and GEM fonts can be used.

It is available from many public domain outlets, but in case of difficulty developer Switchsoft can be telephoned on 0325 482454.

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News flashes

Board raided

A US bulletin board alleged to be carrying illegally copied software and sexually offensive text and graphics has been raided by the FBI.

Computers, hard drives, communications equipment and membership records were seized from the Rusty and Edie system.

Ticket blunder

ALL Formats Computer Fairs say that the London Fair due on Saturday April 24 will be held at the Novotel, Hammersmith. Thousands of advance tickets and 1.5 million vouchers list the venue as Sandown Park.

Sleepwalker goes top

COMIC Relief game Sleepwalker has gone straight to number one in the latest software sales chart, and Ocean Software say they are well on the way to raising £500,000 for the charity.

Midi help

BUDDING musicians are now offered help setting up a working Midi system in a new book just published by PC Publishing.

Written by Vic Lennard, *Midi Survival Guide* is claimed to offer a hands-on non-mathematical approach to make it ideal for anyone starting up with Midi. Price, £6.95.

Emulation improves

GEMULATOR, the ST emulator for PC compatibles, has been improved by developer Branch Always Software to give it several new features.

They include the ability to create a virtual Atari hard disk partition on any size DOS partition and emulation of up to one megabyte of ST RAM.

European distributor is Atari ST Nieuws in the Netherlands. They can be telephoned on 010 31 2 351100.

Unique mats

SPLAT! is the name of the latest range of mouse mats from BBD Dust Covers (0257 425839). Using red, blue, yellow and black colours, the firm says no two mats are the same.

Pocket production

MUSIC giant Yamaha have just unveiled their QY20 Music Sequencer. The pocket-sized music production unit claimed to be "a unique and versatile composition and practice tool for musicians on the move".

Computer crime cure

PROTECTING computers from theft, copying of confidential information and malicious input such as viruses is the aim of HF Computer Lock, a new device from Sweden.

It consists of two plates which can be inserted into the floppy disk drive and secured with a padlock. A wire can be attached to secure the machine to a fixed object.

Depending on the level of protection needed, the lock costs between £60 and £85. The British distributor is Scandum Instruments (0454 418850)

Lock: Securing against crime

More battles go on-line

THE company behind several multi-user modem games, On-line Entertainment (081-558 6114) have just added battle simulation Napoleonics to their system.

Waterloo, Borodino and Austerlitz battles feature 3D graphics and each subordinate commander and captain has built-in artificial intelligence.

DIARY DATES

17 April 1993
All Formats Computer Fair
Organiser: Bruce Everiss
(0608 663820)
Venue: Jesse Boot Centre, Nottingham University

18 April 1993
Venue: National Motorcycle Museum, J6 M42

24 April 1993
Venue: Novotel, Hammersmith

25 April 1993
Venue: Brunel Centre, Bristol
Bargains to be found on all types of hardware and software.

23 to 25 April 1993
Midi Music Show
Organiser: Westminster Exhibitions (081-549 3444)
Venue: Wembley Exhibition Centre
Catch up with the latest Midi products.

16 to 20 September 1993
Live '93
Organiser: News International (071-782 6000)
Venue: Olympia, London
A public consumer electronics show.

19 to 21 November 1993
International Computer Show
Organiser: Westminster Exhibitions (081-549 3444)
Venue: Wembley, London
Discounted software and hardware and product releases.

● If your company is organising a show relevant to the ST and it's not listed, let us know so we can include the information in the diary.

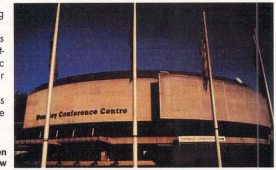
Show date moves

SHOW organiser Westminster Exhibitions say exhibitor and consumer demand means they have re-timed the year's second International Computer Show to November 19 to 21. The move follows several years when the firm held the year's second event during the summer.

"We have decided to go for a November show for the first time as a result of considerable pressure from our exhibitors," explained Westminster's marketing director Julie Collins.

"Their overwhelming response has been that our show provides the greatest opportunities and most enthusiastic audience of any exhibition in their calendar.

"Our first pre-Christmas show aims to maximise and take full advantage of this."



Wembley: Chosen for November show

DO YOU KNOW SOMETHING WE DON'T?

Although *Atari ST User* has scores of contacts in the ST world we need you. If you have some hot news ring John Butters on the news desk now on 0625 878888 or fax to 0625 879966. All sources will be treated in the strictest of confidence.

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- 12 Month Repair Warranty
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SAVING: £70.01
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- Epson and IBM Emulation
- Paper Parking Standard
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- 12 Month Repair Warranty
- FREE Silica Printer Starter Kit

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SILICA PRICE: £229.00

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SILICA PRICE: £499

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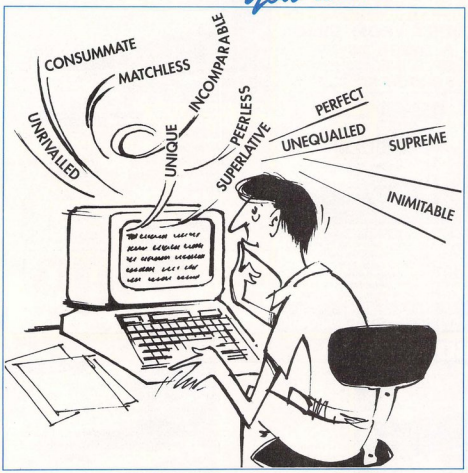

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Falcons dominate show

Falcons, Falcons everywhere! That was the scene at this year's gigantic Frankfurt Music Fair, and Ian Waugh was there to gaze at the goodies...

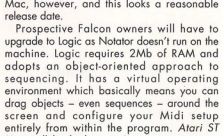
One popular application at this year's Frankfurt Music Fair was direct-to-disc recording using the Falcon's built-in facilities. D2D have already developed a system which was shown at the Dusseldorf launch of the Falcon last year.

At Frankfurt Steinberg (from Harman on 0753 576911) showed Cubase Audio which combines the top-end Cubase sequencer with four tracks of digital audio. No additional hardware is required. The system will also run on an ST with the Yamaha CBX-D5 hard disc recording unit.

Also on the Steinberg stand was Cubase Score, essentially Cubase with the addition of sophisticated score and notation facilities.

Emagic (née C-Lab from Sound Technology on 0462 480000) had Notator Logic for the ST/Falcon which has been promised for release in April/May (although the company originally said it would be ready in September last year!). It's already available for the Apple Mac, however, and this looks a reasonable release date.

Prospective Falcon owners will have to upgrade to Logic as Notator doesn't run on the machine. Logic requires 2Mb of RAM and adopts an object-oriented approach to sequencing. It has a virtual operating environment which basically means you can drag objects – even sequences – around the screen and configure your Midi setup entirely from within the program. *Atari ST User* will be looking at Logic as soon as it arrives. Emagic were showing Notator Logic Audio, a d-t-d system for the Mac. Although they wouldn't be drawn, it's possible that a version for the Falcon will appear sometime in the future. New for the ST/Falcon is Sound Surfer, a powerful and sophisticated-looking universal sound editor.



Geerdes StarTrack Delight, an object-oriented sequencer

Several European companies were also showing Falcon d-t-d systems. SoundPool (010 37 303317091) have Audio Master featuring real-time processing such as compression, equalisation, reverb, delay and chorus. A basic version will cost around DM400 (about £175).

Tradeit (010 37 61549037) also had a desktop sound processing system called DigiTape which looked very easy to use. A basic version costs DM199 (£90) with a studio version due later. We'll have to see if any UK distributor picks up on these systems. It's still early days for the Falcon.

EMC (from AMG on 073088 383) have a very large range of ST editors/librarians with additions seemingly being made every month. They are generally very easy to use and cheap!

Geerdes (from Newtronic on 081-691 1087) continue to update their StarTrack sequencer which is now known as StarTrack Delight version 2.0. This features object-oriented control and a graphic environment which is an approach more than one developer is taking. Geerdes also have an amazing number of Midi song files.

DVPI (also from Newtronic) had a couple of interesting programs on show. Session Partner II (£TBA) is a sophisticated auto accompaniment generator while Music Mandala (£29) generates New Age music. There'll be more about these in *Atari ST User* soon.

An Italian company called Intersound & Soft have been showing a range of sample editors at Frankfurt for the past few years. Widely distributed through Europe, they have never had a UK distributor. Until now.

Akai have taken the programs on-board and given them a name change. The Sample Tool range will include the S1000W – a Waveform Manager (£149), the S1000P – a Parameter Manager (£199) and the S1000L – A Library manager (£399).

One of the interesting things about foreign exhibitions is that you get to see software which may never makes it to our shores, items such as Monolith's (010 37 89750057) Machina Musica which looked a very serious piece of sequencing and scorewriting kit – all the more impressive on a large-screen monitor.

Soft Arts (010 49 306843737) were showing several programs including Score Perfect Professional, another heavy-duty scoring and notation program which can save scores in Standard Midi File format and export them for use in DTP programs.

There were also three sequencers in the Live range. Live Basic is a 16-track sequencer with a drum edit page. Live can store 32 songs in memory at once and features a mixer and a style page.

Live+ is for the Falcon and offers multitasking with the possibility in the future of adding hard disc recording.

However, the recession has had its effect on the music industry and a few familiar faces were missing from the usual Frankfurt line-up.

There was also a range of GM portable keyboards from Goldstar, a company better known in the computer market. A UK distributor is currently being organised. Our March issue contained a feature on General Midi.

In spite of the continuing slump, the music industry is still working hard developing new instruments and software. If development proceeds at its current pace this could well be the year of the Falcon.

Hardware heaven

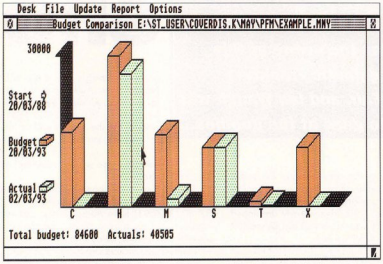
On the hardware front, there were the usual launch of new synths and keyboards but one trend of particular interest to the computer musician was the increase in the number of GM (General Midi) instruments and modules. Roland (0252 816181) were displaying new Sound Canvas variants including the SC-7 (£249) and SC-33 (£399).

Yamaha (0908 366700) launched a redesigned version of the TG100 sound module which is likely to be bundled with music software under the title of Hello! Music! (yes, they do spell it with two exclamation marks).

Korg (081-427 5377) revealed the Audio Gallery (£399) GM module and Kawai (0202 296629) had the GMega GM (£499) module plus some GM portable keyboards from £349 to £439.

COVERdisk

Over two megabytes'-worth of programs are packed onto this month's CoverDisk including the unrestricted and complete Personal Finance Manager home accounts package and IBS Pegasus, a game of space exploration and combat



Built-in graphical analysis charts allow for instant examination on the status of your accounts

Personal Finance Manager

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PFM uses a GEM interface so all functions are instantly accessible at the click of a mouse button.

Just enter your account details and transactions – PFM will take care of all the calculations and enable you to graphically display your accounts status using pie charts and 3D histograms. PFM is a sophisticated piece of software and we are offering *Atari ST User* readers the complete manual at a special discounted price.

A basic guide to using PFM appears on page 17.

Programmed by: P G Veal
Configuration: All STs - med or hi-res
Filenames: X_PFM.TOS - Self-extracting archive

PFM at a glance

- *Easy to use GEM interface*
- *Entries automatically placed in date order*
- *Selectable date formats*
- *Automatic standing orders*
- *Auto-balancing against statement*
- *Graphic analysis including balance plot, budget comparison and spend pie charts*
- *Printing facility*

PFM special offer

The full manual for PFM is available to *Atari ST User* readers at a discounted price of £4.95. For further information, turn to page 15

Scribe

A versatile and easy-to-use shareware text editor with lots of features including block editing and search functions

Programmed by: Eric Chapman
Configuration: All STs - med and hi-res
Filenames: X_SCRIBE.TOS -
Self-extracting archive

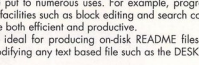
Text editors are one of the most common types of program in the PD world. There are literally hundreds of them, although few claim to be easy to use, work in extended resolutions (such as Overscan modes) and offer lots of other features besides.

Scribe is one of these few and is a prime example of a great program available under the popular shareware philosophy.

It can be put to numerous uses. For example, programmers looking for an editor offering such useful facilities such as block editing and search commands to make entering and editing source code both efficient and productive.

It is also ideal for producing on-disk README files for supplementary documentation or even for modifying any text based file such as the DESKTOP.INF file.

Scribe offers many functions found in commercial text editors such as a comprehensive set of block editing facilities

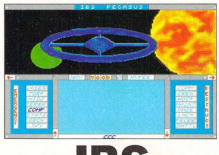


A quick look...

- *GEM window environment*
- *Up to ten documents in memory at once*
- *Single key switching between documents*
- *Extended block functions*
- *Search and replace*
- *Undo facility*
- *Memory management facility for multi-tasking environment*
- *On-line help*

Single-sided service

Single-sided drive users wanting the contents on this month's disk on single-sided disks should send their original CoverDisk and a cheque for £1.50 – payable to *Atari ST User* – to SSD Service, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP.



IBS Pegasus

Explore space and battle against other ships in this space strategy game

Programmed by: D L Edwards
Configuration: All ST's - low resolution
Filenames: X_PEG1.TOS, X_PEG2.TOS -
Self-extracting archives

IBS Pegasus is quite a complex game so refer to the on-disk instructions for more detailed information. It is quite large and you will need to copy both archive files to seperate blank disks and execute them to begin the extraction. Once this is complete, be sure to delete both archive files.

ST Tools

A powerful and extremely versatile tool that offers numerous utilities for manipulating, editing and managing files both on hard and floppy disks

Programmed by: Stephen Cornia
Configuration: All STs with 1Mb or more - hi or med-res
Filenames: X_STTOOL.TOS -
Self-extracting archive

Those familiar with PCs will no doubt have heard of a file utility called PC Tools. The program allowed all kinds of file manipulation facilities including the extremely useful undelete function for recovering accidentally deleted files.

ST Tools attempts to offer the same versatility for ST users and does extremely well in its attempt.

Visually, ST Tools provides a display showing a directory tree and text listing of files by directory. Essentially, ST Tools is a collection of various file utilities all under one program with all utilities accessed through GEM's drop-down menu system.

This makes for an extremely easy to use and intuitive interface that beginners will immediately become accustomed to.

Some of the many functions ST Tools has to offer are: listing/editing of File Allocation Tables, hex dumping of files, sectors or memory, searching of files, sectors or memory and checking, repair and optimising of file structures.

ST Tools provides a powerful and versatile tool for examining, editing and recovering files, both on a floppy and hard disk based system

ST Tools has many editing functions for manipulating data either in memory, sectors or within files

Problems with your CoverDisk?

With thousands of disks being duplicated each month, a few will inevitably be faulty. Fortunately, we can help you. Send the faulty disk to:

PC Wise, Dowlais Top Park, Dowlais, Merthyr CF48 2YY

A replacement will be sent free of charge but please allow 28 days for delivery.

CoverDisk Hotline

Hotline number: 0625 859766, 2pm to 5pm every Wednesday.

If you have any other problems with the CoverDisk, our technical editor, Darren Evans, will be available on the *Atari ST User* CoverDisk Hotline. The Hotline number is only available within the times specified, and no advice will be available outside these hours.

View ST/TT

A utility that allows you to load and view graphics files in various formats

This program allows you to view picture files in a variety of file formats. There are two versions of the program, one for ST/E computers and one for the TT.

It utilises the current screen resolution via VDI and should therefore have no problem adapting to extended screen resolutions provided by such devices as Overscan.

Another plus for the program is its ability to allow you to view pictures in various ST resolutions without having to exit the program and alter the resolution via the Preferences option from Desktop.

All pictures are expanded to their true colours and then reduced to the number of colours offered by the current resolution. For example, if a TGA picture with 16 million colours is to be shown in TT lo-res, it first loads the picture into memory and then reduces it to 256 unique colours. As a consequence of this, large amounts of memory are required so expanded memory is essential for dealing with large pictures.

Programmed by: Conny Peterson
Configuration: All STs (1Mb recommended) - All resolutions
Filenames: X_VIEW.TOS - Self-extracting archive

Once a picture is loaded into memory, it is possible to save it out in either Degas, QRT RAW or extended Degas format. Degas extended format caters for the higher resolutions of the TT, while QRT RAW format allows the file to be loaded into Photochrome to view pictures with many colours on an ST or STE.

STZIP v2.2

The latest version of Vincent Pomey's Zip archiver used for compressing files to save disk space and reduce the transmissions time of files sent via modem. Also used by ourselves in producing the *Atari ST User* CoverDisk

There can't be many ST users who are not familiar with archived files. They can be found on nearly every *Atari ST User* CoverDisk, bulletin boards and many public domain houses use them too.

Archivers allow you to process files so that they consume less space on a disk thereby allowing more files to be stored on disk than is normally possible.

In the case of *Atari ST User* CoverDisks, the immediate advantages of using archived files are that we can offer the user a variety of programs on one disk that would otherwise have required two disks in a normal, unarchived condition.

Of course, this means you get better value for money.

The same goes for public domain libraries who usually have disks with a collection of programs on one disk, again providing more programs for your money.

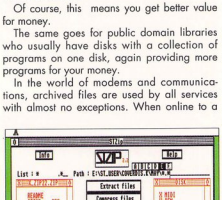
In the world of modems and communications, archived files are used by all services with almost no exceptions. When online to a service, the phone bill is constantly rising and many minutes or even hours may be spent downloading or uploading files.

Programmed by: Vincent Pomey
Configuration: All STs - med or hi-res
Filenames: X_STZIP.TOS - Self-extracting archive

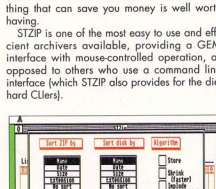
The larger the file, the longer the transmission time and the higher the cost. Using archive utilities often reduce the size of a file or files by half or more.

Therefore the transmission time of an archived file compared to the same unarchived version can halve costs and something that can save you money is well worth having.

STZIP is one of the most easy to use and efficient archivers available, providing a GEM interface with mouse-controlled operation, as opposed to others who use a command line interface (which STZIP also provides for the die-hard CLIers).



The left window shows the contents of the ZIP file being processed, whilst the right window is where the files to be archived are selected



STZIP is extremely configurable and various levels of compression are available

Using the CoverDisk

Write-protect your CoverDisk now by sliding the write-protect tab so you can see through the hole at the top right corner of the CoverDisk.

In order to fill the disk with as many programs as possible, ST User employs disk compression techniques when placing large programs on the CoverDisk.

These files are termed "archived files" and cannot be directly executed from the CoverDisk. Archived files are identified by their names beginning with X_.

Any files that do not begin with X_ are actually folders containing files which are not compressed.

These uncompressed files should also be copied to a blank disk. Following are a series of step-by-step instructions for using the CoverDisk.

Important: Make a backup of your original CoverDisk and put it in a safe place.

Using archived files

Note: When copying files or disks, the ST refers to disk A and disk B in its on-screen instructions. Disk A refers to the disk being copied while disk B refers to the disk being copied to (usually a pre-formatted blank disk).

1. Format a disk.
2. Copy the required archived file to the formatted disk.
3. Run the copied archived file. It will now automatically "extract" to its full size.
4. Once complete, delete the X_ filename as this is no longer required. The formatted disk should now contain all the files that were in the archive file.

Normal uncompressed files

1. Format a blank disk
2. Open the required folder and copy all files in the folder to the formatted disk.
3. You can now immediately run the program/s as is.

Highlighting and dragging files and icons

1. Click once on the item, it should turn black (the item is now highlighted).
2. If you keep the left mouse button held down on the item, a dotted outline of the item appears and you may then re-position it by moving the mouse to the required position (effectively dragging the icon) and releasing the mouse button.

If you are new to the ST and did not understand some of the terminology in the preceding steps. There now follow an explanation of some basic techniques needed.

Formatting a disk

1. Place the disk to be formatted in the drive.
2. Highlight the drive A icon.
3. Move mouse pointer up to the FILE menu at the top of the screen and select FORMAT.
4. A box will appear. Click on OK.
5. Another box will appear. Ensure DOUBLE SIDED is selected then click on OK. The disk is now being formatted.

Copying files to another disk

1. Select the file to be copied by highlighting it and dragging it to the disk B icon.
2. A box entitled COPY FILE(S) appears. Click on OK and follow instructions on the screen exchanging disks as requested.

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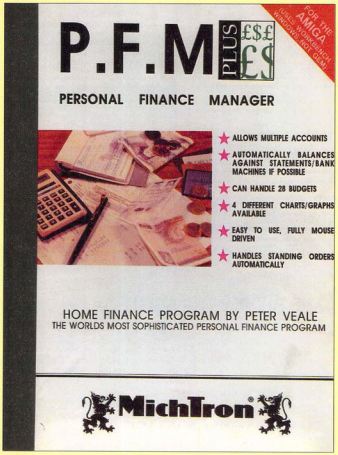

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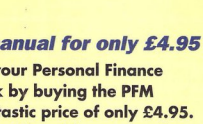

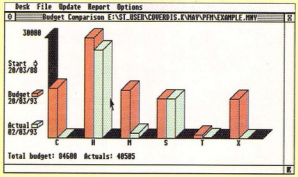

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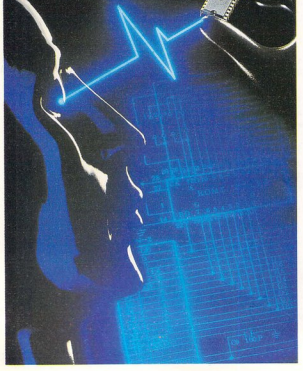

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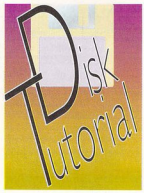


Balancing the books

Keep your home finances in order with this month's CoverDisk giveaway, Personal Finance Manager. Darren Evans explains the basics of using this versatile package

Essentially, Personal Finance Manager (PFM) is a database program specifically designed to handle personal bank accounts, credit card transactions, savings accounts and other similar applications. It makes full use of the ST's GEM operating system, and as such is very easy to use with all functions accessible via the mouse.

Entering new transactions is as simple as filling in a form and graphical reports can be instantly produced from the drop down menus. Standing orders can be automatically debited or credited to your account without having to remember them. PFM will also work out which transactions have not yet cleared when you are checking the account against an official statement.

Once you have extracted the necessary files (turn to CoverDisk pages for information) you should have a disk with the following files: EXAMPLE.MNY (example account), PFM.PRG (main program), PFM.RSC (resource file for main program) and READ.ME (documentation file listing recent updates to program).

SCREEN AREA

To get PFM up and running, make sure you are either in medium or high resolution. PFM will run in lo-res but the limited screen area will mean that some menus cannot be seen. Now double click or open the file PFM.PRG.

After a while, you will be presented with a box asking you to input the correct date. If you have an ST with a battery-backed clock, the date will already be set for you so just click on the OK button. If you do not have a battery-backed clock, you will have to enter the date manually.

It must be remembered that programs like PFM inherently rely on the date entered being correct so that all calculations can be processed correctly, so ensure that the date is correct before proceeding. Once you have entered the date, click on the OK box.

At this point, you will be presented with a file selector showing files on the current disk. You will also notice that only files with the suffix .MNY are listed. All account files have this .MNY extension.

You will also see that an account name called ACCOUNT.MNY is already present on the Selection line of the file selector. There is also a example file called (strangely enough) EXAMPLE.MNY, a sample account for you to examine at your leisure.

For now, just click on OK. A GEM window will open with the title: New account A:\ACCOUNT.MNY and at this time, the window should be empty.

The first thing you have to do now is to enter the opening balance of your account. Move the mouse pointer to Update on the menu bar at the top of the screen and then click on the New Entry selection.

A box will appear with the title Account Transaction Form. The form contains various fields where information is entered and you will notice that the Date field has a thin vertical line at the start of the field.

This thin line is the cursor indicating where any data typed in will appear. To move from field to field, you can use the up and down arrow keys and to edit data entered, you can use the Delete and Backspace keys to delete individual characters while the Esc key completely erases the entire field the cursor is on.

For now, enter the following:

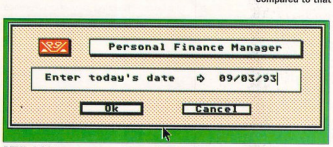
Date	01/05/92
Amount	1000
Budget code	(leave this blank)
Description	Balance

Next, click on the Credit box to the balance amount is positive. Ensure the information entered is correct and click on Done. You should now see the account window displaying the new information just entered.

Following the same process as that used to enter the above opening balance, enter the following transactions, clicking on the Next button for each entry, ensuring that the Debit button is selected:

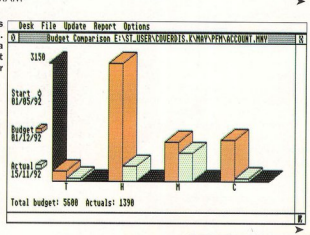
Date	Amount	Budget code	Description
05/05/92	94.75	T	Car Repairs
12/05/92	55.68	C	Weekly Shopping
22/05/92	410.33	H	Mortgage
19/05/92	49.68	C	Weekly Shopping
16/05/92	60.00	M	Cash

After the last entry has been input, click on Done and the account window will appear with six transactions and the total balance in each case has been automatically calculated. Also notice that the transactions have been arranged in order of date. Sometimes, ➤



PFM's initial screen prompting you to enter the correct date

Another of PFM's charts showing the budget comparison. The two vertical bars give a indication of the actual budget compared to that catered for



when entering transactions, mistakes can be made. To edit an entry, move the mouse pointer anywhere on the line of the required entry and click the left mouse button. Now move the mouse pointer to the Update menu item and click on the Edit Entry selection.

The Account Transaction Form box reappears (the one previously encountered when entering the opening balance and debit entries) with the data of the selected line being edited already present.

You can then use the arrow keys to move to the field which you wish to correct and re-enter the data clicking on Done when finished. Practice editing now by selecting the transaction dated 19/05/92 and change the amount to 59.68.

An alternative and faster method of selecting a transaction to edit is to double click on the transaction line to be edited.

PFM also allows you to enter standing orders which are to be automatically executed on dates specified by you. Move the mouse pointer to the Report menu item and select View standing orders.

An empty window will appear. Next, move the pointer to the Update menu item and click on the New entry selection.

Another entry form titled Standing Order Form will appear. This is very similar to the Account Transaction Form seen earlier and works in the same way. Enter the following information:

Description	Loan repayment
Amount	120.00
Start Date	15/05/92
End Date	15/11/92
Budget code	M

The five buttons on the far right of the form determine the frequency of the standing order. For this example, click on Monthly. The information just entered describes a standing order that is to deduct £120 from the account on a monthly basis for six months from the starting date of 15/08/92. Click on Done.

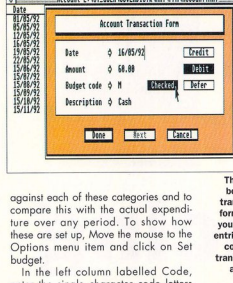
ACTIVE WINDOWS

At this point, you may have noticed that the menu items are exactly the same as for the account entries, their functions being determined by the currently active window.

Also, procedure for correcting errors is identical to that used in editing the transaction entries. At this point, close the standing orders window by clicking on the box at the top left of the window.

You will have noticed that the entries that have been input up to now have a single character field labelled Budget code. This single letter can be used to signify one of several categories. In the example data entered previously, the single characters have the following meaning: T is transport, M is miscellaneous, H is house and C is consumable.

PFM lets you set a budget figure against each of these categories and to compare this with the actual expenditure over any period. To show how these are set up, Move the mouse to the Options menu item and click on Set budget.



The check box in the transaction form allows you to mark entries when confirming transactions against a formal statement

In the left column labelled Code, enter the single character code letters used up to now, namely, T, H, M and C, using the arrow keys to move from field to field. Next, move the cursor to the description fields by pointing the mouse at the first description field and clicking the left mouse button.

Enter the descriptions for each of the codes as explained earlier. Now move to the next field labelled Budget and enter the following values: 40, 450, 150 and 160.

BUDGET CATEGORIES

PFM allows you to have up to ten budget categories and you may identify them with any single character from A-Z, 0-9, ?, :, *. Each code must be unique. Finally, on the far right of the budget box, are three buttons labelled Year, Quart and Month. This sets the periods that apply to the budget amounts.

Having entered a fair amount of data, now would be a good time to save it to disk. Move the mouse pointer to the File menu item and click on Save File. The account is then saved to the disk. Close all windows by clicking on the close box at the top left of each window.

PFM offers numerous features to help you check your account against a formal statement. The most simple of these is a means of marking entries that have been confirmed on the statement.

Having saved the previous account and closed all windows, let's look at how to load an account into PFM. Move the mouse pointer up to the File menu item and click on Open File. You will be presented with a file selector from which you must choose the required account file. Select ACCOUNT.MNY and click on the OK button.

After a brief delay, the account we set up previously appears in a account window showing all transactions. Move the mouse pointer to one of the entries and double click or use Edit entry (mentioned earlier) to bring up the entry form.

As you can see, one of the buttons in the box is labelled Checked. Click on this and then click on Done. When the account window is displayed, you will see that the checked entry now has a check mark next to it Another faster method for checking entries is to click on the entry with the left mouse button while simultaneously holding down the right mouse button. This checking procedure simply allows you to see which entries have been confirmed against a statement for example and they are not used by PFM in any other way.

One of the most useful ways to examine the current status of your account is by making use of the graphical charts available. For example, we have seen how to create a budget, and you may have noticed a column labelled Use. Move to the Budget screen by selecting Select Budget from the Options screen. Now click on each box corresponding to the six budget items and click on the OK button.

Move the mouse pointer to the Report menu item and select Entry distribution. The resulting screen will show a pie chart with six segments relating to each of the budget items that have been set up.

To the right of the pie is a key showing which shaded segments belong to which budget category. The complete pie indicates the total of all transactions within the selected budget categories and gives the proportion occupied by each. A percentage figure is also shown along with the key.

Close the pie chart window and then select Budget comparison from the Report menu item. A bar chart will appear. The horizontal axis of the chart shows the budget codes with a pair of vertical bars above them.

EASY TO USE

The bar on the left-hand side represents the budget for that category while the right hand bar represents the total so far. To the left of the chart, you will see the start date of the chart and below this is the end date of the budget period.

Below this is the end date for the totalling of the account entries. The two values at the bottom of the chart are the the total budget and total actuals for the categories over the selected period.

As you can see, using PFM is extremely easy thanks to the intuitive GEM interface. Entering transactions is just like filling in forms except that making corrections using these electronic forms is a lot easier than using pen and paper.

The features detailed in this basic guide are just a few of those available. The complete manual listing all of PFM's functions, including a useful reference section, is recommended in order to fully appreciate the full power of PFM.

PFM reader offer

The complete manual for PFM detailing all the functions and facilities and including a useful reference guide is available for £4.95 to *Atari ST User* readers. For more information, please turn to page 15.

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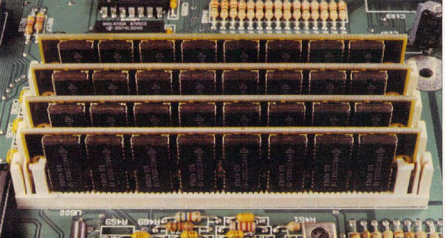
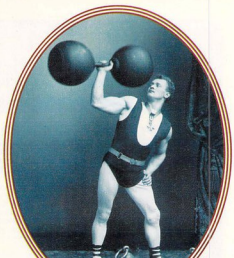


STE owners have no problem upgrading their computer's memory and can simplyplug the memory cards into the memory slots on the STE



Packing in the

Darren Evans takes a look at some of the hardware and software on offer that can dramatically increase the performance and abilities of your ST

After buying a 520STFM some while back, my first upgrade for the machine was a Megafile 30 hard drive. At the time, I was getting really frustrated with swapping disks and having to endure the long loading times when it came to playing the various Sierra graphic adventure games that were available.

I remember thinking that if only I had a hard drive, I could put my favourite games on the hard disk, thereby negating the need for disk swaps while at the same time, enjoying the benefit of better gameplay due to the faster loading time.

"All I need is about 30 meg, that's more than enough," I told a friend.

Now three years on, I have swapped my 520STFM for a Mega ST4 and now have a 100Mb hard drive, which is quickly running out of space again due to an interest in 3D animations and sampled sound effects.

I'm also beginning to contemplate upgrading the speed and graphics of my ageing Mega to increase production and enhance the visual side of my animations.

It seems that no matter how much high performance hardware or software you throw at your computer, you will soon find that new and more powerful applications become available, which consequently eat away at the new-found power until you find yourself needing even more.

Whoever coined the phrase "you can't have too much of a good thing" certainly knew what they were talking about. Considering the number of letters that arrive in the office from people wanting information on accelerators and hardware to provide a greater range of colours, it seems a large proportion of ST users are very interested in hardware and software that can take their standard ST to greater heights of performance.

Luckily, there are many third-party developers who have recognised the demand for these power add-ons and can provide various products for the average ST user looking to improve the ST's performance to well above Atari's original specification.

INITIAL ABILITIES

Such support is also one of the major reasons for a machine's popularity. Unfortunately, Atari never really designed the ST to be easily upgradeable which is strange because most users (and sometimes even the software for the ST) will inevitably outgrow the initial abilities of their ST and, therefore require some form of upgrade. So why not provide easy access and upgrade slots for such situations?

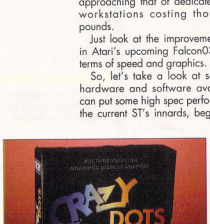
One perfect example of software outgrowing the ST appeared when games software houses started to produce programs that required1Mb to run. Even games that would run on 512k machines sometimes had extra features, such as sampled sound effects and less disk swapping, for those who had the extra memory. This spurred many users into upgrading their ST's memory from 512k to 1Mb in order to play such games.

Two main aspects of computers which are currently undergoing major improvements are speed and graphics.

Companies such as Motorola spend enormous amounts of money on the development of new processors, such as the 68040, to provide users with ever greater processing speed. Graphics too are undergoing major enhancements with the quality of new home computers approaching that of dedicated graphics workstations costing thousands of pounds.

Just look at the improvements evident in Atari's upcoming Falcon030, both in terms of speed and graphics.

So, let's take a look at some of the hardware and software available that can put some high spec performance into the current ST's innards, beginning with



Crazy Dots can transform your ST's graphics, with two versions offering either 256 colours from 16 million or the more expensive version offering 32,000 colours from 16 million

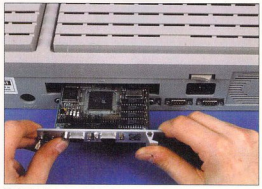
products aimed specifically at increasing the operational speed.

Two options are available for the user who feels the need for speed – hardware accelerators and software accelerators (sometimes referred to as software blitters). Software accelerators are by far the cheapest and easiest to install and they work by essentially replacing the somewhat slow routines that make up the TOS operating system of the standard ST.

SLOW LANGUAGE

The ST's operating system was written in C, which although a powerful language, is relatively slow compared to code written in assembly language. This lack of speed is evident particularly in the graphics performance of the VDI and AES routines, two collections of software routines that form GEM (Graphic Environment Manager) resident in all STs.

Although these routines are very powerful and versatile, they do not provide as high a performance as they could. They are used to create the various boxes, menus and windows that form the GEM environment of the ST's operating system, the ST's desktop being



Fitting the Crazy Dots card into a Mega STE is extremely easy. Just open the VME access slot and push the card home. Crazy Dots is also available for the Mega ST

productive as less time is spent waiting for the screen to redraw.

This is particularly the case with desktop publishing (DTP), where text and graphics are combined onto pages and, with pages larger than the screen display, scrolling around such pages on an un-accelerated ST is quite slow.

Users of colour DTP packages such as Calamus SL, which take advantage of graphics cards that provide the ST with a vastly greater range of colours and resolutions, will particularly suffer from slow screen redraws because the ST has to work even harder to manipulate the larger amounts of data that are required to provide such graphics.

It must be realised at this point that software accelerators only speed up GEM graphics and any programs that do not use GEM graphics, such as games or programs which use their own custom written routines that bypass GEM's, will not benefit from the accelerator.

Unfortunately, there is a negative side to software accelerators. Because they reside in the ST's memory, they sometimes clash with other software that subsequently loads into the ST after the accelerator has been installed causing the ST to crash or lock up. Also, there is the disadvantage that the accelerator is taking up a portion of the ST's memory thereby leaving less for other programs.

Two of the best software accelerators available which can provide for the user looking for that extra turn of speed are NVDI and Warp 9. NVDI, available from System Solutions, not only replaces the slow operating system routines that comprise GEM, it also provides a part of GEM that is, essentially, missing. GDOS (Graphics Device Operating System) is the missing culprit which is a extension to GEM that provides the ST with the ability to handle multiple fonts and to display graphical output to a wide variety of output devices such as plotters.

Also, NVDI goes some way to eliminating the problem of incompatibility with other programs by allowing the user to effectively "turn off" various features, such as the GDOS facility mentioned earlier.

COMPROMISE

In fact, the latest version of NVDI has sacrificed a little speed in favour of greater compatibility. Also, software producers are beginning to support NVDI by explicitly stating that their products are compatible with it.

One such company is EMagic, the company behind the professional music package Notator, who once stated that nothing should be run alongside their programs and who now say that their software is NVDI compatible – an impressive indication of how seriously the software is being taken among developers.

Another plus for NVDI is that it works in extended resolutions, other than the standard low, medium and high screen modes of the ST, through products such as Overscan and various graphics cards.

The increase in screen output that NVDI is quite astonishing. Just take a look at the Timing results box, showing the speeds achieved during tests performed using a benchmark utility, for an indications of the overall improvements.

Warp 9 by CodeHead Technologies and distributed by ST Club is a improved re-incarnation of the popular Quick ST screen accelerator.

Derek Mihocka from Branch Always software sold the publishing rights and source code for Quick ST to CodeHead Technologies, a US company who specialise in utility applications. CodeHead then developed it further and released it under its new name of ➤

power

the most obvious of programs that use such graphics.

It soon became apparent to developers that GEM's routines were not up to scratch in certain applications and they set about writing and incorporating their own routines in order that their programs would perform much faster.

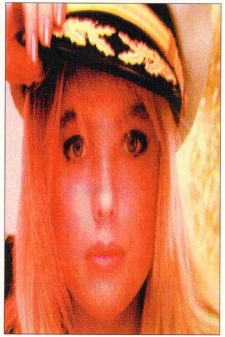
Unfortunately, this is contrary to Atari's guidelines for programming the ST for maximum compatibility and led to incompatibility not only between other software, such as accessories, but also to newer versions of the ST's operating system (TOS).

Eventually, certain developers realised that there would be a market for software which could provide the necessary improvements in graphical output for those who needed the extra performance and set about writing programs to replace those offered by GEM.

Once the accelerator has been installed, any programs which use the ST's GEM graphics will, upon trying to access GEM's routines, be re-directed to the new code, thereby benefiting from the faster, more efficient replacement routines and a noticeable improvement in program graphical performance is achieved.

Text scrolling becomes faster, windows open and close more quickly, in fact, most screen output incresing well above 100 per cent.

Of course the benefit to the user is that sessions at the computer become more



A standard ST in 16 colours can only provide linited quality (above). Whilst the left picture using Crazy Dots' 256 colours is vastly superior

Warp 9. Warp 9 not only speeds up screen output – it includes various screen savers and custom fonts and also allows you to load a picture in place of the normal Desktop background.

You may have noticed from the benchmark timings that the software accelerators do indeed speed up the graphics output of the ST, but overall processing speed is not affected.

For example, mathematical and memory operations are entirely unaffected by the new routines offered by the software accelerators.

All STs, with the exception of the Mega STE and TT computers, run at a speed of 8MHz. This speed determines how fast the 68000 CPU operates and hence how fast the various instructions are performed. The ability to increase this speed above the standard 8MHz lies in the domain of hardware accelerators.

DECENT SPEED

The most common hardware accelerator is the Blitter chip, which, although fitted as standard in all STEs, was not incorporated in earlier STs. Essentially, the Blitter chip takes care of drawing windows and other GEM objects, thereby leaving the 68000 chip to do other things. The blitter is fairly inexpensive and does provide a decent increase in speed compared to a machine without a blitter.

Other, more exotic (and expensive) hardware accelerators come in varying speeds. Unfortunately, such hardware usually requires that the user who wishes to install one must have a good knowledge of soldering and/or handling sensitive electronic equipment.

Also, because the hardware effectively replaces or adds to the ST's standard 68000 processor, it means opening up the ST thereby voiding any warranty which may still be valid. Luckily, most distributors of such accelerators provide a fitting service for those who are not confident in such an undertaking. They are also quite expensive, with some boards costing over £1,000.

WARNING

Readers are reminded that opening the ST to fit any upgrade will invalidate any warranty that exists. If you intend to install a upgrade yourself, be sure to take precautions against any static damage that can occur to sensitive electronic components. If in doubt, take advantage of any fitting service offered by the supplier.

But once fitted, you can expect not only an increase in screen output, but an increase in both maths and memory routine speeds, too.

This is ideal for packages such as ray tracing programs, which rely heavily on mathematical processes and can take hours to produce a picture, because all calculations are performed more quickly thereby reducing the time needed to produce or "render" a picture.

System Solutions have a variety of boards operating at speeds from 16MHz right up to 50MHz and as the MHz rise, so does the price. One board provided by System Solutions for this feature was the top of the range Turbo 30.

This little baby features a 68030 processor – big brother to the 68000 found in all STs – and 4Mb of fast RAM, all operating at the blistering pace of 50MHz. The increase in performance is phenomenal.

In fact, when using a demo version of Calamus SL with an enhanced graphics board offering 256 colours, the increase in performance brought it up to par with the Apple Macintosh IIcis used here in the office to produce *Atari ST User* every month.

The £1,000+ price tag, however, puts it somewhat out of reach for the average ST user however, as it is aimed more at the professional.

Now consider you have just installed a hardware accelerator into your computer, you have just performed some speed tests and the accelerator has indeed increased the performance of your ST.

The ST is still using the slow GEM routines, but they are being performed more quickly through the efforts of the hardware accelerator. Therefore, it is possible to use a software accelerator in combination with its hardware counterpart to achieve even greater increases in performance.

Examine the timing tables opposite to see just what improvements are made and you will see that some pretty astonishing increases can be achieved.

GRAPHICAL ABILITIES

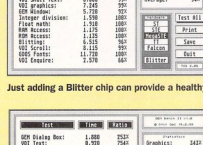
Graphics are one of the most impressive and most talked about feature of a computer. In my former life as a salesperson in a computer store, the decision as to whether to buy computer A or computer B most often rested on the difference in graphical abilities of the two machines being demonstrated.

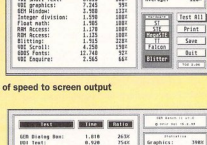
Current STs and STEs offer the user a maximum of 16 colours on-screen and three resolutions. The most colourful resolution is low resolution with a screen dimension of 320 x 200 pixels in 16 colours.

Next is medium resolution with 640 x 200 pixels in four colours and finally, high resolution with 640 x 400 pixels and offering a mere two colours, namely black or white (referred to as mono

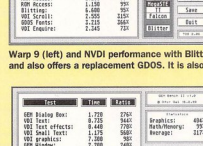
The benchmarks

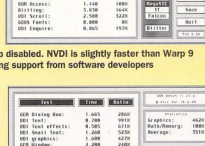
Here are a list of timing results obtained using Gembench 2, a benchmark utility written by Ofir Gal. Results show various configurations of software and hardware operating under TOS 2.06.



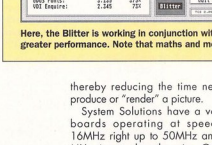


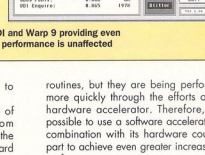
Just adding a Blitter chip can provide a healthy turn of speed to screen output



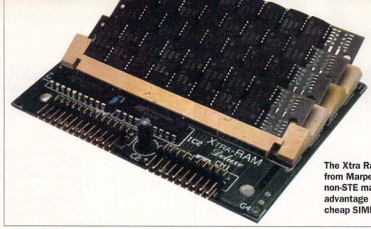


Warp 9 (left) and NVDI performance with Blitter chip disabled. NVDI is slightly faster than Warp 9 and also offers a replacement GDOS. It is also gaining support from software developers





Here, the Blitter is working in conjunction with NVDI and Warp 9 providing even greater performance. Note that maths and memory performance is unaffected



The Xtra Ram Deluxe board from Marpet enables users with non-STE machines to take advantage of the relatively cheap SIMMs

mode requiring a special high resolution monitor).

Compared to the opposition, the Atari ST is admittedly a little lacking when it comes to graphics. Some improvement was made with the introduction of the STE which provided hardware scrolling, which is dismally unsupported by the games industry, and a much enhanced choice of 4,096 colours over that of 512 colours of the ST. Unfortunately, the maximum number of colours on-screen at once still remained at 16.

COLOUR-DEPRIVED

Sadly, we were destined to simply look on in admiration, with a hint of jealousy, at the superior graphics of the PCs, with their 256 colours blatantly shown as screenshots on almost every ST game packaging. Until now that is.

Not only can colour-deprived ST users buy hardware to increase their humble STs' colour capabilities, but Atari are about to introduce their PC-busting baby – the Falcon030 with its amazing colour palette of 262,144 and 65,536 colours on-screen at once, not to mention the various enhanced resolutions.

As the song says, "The future's so bright, I gotta wear shades."

If you are one of those people who, like me, can't wait for the Falcon030, there are numerous enhanced graphics boards available for your ST.

One of these boards goes by the unlikely name of Crazy Dots. This board, from System Solutions, provides the user with 256 colours on-screen from a 24-bit palette of 16 million colours.

This is ideal for people who want full colour displays for their DTP work. An added attraction of Crazy Dots is the fact that DMC, developers of the Calamus SL colour DTP package, have officially approved Crazy Dots for use with their product – high praise indeed.

At this point, those of you expecting games and programs to work with the new graphics board will be disappointed. The extra graphical capabilities of the board can only be accessed through GEM routines.

This means that programs that do not use GEM's routines will not be able to take advantage of the enhanced graphics and resolutions. However, programs that use GEM can determine the graphical capabilities of the machine they are running on, and can thereby take advantage of any special hardware attached.

Unfortunately, not all programmers are so forward thinking and just assume that the ST will never have more than the three standard resolutions and standard 16 colours maximum, and hence will not take advantage of any graphics boards.

Thankfully, the upcoming Falcon030 has driven some programmers into realising that if they write programs following Atari's guidelines, then their programs should be compatible with the Falcon.

One example of a package working both on the ST and the Falcon comes in the form of True Paint from HiSoft. This graphics program is also capable of detecting the enhanced graphics hardware that may be attached and will work perfectly with it, allowing the user to draw in all resolutions, using all the colours available.

Two versions of Crazy Dots are available, one offering 256 colours from a 24-bit palette and the other offering 32,000 colours on-screen from a 24-bit palette. For information and prices on all products, see the Where to get 'em box.

Besides the graphics boards offering both enhanced colours and resolutions, there are also boards for increasing just the resolutions available on high resolution monitors.

The Reflex Graphics Adaptor from Titan Designs offers just that. It works with the Atari range of high resolution monitors (SM124, SM125, SM144 and SM146) and gives resolutions of 1,024 x 960 on standard monitors, 800 x 1,024 on A3 portrait monitors with the highest resolution of 1,024 x 1,024 on landscape A3 monitors.

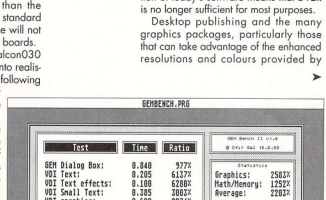
EXTRA SPACE

The Reflex Graphics Card is ideal for anyone wanting the extra working space available and is ideal for such applications as spreadsheets, DTP and wordprocessing where they can benefit from the extra screen area.

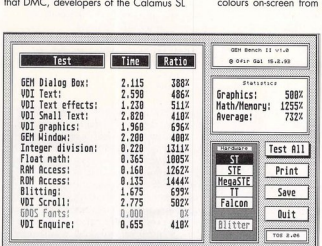
One of the most popular and obvious bits of kit that will should be first on the list for every user of a 512k ST is a memory upgrade. Anyone wishing to use their machine for anything other than games will soon find 512k very limiting.

This is because the growing sophistication of today's software means that 512k is no longer sufficient for most purposes.

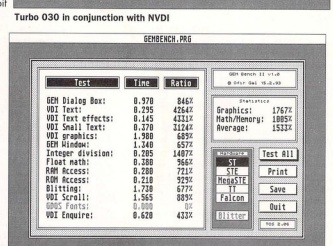
Desktop publishing and the many graphics packages, particularly those that can take advantage of the enhanced resolutions and colours provided by ➤



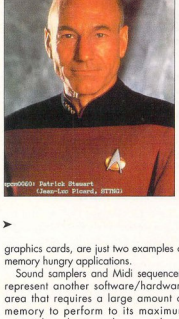
Turbo 030 in conjunction with NVDI



Installing Turbo 30 increases maths output dramatically



Turbo 30 in conjunction with Warp 9



Once a graphics card such as Crazy Dots is fitted, the quality in graphics is enormouse. As can be seen from these GIF files from CompuServe

graphics cards, are just two examples of memory hungry applications.

Sound samplers and Midi sequencers represent another software/hardware area that requires a large amount of memory to perform to its maximum potential, and yet another area that is about to make tough demands on the ST's RAM is the realm of multitasking operating systems.

With the possible release of MultiTOS and the (eventual) release of the Falcon030, multitasking will enable users to run many programs simultaneously.

Obviously, the more programs running, the more memory is taken up and used by those programs. Therefore, the more memory your ST has, the more powerful and productive it becomes in a multitasking role.

When it comes to the choice of which upgrades to buy there are a proliferation of companies who can provide 512k users with upgrade boards to take their lowly 512k machines up to 1, 2 or 4 megabytes.

MORE MEMORY

Marpet, a company who specialise in memory upgrades, are soon to break the 4Mb barrier by introducing a newly developed memory board that can extend the ST's memory by a further 8Mb of memory giving a total of 12Mb on a ST already fitted with 4Mb.

Unfortunately, upgrading the ST's memory is not as straightforward as it should be. During the years the ST has been available, it has undergone some internal changes, so much so that manufacturers of upgrade boards have separate sections within their documentation explaining various extra steps that need to be taken in the installation procedure for the different ST models.

Upgrading is further complicated by the fact that Atari designed the ST without contemplating that a user would eventually want to increase memory.

Therefore in almost every case, excepting the STE range, there is some soldering or removing of various components in order to fit the upgrade rather than just plugging in the extra memory.

Even the old 8-bit Atari 800s had plug-in memory boards. Therefore, users wishing to upgrade and who are not familiar with handling electronic components or soldering should take advantage of any fitting service offered by the supplier. Although some upgrade kits do claim no soldering is required, you usually have to remove certain chips and these are very susceptible to static damage.

As hinted at earlier, the STE range of computers do not suffer from such complications. Such upgrades for the STE come in the form of SIMMs. These are quite small circuit boards with an array of RAM chips on them which are simply plugged into the vacant slots which are present in most STEs.

This makes installation extremely easy with the only negative side being that if your ST is still under warranty, the fitting process requires that you open the casing thereby voiding said warranty and also, the danger of static damage is present. However, damage is easily avoided by ensuring you do not touch the RAM chips on the SIMM board.

Thanks to the expertise of both programmers and electronic geniuses, coupled with a healthy enthusiasm for the ST, there are quite a few products out there that can turn your computer into a true powerhouse of performance.

FUTURE HARDWARE

And, looking into the future a little way, who knows what wonders are being created for the mean machine of tomorrow, the Falcon 030.

With its plethora of output ports such as the LAN, SCSI 2 and especially the DSP port, we can look forward to some pretty amazing and powerful hardware.

Already there are companies developing products that will allow the Falcon to be used as a extremely powerful video editing tool such as genlock devices, not to mention the talks between Kodak and Atari that will result in the Falcon being able to utilise Photo-CD enabling images from your holiday snaps, for instance, to be displayed to your friends on the Falcon's screen in high resolution and glorious 16 million colours.

Where to get 'em

Graphics cards

Product: Crazy Dots graphics cards
£449 for the 256-colour version
£529 for the 32000 colour version.
- *System Solutions*

Product: Reflex Graphics Card for MegaST and STE (with adaptor)
- *Titan Designs for £224*

Product: Matrix range of graphics cards
- *Silica Systems*

Memory upgrades

Prices vary considerably. For more detailed information contact the following suppliers:
- *Marpet Developments*
- *Power Computing*
- *Ladbroke Computing*
- *System Solutions*
- *Silica Systems*

Software accelerators

Product: NVDI v2.10
- *System Solutions*

Product: Warp 9
- *The ST Club*

Hardware accelerator boards

Product: Turbo accelerators
Various speeds from 16 up to 50MHz are available. Also, varying amounts of on board fast RAM is available.
- *System Solutions*

Product: ICD AD-Speed (16MHz board for ST and STE versions)
Contact the following for prices and information:
- *Gasteiner*
- *System Solutions*
- *Silica Systems*
- *Titan Designs*

Supplier addresses

- Marpet Developments, Meadowfield farm, Fellbeck, Peteley Bridge HG3 5ET, Tel: 0423 712600
- Power Computing Ltd, Unit 8 Railton Road, Woburn Road Ind. Estate, Kempston, Bedford MK42 7PN, Tel: 0234 843388
- Gasteiner, Unit 2, Millmead Business Centre, Millmeade Road, London N17 9QU, Tel: 081-365 1151
- Ladbroke Computers, 33 Ormskirk Road, Preston PR1 2QP, Tel: 0772 203166
- Analogic Computers, Unit 6, Ashway Centre, Elm Crescent, Kingston-Upon-Thames KT2 6HH, Tel: 081-546 9575
- Evesham Micros, Unit 9, St. Richards Road, Evesham Wr11 6TD, Tel: 0386 765500
- Silica Systems, 1-4 The Mews, Hatherley Road, Sidcup DA14 4DX, Tel: 081 309 1111
- The ST Club, 2 Broadway, Nottingham NG1 1PS, Tel: 0602 410241
- Titan Designs Ltd, Inst. of Research & Development, University of Birmingham Research Park, Vincent Drive, Birmingham B15 2SQ, Tel: 021-415 4155

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Epson LQ570 24pin £265
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Stylish Stylus

Epson goes inkjet. The Stylus 800 from the biggest dot matrix company

Epson have brought some new technology to mid-price inkjet printers. Is it better than the alternatives, or just different? John Mallinson investigates

Epson are the biggest name in dot matrix printers, and they must know better than anyone that dot matrix sales are falling and inkjet sales, rising.

It's not surprising then that they have released the 360dpi Stylus 800. This is not their first inkjet, but it's their first affordable one. The RRP is £379 but it sells for as little as £290 which competes favourably with other mid-range models.

What marks this machine out from the rest is that it uses a different printing method. This is piezo-electric technology (see box below) which Epson claim has significant speed and quality advantages over the more common bubblejet appliances, and makes their machines cheaper to run. The machine has the low-rise armchair appearance which was first seen with the HP Desklet.

Economy mode	ABCDEFGabcdefg
Roman	ABCDEFGabcdefg
Sans Serif	ABCDEFGabcdefg
Courier	ABCDEFGabcdefg
Prestige	ABCDEFGabcdefg
Script	*ABCDEFGabcdefg*
Roman T	ABCDEFGabcdefg

Good looking fonts, but difficult to use from the ST at the moment

The paper tray sticking out at the front holds 100 sheets, and paper stacks face up above it after printing. There's a deep slot at the back for feeding single sheets or envelopes. The on/off switch is front left, and you connect up very simply via a power socket and parallel port at the back.

Hot ink and cold crystals

Inkjet printers work by spitting minute drops of ink onto the paper out of a group of 50 or so closely-packed nozzles in the print head.

These nozzles are about 0.03mm across (less than a hair's breadth) and the ink comes out incredibly fast – about 700km/hr! The drops build up the image or characters on the page.

There are two methods of ejecting the ink onto the paper: the first is the bubblejet technique (also called "thermal inkjet" by HP), the second, used in the Stylus 800, is the piezo-electric mechanism.

In a bubblejet printer a small electrical heating coil lies next to each nozzle. When a current is passed through the coil it heats the ink to about 300°C, this creates a bubble of vapour which pushes a drop of ink out of the end of the nozzle.

The current stops, the ink cools, and more is drawn into the nozzle from an ink reservoir ready for the next cycle. This all happens very quickly, but even so the time taken to heat and cool the ink limits the theoretical maximum speed of the printer. Another problem is that ink doesn't like being boiled.

At present most bubblejets work at 300 or 360dpi, but because there are no moving parts the nozzles can be packed very close together and in future we can expect higher resolutions.

Piezo-electric inkjets are rather different. The piezo-electric effect, first described in the 1880s, states that if you apply a voltage across quartz crystals they will change shape (and, conversely, if you squash them they will produce a voltage).

This principle is used in quartz watches, gramophone pick-ups, microphones and a variety of other electro-mechanical devices.

REPLACEABLE CARTRIDGES

In a piezo inkjet a crystal protrudes into the wall of each nozzle. When the current is turned on the crystal enlarges and forces a drop of ink out of the end; when it's turned off it shrinks and draws more ink in from the reservoir.

This system is theoretically up to four times faster at producing ink droplets than the bubblejet. A disadvantage is that (until now) piezo printers have been more expensive to manufacture because it has been very difficult to miniaturise the mechanism.

With the bubblejets the ink cartridge and print head are one unit which you replace together; with piezos you just plug in a new ink reservoir, and the print head lasts the life of the machine. This should make the piezos 30-40 per cent cheaper to run.

Also at the back is a large removable panel for clearing paper jams. Fitting the ink cartridge (£10.30 for 700,000 characters) is very easy – open the top of the printer and drop it into a cradle.

Basic control of the printer is from a clearly-labelled panel which lets you select the typeface (from seven), control paper loading and so on.

For other settings (character set, line feed character etc) you don't need to fiddle with minute DIP switches as the S800 will print out a couple of sheets of the current defaults with instructions on how to change them with the control panel. Overall it's a friendly printer to use and has a good instruction manual.

You'll find that it has a nice selection of LQ fonts – the usual Courier, plus two species of Roman, two of Sans Serif, Prestige and Script. There is also an economy mode which uses less ink but is not faster.

The Roman and Sans Serif faces are scalable, which means that the printer can produce them at any size from eight to 32 point if given the right commands from your software. A problem here - there is no wordprocessor for the ST which can do that... yet.

PRINTER DRIVERS

Soon however both That's Write and Protext will have printer drivers which will let you apply these different font sizes to glamorise your documents. For normal text or graphics printing you can use standard Epson 24-pin dot matrix printer drivers; any decent software should have these.

After reading Epson's promotional literature I expected to be knocked sideways by the S800's print quality – I wasn't. It is good, but not that good. Character outlines look sharp to the naked eye but the dots showed when magnified.

I tried various different types of paper, including special inkjet stuff, and it didn't make much difference. This was a little disappointing, but then most people don't inspect documents with a magnifying glass.

As for print speed, the S800 is quite respectable but not exceptional. It is rated at 150 characters per second, which translates into about 40 sec per A4 page in real life. This is slightly faster than most of the other machines at this price; it's a pity that there is no fast draft printing mode (which most of the others have).

The Stylus 800 is a nice machine. It looks good, is easy to use, is fairly fast, is economical to run, and is not too expensive to buy. However ST owners will not be able to get the best out of the machine as there aren't the printer drivers at the moment – this will change.

The greatest disappointment is that to my eye the print quality is just not as good as on the DeskJet and most other similarly priced machines.

Although Epson's new technology may have theoretical benefits they don't seem to have fully translated into practical advantage yet.

BOTTOM LINE

FEATURES
360dpi piezo-electric inkjet printer, 150cps speed, built-in 100 sheet feeder.

Excellent
Good
Average
Bad
Appalling

EASE OF USE
Easy to plug in and go. Simple to operate. Good manual.

Excellent
Good
Average
Bad
Appalling

VALUE FOR MONEY
One of the cheapest mid-price inkjets.

Excellent
Good
Average
Bad
Appalling

Product: Epson Stylus 800
Supplier: Epson UK Ltd
Telephone: 0442 61144
Price: RP £445, available for about £280
Configuration: as described, no extras to buy.

A look at the competition

The Stylus 800 is a latecomer to a party that is getting crowded. We've found seven other printers in its price range (look at the prices in brackets which are what you would expect to pay).

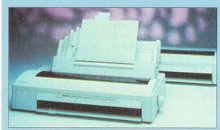
They are all good, but the first to appear, the HP DeskJet still stands out for its value, speed and simplicity. We've used all these printers with an ST without problems.

If you want bigger and faster office machines you can have them (from Epson among others), or if your budget is limited there also is quite a choice – the very neat Canon BJ10ex costs about £165 these days.

Canon BJ200

Canon BJ200 RRP £399

Canon's latest compact desktop inkjet – advertised as the printer to go on the executive's desk. Neat, fast, looks good. Well worth considering.



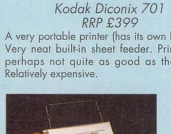
Canon BJ300

Canon BJ300 RRP £499

A conventional-looking office printer; well made. Very speedy when printing text, less good at graphics. Built-in tractor feed, cut sheet feeder is an extra.

Kodak Diconix 701 RRP £399

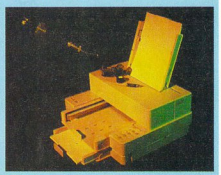
A very portable printer (has its own batteries). Very neat built-in sheet feeder. Print quality perhaps not quite as good as the others. Relatively expensive.



Kodak Diconix 701

Citizen Projet RRP £496

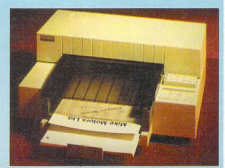
Similar in performance to the HP DeskJet. Rather ungainly looking but has a nice control panel. Has option for tractor feed paper as well as optional second paper tray.



Fujitsu B200

Fujitsu B200 RRP £499

Much like the Projet (same paper feed options). Also offers 300 x 600dpi text printing and fax interface.



Hewlett Packard DeskJet 500

Hewlett Packard Deskjet 500 RRP £499

Probably the most successful inkjet of them all. Very good print quality, quite fast, simple to use. Heavily discounted in shops so good value.

Olivetti JP350 RRP £399

This is the father of the Citizen and Fujitsu (all based on HP's mechanism) and like them has super-speed draft mode (360cps). Also 300 x 600dpi text printing.

Driving test

Hard drives open up a whole new world of ST computing – provided they're used properly. Andrew Wright shows you how

I once read an article proclaiming that hard drives were the most unreliable part of a computer. Personally I have my doubts. Hard drives are no more or less reliable than any other piece of moving machinery – they just happen to be one of the most abused components and probably the least understood.

If proof were needed, the battered Atari Megafile in front of me, dating back to 1987, could testify to an awful lot of poor treatment.

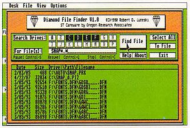
It has devoted years of service to *ST World* and *Atari ST User*, being shunted from desk to desk, hooked up to strange systems and taken home for the odd weekend.

Externally it couldn't have been more badly treated – and it bears the scars to prove it – but inside it works as well as it did on its first spin round.

No, I'm convinced it owes its longevity to its status – it has had a diet of software that would turn others green with jealousy, among which have been several hard disk management programs, good, bad and indifferent.

The best have remained on the disk, of course, and the result is a hard drive that will probably still be here in another six years time.

Buying a hard drive for your ST opens up a new world of computing power – not only can you access programs and files in a fraction of the time you could before, but you can have access to every program in your collection almost instantly. No more flicking through disk boxes for that half-remembered utility you know you've got hidden away somewhere! Hooking it up for the first time is a real thrill but the hardware itself is just the start. The real power of a hard disk comes from the software – the utilities to speed up access even further, to help you load and find programs more quickly, and help prevent trouble and keep your drive problem-free.



Shareware utilities like Diamond Find are needed to find the files that refuse to be found

The chances are that when you bought your hard drive, it was already formatted and divided up into several "partitions". This is a method of dividing a single hard disk into several smaller virtual hard disks, each with its own Desktop icon.

There are various reasons for "partitioning" – TOS 1.2 and earlier versions can only handle partitions up to 16Mb, so a 50Mb drive had to be divided up

Disk maintenance

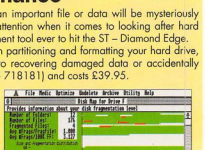
Sooner or later something will go wrong – you'll delete an important file or data will be mysteriously corrupted. There are two packages that deserve special attention when it comes to looking after hard disks. The first is without doubt the best hard disk management tool ever to hit the ST – Diamond Edge.

It is a single integrated utility that will do everything from partitioning and formatting your hard drive, optimising data and diagnosing bad sectors and faults, to recovering damaged data or accidentally deleted files. Diamond Edge is available from HiSoft (0525 718181) and costs £39.95.

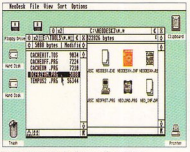
The second is the ICD Utilities. Until recently this was supplied only with ICD hard drives but it has nonetheless been available for downloading from some bulletin boards and online networks.

It is now available in a new version, ICD Pro Utilities, which works with any drive, not just ICD ones, and is fully compatible with the IDE drives on the new Falcon.

A working copy of the disk diagnostic program Cleanup is supplied too and the package is available now from System Solutions for £49.95 (0753 832212).



Diamond Edge, just the job for any hard disk



Replacement desktops like GST's Neodesk make hard drive management so much easier

into manageable chunks. TOS 1.4, however, can handle partitions twice that size, up to 32Mb and if you're lucky enough to own an ICD drive, the software will fool TOS and manage partitions up to a whacking great 512Mb, known as BGM (Big GEM) partitions. If you're doubly lucky and have that much room on your drive, that is!

Most hard disks bought from respected dealers will be partitioned when they arrive on your doorstep – most tend to have four equal-sized partitions and the Desktop is already set up with icons for drives C, D, E and F. Sooner or later though, the time will come when you want to change them.

PARTITION PROBLEMS

A single big partition sounds fine but in practice it becomes very hard to navigate around and file get lost. You can only use one window at a time on the Desktop to find programs and files and the file selector becomes awkward.

You'll find that having lots of small partitions brings problems too. Your disk might show 3Mb of free space but if it's divided among 12 partitions, not much of it will be immediately available.

Everyone has different needs and as far as disk performance goes, it makes little difference whether you use a single big partition or lots of small ones. Smaller ones are safer though, as backing up is easier, the operating system isn't likely to bomb out with manageable numbers of folders and files, and if one partition is damaged, at least you'll only lose some of your data.

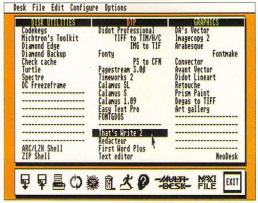
My own 60Mb hard disk is presently divided into five partitions, four for GEM and one for Spectre (not accessible to GEM). Drive C, the boot drive, is the smallest and contains accessories, an AUTO folder and some everyday utilities.

Drives D and E are large partitions holding programs and data files while drive F is another small one used for temporary storage such as de-archiving downloaded files and cover disks.

Another widely advocated strategy is to have one partition dedicated solely to data files and other files that regularly change. This makes backup much easier but it needs a lot of effort to make it work.

Hard disk backup used to be a real chore but with the right software it takes hardly any time at all. Why back up a hard drive? The main reason is to prevent loss of data if the worst happens.

Hard disks can and do crash, sometimes without warning. Power surges can corrupt parts of a disk, especially if they occur when data is being written or the FAT is being updated. A careless knock can crash the disk heads against the platter with catastrophic results.

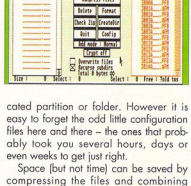


Utilities like System Solutions' Hotwire save you hunting through folders to load your programs – a boon for hard drive users

More than likely, though, the operating system will simply get confused and write one file on top of another, or a partition will get so fragmented with constant use that an important file cannot be recovered.

There are several methods of backing up a hard disk. Not all files have to be backed up, of course, as most of the original programs will be on floppy disk anyway. The time-honoured method is to copy all the important files directly on to a stack of floppy disks.

This isn't as difficult as it sounds, especially if most of them are kept in a dedicated partition or folder. However it is easy to forget the odd little configuration files here and there – the ones that probably took you several hours, days or even weeks to get just right.



ZIP – soon to become a standard on the ST, if I'm not mistaken

Space (but not time) can be saved by compressing the files and combining them into archives first, using a program like LZH, ARC or ZIP. ZIP is by far the best and its friendly GEM interface takes all the strain. What's more it's free, or to be more accurate, postcard-ware, which means you have to send the author a postcard if you use it.

Once you've seen it compress a 4.5Mb colour TIFF file into 50k, the price of a stamp will seem extraordinarily good value.

The alternative is to use a dedicated backup utility that automates the process as far as possible.

What follows overleaf is a selection of hard drive management programs of various types which I believe to be perfect examples in their classes.

➤

Jargon buster

ARCHIVE BIT

A feature of TOS 1.4 and later operating systems. Each file contains an archive bit which is set whenever that file is changed.

Most backup programs will read the archive bit and if it is set, automatically mark that particular file for backing up.

BOOT SECTOR

The boot sector, always the first sector on a disk whether it's a hard disk or a floppy, contains critical information about the nature of the partition or disk in question. For example it includes the number of FATs, number of sectors per track/cluster, total sectors and the number of root directory entries.

FAT TABLES

The File Allocation Tables or FATs are used to store information about what space files use on a disk and where they are. Each disk, hard or floppy, has two FATs as a precaution against one being damaged. Programs like Diamond Edge will save FATs on a regular basis so that restoring damaged data is made easier.

FRAGMENTATION

When files are repeatedly copied, moved and deleted on a disk or partition, many of them will become fragmented, that is spread across non-contiguous sectors on the disk. Fragmentation slows read and write operations down considerably and can result in lost files if not "treated".

FULL BACKUP

The program copies every file in the path or paths specified by the user, no matter what type of file it is.

INCREMENTAL BACKUP

Once a disk has been fully backed up, any files which have changed since the full backup will be backed up again when incremental backup is selected and any new files which have appeared in the specified backup paths will also be included. Incremental backups can be controlled either by system date or the archive bit.

OPTIMISATION

This is the process of re-ordering files on a disk or partition so that they are all placed in consecutive sectors, usually ordered by directory, so that the operating system doesn't lose track of them and access is faster.

Incidentally, if you back up a drive and then restore it again, the drive is then optimised – unless you use image backup methods.

An alternative method, of course, is to back up the whole of the disk's largest partition, delete it and then copy the others around one by one, ending by restoring the backed up partition.

How a hard drive works

Hard disks are so called because they are rigid platters made of specially coated metal that rotate over fixed heads. The heads ride on a cushion of air and never actually contact the platter itself. If they do, it's called a head crash and it usually results in data being damaged beyond repair

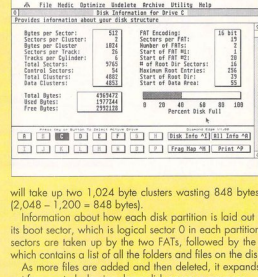
The ST is linked to the hard disk through the DMA port and communicates using a protocol called Atari Computer Systems Interface or ACSI. This is very similar to the Small Computer Systems Interface (SCSI), the industry standard.

As a result of the differences, SCSI drives need an ACSI-to-SCSI adaptor, which slows down the drive slightly and adds to the cost.

Some older hard drives such as the Atari Megafiles use the MFM or RLL system, necessitating a second adaptor to translate RLL or MFM disk handling instructions to SCSI. This partly explains their poor performance and high cost.

The basic unit of storage on a hard disk is the sector, which is normally 512 bytes. Physical sector 0, the very first one on the disk, contains detailed information about how a drive is partitioned.

However, the operating system deals in clusters (two sectors) as the smallest available unit. Each file is allocated as many clusters as it needs for storage but any spare space left over will be ignored by the operating system. For example, a file you know to be 1,200 bytes long will take up two 1,024 byte clusters wasting 848 bytes of disk space (2,048 – 1,200 = 848 bytes).



Diamond edge displaying full partition information

Information about how each disk partition is laid out is contained in its boot sector, which is logical sector 0 in each partition. The next few sectors are taken up by the two FATs, followed by the root directory, which contains a list of all the folders and files on the disk.

As more files are added and then deleted, it expands but it too can get fragmented, slowing down disk access even more.

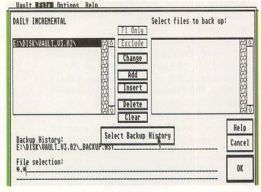
THE VAULT

The Vault is a PD backup program with a GEM front end and plenty of options which can be selected from the menu bar and dialogues. The menus are simple and easy to work out, which is just as well as the supplied documentation isn't particularly good, despite an online help facility. The Vault also has a partner program, The Key, which restores files back to the hard disk.

The full range of options includes full or incremental backup, splitting large files onto separate disks, formatting disks during the process, and intelligent file copying to fit as much on a disk as possible.

There is no file compression so you need to have plenty of spare floppies handy but disks can be formatted up to 83 tracks and ten sectors, both skewed or unskewed.

While undoubtedly slow, The Vault is flexible enough for most users' needs and good at restoring individual files as and when needed. It's also free (try Goodmans PD library asking for disk GD1187), which is as good a reason as any for trying it out these days.



Opening the vault – despite its sluggishness, I quite liked this one

disk and copies files from the hard disk into the RAM disk.

There is no compression facility. When the RAM disk is full, it writes the contents to a floppy disk track by track.

This method of operation has some advantage in terms of speed but all the floppy disks have to be formatted in the same way, which means that in practice you have to have a dedicated set of backup disks.

It is also relatively inflexible in determining the files to be backed up. You can back up a whole partition, a single folder or nothing.

Turtle is certainly fast and more cost-effective in terms of disk space than The Vault, but its inflexibility is a big turn-off.

HD TURBOKIT

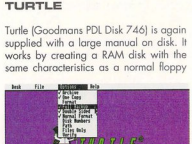
The HD Turbokit is an old Michtron product that offers some useful utilities at a bargain price. The backup utility is just one part of the Toolkit program that offers drive information, statistical analysis and optimisation too.

The Michtron backup routines include full and incremental backups and three types of backup. The very slow file backups can be read as normal which makes it easier to subsequently retrieve individual files. The other two formats are image backups and these are much quicker though very inflexible.

I wasn't particularly impressed with the backup facilities but the toolkit does offer other useful utilities such as disk optimisation and a disk cache program. At £4.99 from Ladbroke Computing (0772 203266), you can't go wrong.

TURTLE

Turtle (Goodmans PDL Disk 746) is again supplied with a large manual on disk. It works by creating a RAM disk with the same characteristics as a normal floppy



Turtle, the rather hideous opening screen conceals a most unfriendly interface but nonetheless it's useful little backup utility

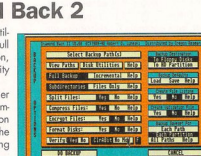
Diamond Back 2

Diamond Back II is a completely mouse-controlled utility with a comprehensive list of features, including full and incremental backup, optional data compression, support for Mac/Spectre partitions and high density disks and the ability to save configurations.

Diamond Back can back up to floppy disks or other partitions if necessary, either compressed or uncompressed. The nice thing about the compression option is that the compressed files can still be viewed on the backup disk although they have to restored using Diamond Back itself.

Diamond Back also contains other useful functions such as file finding, data encryption annd viewing text files. The ability to save configurations means that on subsequent backups you can recall the list of paths and use the same mask to repeat the backup (perhaps doing an incremental backup on subsequent occasions).

If you've got a hard disk with any data worth saving, Diamond Back 2 is the only sensible option. It's fast, it's flexible, it's full of features and the manual is excellent. It's available from HiSoft (0525 718181) and costs £39.95.

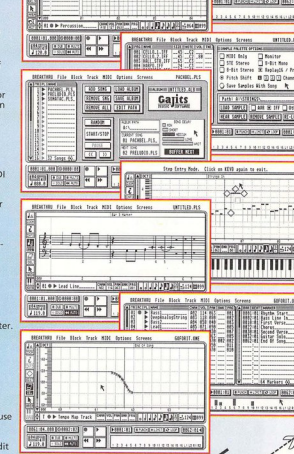


Diamond Back – fast and flexible, with scores of options

BREAKTHRU

Q What should you expect to pay for a 16-bit sampler, advanced sample editing software, and a powerful 64 track sequencer?

New from Gajits and Audio Visual Research; a low cost 16-bit hardware and software combination for the Atari ST range. It could transform the way you make music...



Breakthru is a 64 track professional quality MIDI sequencer with a difference. At the same time as it plays your MIDI instruments, Breakthru will play back 16-bit samples through a Replay 16 sampler plugged into your Atari computer! (If you don't have Replay 16, Breakthru can play samples through your monitor or TV speaker, through the computers' DMA sound output sockets where available, or through the Microdeal range of 8-bit sample cartridges.)

In fact, Breakthru is a MIDI sequencer, a sample sequencer, or both at the same time! Add to that a host of highly graphical and user friendly editing screens, unique and innovative features like Gajits' Diamond Drag note editing system, and an ease of use which might surprise you if you've not used Gajits' software before, and you'll see why we called it Breakthru!

For Atari ST/STE/MegaST/MegaSTE/TT Computers • Mono and Colour Screen Modes Supported • Minimum 1 Mbyte RAM Required • Up to 4 Sample Channels With Stereo Output Where Supported by Hardware • Sample Output Via AVR Replay 16, Pro Series 12, Microdeal Mono & Stereo 8-Bit Cartridges (eg. Replay & Playback), Atari PSG Sound Chip, or Atari DMA Stereo Sound Chip • Real Time Pitch Shifting of Samples According to Note Value • 16 MIDI Channels (32 with Breakthru Plus) • VU Meter Style Channel Display • 64 Music Tracks Plus a Control Track • High Resolution Real Time Recording From MIDI Instruments (1/192 PPQN) • Loop Mode, Overdub & Punch-In/Out Recording • Simultaneous Multi-Track Recording • Auto Count-in Facility • MIDI or Audio Metronome • Step Time Recording of Music Over MIDI or Using Mouse Entry • Track & Cue Sheet Screen (64 Tracks/64 Cue Points) • Sample Palette Page (Loads AVR, IFF & Other File Formats) • Step Editor Screen with Diamond Drag Note Editing ("... by far the easiest grid edit system I've seen..." Ian Waugh, Music Technology review of Gajits' Sequencer One Plus) • Insert Program/Volume/Pan/Control Changes Graphically at Any Point • Score Editor Screen for Conventional Music Display • Drum Editor Screen for Easy Drum Programming • Song Arranger Page • Tempo Map Screen for Graphical Display of Tempo Changes • CD Juke Box Screen for Chaining of Separate Songs • Flexible Quantize Options to Improve or Fully Correct Timing • Many Different Types of "Global" Operations (eg. Transpose, Strip) • Sends & Responds to MIDI Clock & Song Pointers (External Sync) • MIDI Filtering & Re-Map Options • Imports & Exports Standard MIDI Files for File Exchange with Other Programs • MIDI System Exclusive (Sys Ex) Handling to Backup Instrument Memory • Undo Last Operation Facility • Keyboard Shortcuts for Many Options • Supplied with a Selection of Pre-recorded Samples & Demo Songs • Telephone Helpline Support Included

Breakthru Plus has all the features of Breakthru, but supports 32 MIDI channels instead of 16. Very handy if you have more than one MIDI instrument! A hardware interface is included with the package to provide an extra MIDI output socket. This simply plugs into the serial port of your computer.

If you are a registered user of Sequencer One Plus, you can obtain a substantial discount off the price of Breakthru or Breakthru Plus (see the order coupon).

Replay 16 from Audio Visual Research and Microdeal represents a giant step forward in sampling technology. It plugs into the cartridge port of your Atari, turning your computer into a 16-bit sampler and sample replay unit. Unlike dedicated samplers, Replay 16 makes use of your computer's built in RAM, so it costs considerably less than its nearest rival. Replay 16 comes with all the sampling and editing software you will need to record samples at rates of up to 48 kHz (higher than CD!). You can record samples direct from a CD player or other sound source and then edit them with the most versatile software you can buy. A phono output socket provides a standard connection to a wide range of sound systems.

"If MIDI and sampling's your thing, this is a must." Clive Parker, ST Format.

A See coupon or call the number below.

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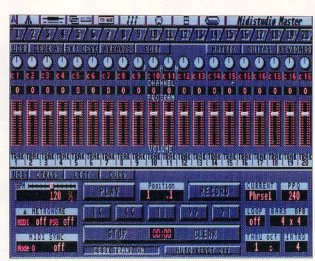


Involved mixing on-screen becomes a perfect possibility

Although referring to music using numbers may at first seem disconcerting, it does get easier

Jonathan Maddock takes a squint at a recession-beating sequencer, Ladbroke's Midistudio Master

Money's too tight

Times are hard. Money is definitely too tight to mention. Jobs are virtually non–existent. So if you've a interest in music and fancy making a career out of your hobby, you'll need a plan of action.

The first thing you need is equipment. This is a major problem especially if you can't afford it. If you own an ST, then you'll need to utilise it in the best way possible.

What every half–decent musician needs is a Midi sequencer – unless you're a one-man band. Midi sequencers don't come cheap. One of the better packages on the market until recently was Midistudio Master, but unfortunately until now it cost a penny short of a £100.

Luckily, it's back and this time it only costs £20. Can you believe it? I bet you're suffering from shock – well sit down and I'll explain.

You might think that it's not the same package and it must be a rip–off. You'd be right! It's not the same package because over 30 enhancements have been added to it.

I've heard of good deals on software, but this one beats everything else out of sight. A saving of £80 for a better and improved Midi sequencing package – it's a bargain and no mistake. Ladbroke Computing must have a whole toolbox of screws loose.

BEAUTIFUL MUSIC

Well that's enough enthusing about the bargain price because none of that matters if the package is rubbish. Let's take a little look at Midistudio Master and see if we can make beautiful music together.

Ladbroke's original Midistudio was released way back in 1988 and was very reasonable and quite cheap to boot. In March 1992, instead of updating the program, Ladbrokes decided to totally rewrite the whole thing and enhance it as best they could.

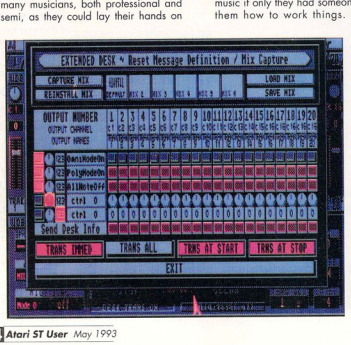
The programmers interviewed as many musicians, both professional and semi, as they could lay their hands on to see what their opinions were on sequencers for the ST and what sort of features they would like to see in such a program – things like the song being a number of tracks playing simultaneously with a range of features so that the musician could control each track individually.

They also said that Midistudio Master had to be "the easiest bloody program to use on the market, or we won't touch it". So the programmers set off incorporating these ideas in their new sequencer, not forgetting to make it easy to use. Several months later, Midistudio was re–born.

It is understandable why some people find music totally confusing. Such people would probably make amazing music if only they had someone to show them how to work things. OK, they might be able to play a spot of Bach on their keyboard, but when it comes to using the computer to sequence it all together they get frustrated and mess it all up.

This is where Midistudio Master comes into its element, because although it's quite a technical program, it's very easy to use. This is practically all down to an extremely helpful manual which quite literally talks you through all the different elements of the program.

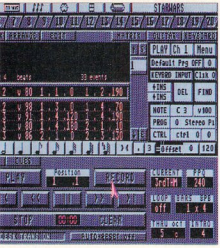
You could sit a complete beginner



Versatile Midi controlling going on at the very heart of Midistudio Master

At-a-glance features

- 240 PPQ resolution – the resolution dictates how accurately the sequencer follows what you've played. 240 PPQ is a decent rating.
- 100 track storage, 20 tracks can be played simultaneously
- Real-time mixdown using the mixing desk and mouse
- Full compatibility with Midi Standard files, allowing you access to hundreds of cheap Midi songs
- Full support for GEM menu accessories
- Extensive control over the full range of Midi parameters



down at the ST with absolutely no musical talent whatsoever and they could still manage to get a tune out of it. Experienced musicians don't be put off though, because although you probably know everything (or you think you do) it's still better to work your way through the manual.

There are probably some parts that you can skip over, but I can guarantee if you work through it you'll learn something and so get the very best out of the

the result. Up to 100 phrases can be used in a single song.

Midistudio Master has 100 tracks, but you can only play 20 back at the same time. However, this will be more than enough for your average musician.

Graphically Midistudio Master is quite impressive, especially the mixing desk, which gives the program that realistic studio feel. Yes, you too can be one of those highly-paid record producers and twiddle about with dials and knobs all day!

CONTROL SYSTEM

The desk itself contains 20 sliders, one for each track, which are used to control and record the volume in real–time. It also contains stuff like program numbers, Midi channels and transpose buttons, and lets you select which 20 tracks you want to play.

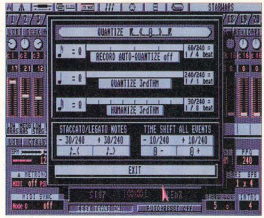
The whole control system can be accessed via the menu bars, but when you finally get used to the program and know where everything is you will start to use the keyboard. You will then be able to bring up your different desks just by the stab of a key.

There are two different ways in which you can record your music. You can either play your keyboard and record in real–time or you can record in step–time either from a Midi keyboard or from Midistudio itself.

Midistudio Master is one of those programs which you can sit down and plan to use for half an hour, but find yourself using for the best part of a day. You can spend hours fiddling about with your tune and you'll quickly find yourself totally immersed in your very own music.

The program is full of interesting little features. One of these is the ability to run other programs directly from disk without having to quit back to the GEM Desktop.

So, what you're almost doing is multitasking, but be warned because not every program will like it and might crash out your ST. The most important lesson is obviously to save your work



The all-important quantise function in use

and back up whenever you can.

Another handy feature is the ability to define the length of the song and let the program find a tempo to fit it.

You can also use modules. These are similar to accessories and are loaded on the running of the program, which interacts with them through a programming pipeline. It allows musicians who are short of memory to decide what extra functions they do and don't need.

SHEER VALUE

There are plenty of other features of course, but far too many to go into detail about here. Overall Midistudio Master is the perfect music sequencer for the musician on a budget. For sheer value alone you can not afford to pass up on this package.

It's packed full to the brim with helpful features, not to mention the impressive desk feature with its 20 sliders. Even the most experienced musician has to be impressed.

Midistudio Master is a beginners' dream. The helpful and sometimes quite witty manual is an important part of the package and will tell exactly how to record your music step by step.

For all but the most demanding professional uses and users, forget your Steinbergs and Cubases. If you've got any sense whatsoever you'll get this package. I mean how can you complain at the price?

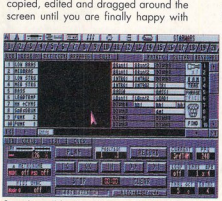
to mention

package. The instructions are set out very simply and have obviously been written by someone who has already gone through the hassle of making music with a Midi set–up.

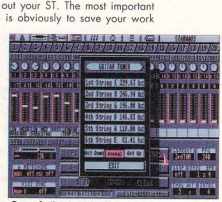
You are taken through how to actually use the software, how to connect everything up, taught what a song is and told what terms like quantise and transposing actually mean.

Unlike most sequencers, which record music lines on individual tracks, in Midistudio Master you record a number of phrases which are then in turn assigned to tracks.

These phrases can be as short as one beat or as long as 68 bars. Once you've recorded your phrases then you play around with them. They can be copied, edited and dragged around the screen until you are finally happy with



Complex editing functions make song construction a doddle



Some features go beyond the call of duty!

BOTTOM LINE

FEATURES
The impressive features make expensive sequencers look rather poor.
Excellent / Good / Average / Bad / Appalling

EASE OF USE
Perfect for the beginner thanks to the incredibly helpful manual.
Excellent / Good / Average / Bad / Appalling

VALUE FOR MONEY
How can you possibly complain? An astounding bargain and no mistake.
Excellent / Good / Average / Bad / Appalling

Product: Midistudio Master
Supplier: Ladbroke Computing International, 33 Ormskirk Road, Preston PR1 2QP
Telephone: 0772 203166
Price: £19.99
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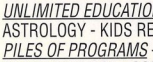

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N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existance which may require a little soldering.

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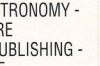

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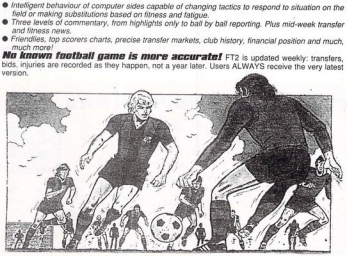

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Getting it right!

Atari need to sell the Falcon to the public. To do this they might try advertising. Other companies such as Commodore have used this novel concept in the past with some success.

The Falcon looks like an amazing piece of kit – fast, advanced and multi–purpose. The Amiga 1200 has a large software library and it is well supported by manufacturers of software.

The Amiga is not dying as quickly as the ST seems to be doing, although the Atari machine is more than a console with a keyboard and is cheaper and less pretentious than the PC.

Why don't Atari undertake to produce at least one software title per month? Maybe even a few leisure programs – games even? No–one will buy a computer that has no software.

A trade-in deal might be the answer. Old STs for new Falcons, maybe £100 off the Falcon price. The old STs could then be sold on with the software to first-time computer buyers.

This would enable new users to start off with something other than a console and most importantly shift Falcons. Well there's my ha'penneth.

A Fortune, Midway

Last year Commodore ran a very similar offer to the one you suggest, aimed at encouraging Amiga users to upgrade to the CDTV. As far as I know it was fairly successful.

An incentive of this kind won't solve all the problems facing Atari as they encourage ST users to choose the Falcon rather than a PC or Apple Macintosh, although it can only help.

I doubt that the second-hand STs could be resold very easily, especially since Atari have announced their new plans to sell 520STFMs for £159 (see news story this issue).

Demo designer sought

I own an Atari 1040STE and have recently been to a computer fair near home, where I saw a few demos on the ST such as the KLF and Acid.

I decided to look around for a package which would allow me to make my own demos, but I had no luck. Could you help me on my quest?

I am looking for a package where I can mix moving graphics with music, but it will need to be as cheap as possible without being rubbish.

Lee Swift, Merseyside

Microdeal have released a package called Video Master, which received the thumbs up when it was reviewed in the February issue of Atari ST User.

Falcon in print

I am going to buy an Atari Falcon in the near future and would like to start buying a dedicated Falcon magazine as soon one becomes available.

Your company has always provided the best magazines for Atari computers, and is not just a games rag.

As soon as you have one available I would like to know and subscribe to one. Could you please mail me details of any plans you may have for such a magazine?

Paul Crawford, Alloa

We plan to include all the latest Falcon developments in Atari ST User. A sufficient user base will have to form before you will see any Falcon-specific magazines.

Got anything to say to the ST community? Then send your scribblings to:

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Delays hit Sweden

I just want to tell you what it's like here in Sweden. As a subscriber of your great magazine, *Atari ST User*, I can every month look forward to discover it in my mailbox around the 20th.

The last issue was delayed. I don't know if it depends on you or if it depends on the British or Swedish post organisations, but it didn't arrive until February 12.

Then I was sad to see that the Microdeal "Big Sale" advert read that the closing date was January 31, 1993. That was two weeks ago!

If the magazine had arrived around the 20th, as usual, I could have bought this Stereo Master sound sampler and Quartet for around 20 per cent of the price in Sweden!

Well, I guess it's too late now, but I don't really want something like that to happen to me again. Anyway who wants a 8–bit sampler when you've got a Falcon?

So, please, try to get the magazine to your non–British subscribers in time. We've paid you for that, haven't we? We all do want the same possibilities like the British readers.

I'm sorry if there are some faults in my English, but as you now know I'm Swedish and we're better in our Swedish language here, I believe.

Now let's just hope that your not one of those papers who doesn't listen to your readers. Bye! Keep up the good work!

Aron Ernvik, Sweden

Unfortunately, there isn't too much that we can do. As soon as the magazines have been printed, they are sent to our subscribers

First Falcon impressions

£25 Prize Letter

I was so impressed with the Falcon at the International Computer Show that I bought one from, of all people, HiSoft.

The bad news is that the price had gone up by £100, so my 4Mb memory/65Mb HD machine cost me £999. This does not bode well for Falcon sales considering that ST games will not run on it.

However it has impressive potential and the fact that better DOS emulators will soon be available for it has dissuaded me from spending my money on an IBM PC.

I thought you might like to know my initial impression of the Falcon.

The games that come with it consist of Breakout and Landmines, which hardly make full use of the Falcon's capabilities. Where are Audio Fun Machine and System Audio Manager?

Breakout has a McEnroe–like voice which shouts out "Game over man!" and when you move its window to the edge of the screen a female voice tells you to move it back to the centre.

There is also a talking clock, but it has a two–second update.

The good news? It really is a wonderful machine. How nice it is to be able to run a program from the Desktop just by pressing a function key, or to display files/icons *à la* NeoDesk!

Mine came with MultiTOS, which works.

ST programs which run on it will run very much faster. I spent a happy afternoon changing fonts/sizes using FSP3 and Calligrapher, just to watch the fast on–screen updating.

First Word Plus also runs, but not its spelling checker.

The manual is well–written and informative, but some Atari hard disk utilities mentioned are not provided, in particular SHIP.PRG which is necessary for parking the IDE hard drive heads.

Alan Chin, Co Antrim, N Ireland

We feel the recent Falcon price rise – which puts the 4Mb machine within £100 of an Apple Macintosh with colour monitor – is unfortunate and will damage the machine's sales potential.

And the software bundled is a marketing disaster. First impressions last, and most people will get theirs from these games – Breakout could be played on Uncle Clive's old ZX81.

But, as you are finding, the Falcon is fast and packed with new technology. Let's hope it becomes the success it deserves to be.

***by post. It is inevitable that overseas readers will receive copies later than those in Britain, and this is a problem with all publications and newspapers not just* Atari ST User.**

The closing date for competitions and other reader offers is usually the last day of the cover month, so for example February's offers would have a deadline of February 28.

Company credit

I have always believed in giving credit where credit is due, which is why I am writing this letter. The company in question is ACS Electronics of South Shields.

About six months after buying a multisync monitor from Gasteiner Technologies it developed a fault with the on/off switch, in that I was unable to turn it off.

I realise that the monitor was still under warranty, but if I had sent it back to Gasteiner I would have had to pay for the delivery, and this monitor is no lightweight!

I also wanted to avoid sending it away, as I expected it would leave me monitorless for the best part of a week.

I took it to a local company who declared it was a non–standard on/off switch, and after looking through their parts catalogue said I would have a hard job getting a replacement.

Then after reading through your magazine I found an advert for ACS Electronics, which I remembered that you also recommended in an earlier issue.

So I took my monitor to them and within 24 hours it was ready to be picked up. So a big thanks to ACS. I hope you are able to give them a well deserved mention in your magazine.

Tony Brown, Northumberland

And we would like to say well done to all the other companies that give our readers a similar standard of service month after month. We don't have space to print all the letters we receive each month, but the good firms will know who they are.

A previous record

Oh boy, what have Atari done now? If the reports are true and the STE has been axed, this could be a disaster, but given Atari's track record with the STE, should we really be surprised?

Let's take a look: A false start followed by a complete indifference from Atari themselves. Did they push the software houses to write STE-specific programs?

Did they even produce games/programs of their own? Did they bother to cultivate relationships with the games houses? No.

What they should have done is commissioned games for the STE, much like Commodore have with the CDTV.

Yes, I know CDTV has bombed so far, but I've seen the Psygnosis demos and believe me, when the finished games are here, people will buy CDTV just for them!

However the real *coup de grâce* came with another false start, the announcement of the Falcon. Now we all know that the Falcon is a world beater, but we are still waiting.

What's more because Atari didn't re–position the STE while announcing the Falcon, I imagine that sales dropped right through the floor.

Don't they realise that with insight and imagination – and a little software commitment – they could of re–positioned the STE as the C64 of the 90s? What a wasted opportunity!

I have to admit I've defected to a certain extent to the Amiga, having bought an A1200 recently.

Yes, it's a good computer and yes, the games, music and video are brilliant, and yes I know the Falcon is better – but the A1200 is here now and it's stable.

I will however be buying the Falcon, just as soon as I'm convinced it is a stable product. Yet, for all the A1200's power, I prefer to use my STE for business matters.

Most of my computer pals were convinced that once I'd bought the A1200 my STE would be phased out, instead I find that this 32–bit super machine is still a pig in areas that are necessary for business use.

So my STE will stay. Yes I actually prefer my 16–bit, old technology STE to the brand new 32–bit A1200 in some areas!

Despite what Atari may think, they've shot themselves badly if the STE goes.

You yourself may argue that the 16–bit technology has had its day, but just look at all the ST products on the market, the vast majority of which are not compatible with the Falcon.

Loads of hardware and professional software support just about to be wasted. Look at the 8–bit C64 which still generates income for CBM, income Atari need to survive given their recent losses.

If the Falcon is intended to replace the STE, why didn't Atari build in a chip emulation system like Commodore have on the A1200?

To completely drop one range of computers for another that has not even got to the shops yet is madness!

So, if anyone at Atari is reading this, don't do it! The STE, despite its age, is still a great computer. It just wasn't supported enough, but it's not too late.

Re–position it, cultivate some support, and add compatibility to the Falcon – for at least 60 per cent of STE games and programs for goodness sake – and voilà!

You have the perfect entry level home computer to completely stitch up the CBM A600. C'mon Atari, you are running out of chances.

Darren Smithson, Berkshire

Even though STE production has ended, it must be remembered that there are many machines still in shops and distribution warehouses all over the country.

These will last for some time and it would be possible for Atari to restart production in the future if there was sufficient demand.

The production facilities are now used to build Falcons, and at this time it is important for the firm to concentrate on getting these computers out to enthusiasts.

I'm sure Atari would have done their best to encourage games software houses to develop titles for the STE, though most favour Commodore machines.

This month Atari have announced they will be selling 520STFMs at just £159.

The computers are not state-of-the-art technology but at this price they can steal some of the booming console market, providing they are marketed correctly.

ATARI ST USER

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Nowadays piracy has more to do with high prices than high seas, but its effects are sinking the ST software industry. Ofir Gal investigates a cut-throat world

Software piracy is the technological age's equivalent of shoplifting, but because it is much easier to copy a disk in the privacy of your home than to steal from a supermarket, piracy has reached such levels that it is now discouraging software developers from embarking on new and much needed games and programs.

There is a commonplace perception that it is OK to give a friend or two a copy of a program or game you have just bought. Well this is wrong for several reasons. First, you are breaking the law if you do and while the chances of being caught are small, it is still illegal. The second reason is rather more complex...

MORAL PROBLEMS

We all agree that stealing is wrong, yet we do not feel that copying a disk is stealing. The advance of technology is presenting us with moral problems faster that we can cope with them and software piracy is just one of them.

Never before in the history of mankind was it possible to rob someone of his property by cloning it. The legitimate owner of a program, does not feel any immediate loss when he makes a copy of it to give to a friend. This is a totally new concept which many users currently abuse...

Illegal copying of productivity software is estimated to cost the software industry more than £2 billion in Western Europe. For every legally used program in the UK there are two illegal copies, the figures for other countries in Europe is even worse. In Italy, only 18 per cent of software in use was actually paid for.

A recent MORI survey shows that 55 per cent of senior managers using computers at work copy software illegally, either knowingly or not. It is more difficult to estimate the scale of piracy with home users. The games market in the UK is also severely hit by software theft – it is theft after all – with estimated losses of £75 million a year. But what does it all mean to us end users?

The Atari ST with all the good things that can be said about it, is not the most popular computer with a rather small user base, which means that sales are not very high. Programmers and software companies are moving away from the ST to the PC or Mac because of the small market ST products have.

You may have noticed that it is getting difficult to find new games for the ST. The European Leisure Software Publishers Association say that while ST users are no worse that other computer users, software piracy has a profound effect on the willingness of software publishers to invest in new games for the ST.

The number of PC users is much higher, so even if two-thirds of sales are lost to piracy, the income from the remaining third is enough to justify investing time and money in development of new games.

Because the number of ST users is much smaller, software publishers just some users from giving copies to friends.

Whichever method of protection is used, it is always an inconvenience to us users. If it is disk-based protection you have to put up with "Please insert master disk into drive..." messages.

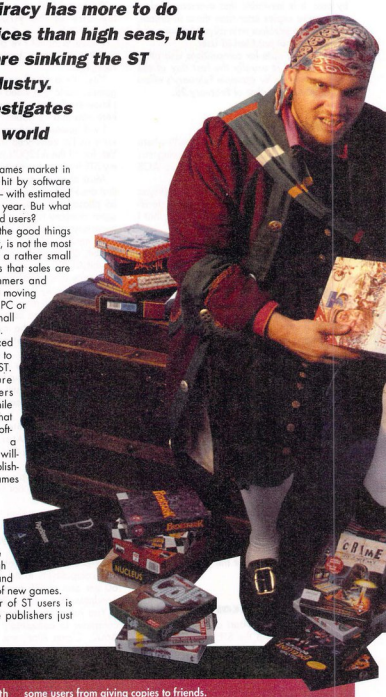
Some programs like Cubase and Notator use hardware "dongles" which plug into the cartridge port to prevent piracy. This method is quite successful in stopping piracy but means that you have to keep inserting and removing cartridges which cannot be done while the computer is powered up.

The only alternative is getting a cartridge expander which will set you back by at least £100 – a price the legitimate user is paying for other less honest users.

There are also problems reading the cartridge port if your ST is running at 16MHz as is the case with the Mega STE or other modified STs and one would expect even more problems with the new Falcon.

Piracy of course means that prices of games and productivity software are much higher than they should be. Another common misconception is that software publishers are extremely rich companies.

This may be true of companies like Microsoft, but is not the case with most, if not all, ST programmers and publishers. In many cases programmers have to keep a day job while programming has to become a "hobby". There are very few programmers working full time writing ST programs.



What is being done?

FAST (Federation Against Software Theft) and ELSPA are both campaigning to give software publishers more legal powers when copyrights are violated. ELSPA has confiscated pirate copies to the value of £1 million over the last three months.

They are most concerned with "professional" pirates who illegally sell copies of games in car boot sales and street markets all over the UK.

When they do find the so called pirates, they take legal action against them and inform the Inland Revenue about their activities. Both organisations raid offices and schools on a regular basis and confiscate illegal software.

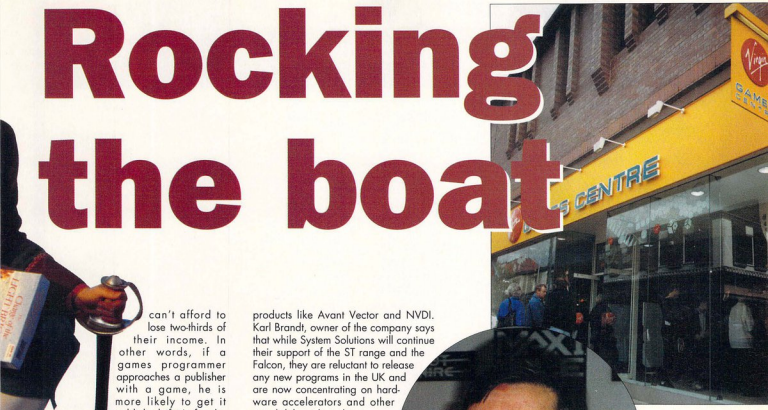
Only last year 200 such raids took place in businesses around the country. FAST have never lost a court case – if you're caught you stand no chance.

In Germany, one company tricked illegal users of their program by distributing an "upgrade" patch for the program. The patch would search for unregistered copies and if found displayed a message "You have won the 1st prize... please phone us".

When illegal users phoned and gave their names and details their were told that they have one of two options – either pay for the program or go to court. Most users chose the first option...

Various anti-copying protection schemes are likely to become even more popular than they are at present in the hope of stopping at least

Rocking the boat



Games: £75 million piracy loss each year

can't afford to lose two-thirds of their income. In other words, if a games programmer approaches a publisher with a game, he is more likely to get it published if it's for the PC, and most unlikely if it is an ST game.

As a result, the ST games scene is on the decline. According to ELSPA's figures, if all ST users legally bought their games, this trend could be reversed in no time.

The ST of course is not all about games – many owners use theirs for wordprocessing, desktop publishing and Midi. All these areas are also severely hit by piracy.

Productivity software requires upgrades and updates, telephone helplines and printed manuals in addition to the cost of developing the programs. HiSoft for example, is one company committed to supporting the ST and is now developing programs for the new Falcon.

RESEARCH SPENDING

David Link, owner of HiSoft, says that typically, about 20 per cent of turnover goes directly back into research and development. Other industries only invest between five and ten per cent in R&D. HiSoft's version of Basic required almost six man years of development, not to mention the cost of documentation and packaging.

True Paint, their latest offering and one of the very first Falcon programs to appear on the market, took almost two man years to program. This means that for every pound you spend on software, 20p is invested back into improving the program and creating other even better programs.

System Solutions are another UK-based company dedicated to the Atari ST and have brought us high quality products like Avant Vector and NVDI. Karl Brandt, owner of the company says that while System Solutions will continue their support of the ST range and the Falcon, they are reluctant to release any new programs in the UK and are now concentrating on hardware accelerators and other non-disk based products.

MOVING AWAY

He paints a dark picture of the ST software market and says that many programmers are moving away from the ST and gives as an example Cyber Studio, an animation package, which is no longer available for the machine.

Mr Brandt believes that the scale of piracy is even higher than FAST's figures. He also says that the trend in Germany, which is the source for most of his products, is to develop software to accompany hardware products such as Overscan and the new Screenblaster. System Solution are now holding back the release of at least two exciting and unique programs for the ST mainly because of piracy – software just doesn't sell enough to justify translating the manuals.

Brandt: Concentrating on non-disk based products

Their hardware products which include graphics cards and modems are doing very well in contrast.

What can you do?

There are many benefits to buying your software from a legitimate dealer. You are able to use the helpline and you get a manual, so you can get the best out of the product. A legal package can be sold if you have no more use for it.

By paying for your games and programs you are ensuring that there will be upgrades and more products next year – an illegal user will not be able to benefit from upgrades anyway.

There is much the individual user can do to help the ST software market out of its decay. To start with, you can go through your disk collection and delete any pirate copies of games or programs if you have any. If there are disks you would like to keep, why not buy them?

Don't buy software in car boot sales and markets unless it is in its original packaging and don't be tempted to give copies to your friends. Remember, using unregistered shareware products is also illegal and discourages the authors from creating more programs, and where would the ST be without shareware?

If you see any pirate software in school or at work, inform whoever is in charge and insist that the software is either legally bought or removed from the system.

Encourage friends to do the same and maybe we will be able to reverse the trend and show other computer users that ST users are true supporters of their computer.

If every user does his bit we will see more and better programs for our favourite computer and hopefully lower prices as well.

If we don't, we will have to take responsibility for the decline and eventual death of the Atari ST. All we will be left with will be obsolete grey boxes...

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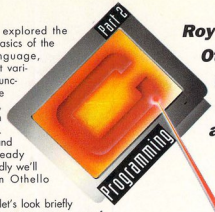


It's black and white!

Roy Stead demystifies Othello with the help of some arrays, strings and pointers

Having explored the very basics of the C language, finding out about variable types and functions and the printf() function, we can move on to better things. Firstly, we'll expand on what we already know, and secondly we'll start writing an Othello program.

To start, then, let's look briefly at arrays. An array is just a sequence of a fixed number of thingumabobs. Each thingumabob is the same type of thing as all the others, and all of the thingumabobs are stored next to each other in memory.

That last bit might seem a bit obvious, but take note of it now and we'll come back to it later.

DECLARING ARRAYS

An array is declared, in your C program, much like any other variable would be declared. You give the type of thingumabob you want to store in your array, followed by the name of the array and a number – in square brackets – which tells the compiler how big your array is to be – that is, how many thingumabobs you want to store in it.

For example:

```
int hagbard[23];
```

Declares an array of 23 ints, called hagbard. If you want to initialise your array when you declare it, then list its initial contents in braces (curly brackets), with each element separated by a comma, like this:

```
float foo[5] = { 1.0,
2.0, 3.0, 1.342, 1.7 };
```

It is up to you to make absolutely sure that the number of elements listed matches the number in the square brackets, though you may come across C source code where the number in square brackets has been missed out altogether.

This is because many C compilers automatically work out the size of the array by counting the elements listed. Hisoft C, however, will not allow you to use this kind of short-cut, and so you must use the above syntax with the package.

VARIABLES

To make use of the individual elements of the array, you give the name of the array followed by the number of the element you wish to use, given – again – in square brackets.

Each element can be treated in its own right as a variable of the given type. Thus, to put a value of five in slot 17 of the hagbard[] array, you would use:

```
hagbard[17] = 5;
```

There's a slight complication here, but isn't there always?

You see, the slots in your arrays are numbered starting from zero, rather than from one.

And so, the hagbard array which we declared above has elements numbered from zero through to 22.

There is no element 23, but your compiler will not warn you should you try to write to or read from an element 23. After all, you might be doing it on purpose.

If we use the hagbard array in a program and somewhere try to store something in hagbard[23] by mistake, our program will compile fine. It might even run with no problems much of the time. But sometime, someday, that attempt to access hagbard[23] will probably crash the program – and maybe lock up your ST as well. So engrave the previous paragraph on your very soul.

There is a general principle to learn from this – C is a very-unforgiving language. C programs can – and will – crash the ST at some time or other.

There's no way you can get around this – you'll just have to live with it. And make sure your source code is safely saved on disk before you test your program, of course.

STRING HANDLING

Now let us turn to strings. There is no such thing in C as a string. What we call a "string" is in fact an array of char objects, with the final element of the array, the "string terminator", being a zero. This is known, properly, as a null-terminated string. Thus, the following is a C string:

```
char eris[5] = { 'E', 'r', 'i', 's',
'\0' }; /* Statement one */
```

Note that \0 is another one of those "special" characters we discussed last month. This one is simply a (char)0 character.

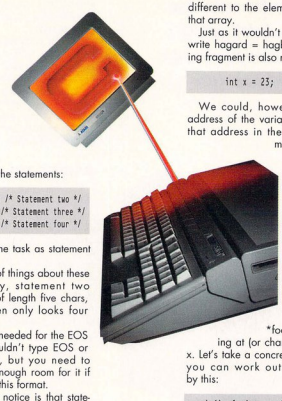
To make life easier, you could put a line #include <stdio.h> at the top of your file. This would allow you to type EOS – for End Of String – instead of '\0'. But we'll cover #include statements in more depth in a future article.

While we're on the subject, you might like to know that you can generally incorporate any character into your strings by typing a backslash followed by the Ascii code.

DIFFERENT WAYS

If the number is preceded by a zero, then it's assumed to be in octal, if preceded by x or X it's taken to be in hexadecimal. Thus, \x20 and \040 and \32 are all different ways of writing the same space character as a char.

Typing strings like this could get a little tiring. But we've already seen an even easier way of typing strings. Remember the printf() function from last ➤



month? Any one of the statements:

```
char eris[5] = "Eris"; /* Statement two */
char eris[] = "Eris"; /* Statement three */
char *eris = "Eris";  /* Statement four */
```

will perform the same task as statement one above.

Notice a couple of things about these statements. Firstly, statement two declares an array of length five chars, but the string given only looks four chars long.

The extra char is needed for the EOS character. You shouldn't type EOS or \0 explicitly here, but you need to make sure there's enough room for it if you're going to use this format.

The next thing to notice is that statement four does not declare an array at all, which brings me, and rather neatly Barry Norman thought, to the subject of pointers.

PECULIAR POINTERS

In C, there is nothing quite so useful as pointers. These peculiar items form the heart, the very foundations, of almost every C program in existence. And what are they?

As the name probably suggests, a pointer is a special type of thing which points at something else. So, a char pointer points at a char, an int pointer points at an int, and so on.

We declare a pointer to a particular type of object in just the same way as we declare the object itself, except that we put an asterisk in front of the pointer's name, like this:

```
int *foo;
```

This declares foo to be a pointer to an int. If we then use *foo then we will be using the int pointed to by foo, and we can use that int just like any other int we have declared in the normal way.

Note the difference here between foo, the pointer to an int, and *foo, the int pointed to by foo.

They are quite different things, just like the array hagbard[], which we looked at earlier, was very different to the element hagbard[0] in that array.

Just as it wouldn't make any sense to write hagard = hagbard[0], the following fragment is also nonsense:

```
int x = 23;  int *foo = x;
```

We could, however, find out the address of the variable (int) x and put that address in the pointer foo, thus making foo point at x.

We get the address of a variable by placing an ampersand in front of its name, like this:

```
foo = &x;
```

From that point on, whenever we write *foo we will be looking at (or changing) the value of x. Let's take a concrete example. See if you can work out what is printed by this:

```
main()  {  int x = 23;  int *foo = &x;
*foo = 17;
printf ( "x = %d\n", x );  }
```

Incidentally, just as %d will insert an int into your printf() string, so %p will insert the address pointed to by a pointer.

Before I go any further into the uses of functions, I think it's time I owned up about something.

You see, I lied to you last month when I told you how to declare a function. Well, it wasn't really a lie, but... well, the real dirt goes like this:

To declare a function you write the type of thing which your function is going to return. If it doesn't return anything then write void here instead.

Then you write the name of your function followed by a list of the names of all the arguments it takes, in order, separated by commas and in normal brackets. If your function doesn't takes any arguments, then just write an empty set of brackets here.

DECLARING VARIABLES

After this you list each argument in turn, and in the same order as they appeared in the brackets, preceding each one with the type of variable it is, and separating them with semicolons, just like you were declaring the variables – which is, in fact, what you are doing.

If this doesn't look as clear as crystal then take a look at the OTHELLO.C source code on the CoverDisk, which includes several examples of declarations of various forms of functions. To return a value, use the return() function, with the value you wish to return given as its single argument. You must ensure that the variable returned from your function is the same type of variable which your functions claims that it's going to return, both in its definition and in the declaration of the function which will appear in the function(s) which call it.

If you don't make sure of this then strange things will happen, such as your system crashing. C is a very unforgiving language!

You've probably noticed by now that you can only return one value from a function. But what if you want to return two or more things instead? Well, that's one of the places where you'd use pointers.

C uses something called call-by-value when it calls functions. What this means is that only the value of a variable is passed on to a function, nothing else.

So if you change the variable's value inside the second function then its value in the original function will be unchanged.

To get around this, we simply don't pass the variable to the second function. Instead, we pass a pointer to our variable. We can then change the varicble by making use of the pointer in the second function.

When we return to the first one, our variable has its value changed. To see an example of this, take a look at the show_next_line() function in the OTHELLO.C file.

A note of caution, though. When using pointers, remember that declaring a pointer does not initialise it.

To initialise it you should point it to an existing variable or use one of the standard C memory allocation functions to allocate a block of memory which it can point to.

Need I add that doing something else is likely to crash your system because C is a very, etc? I didn't think so.

The main memory allocation function is called malloc() and if you want to use it then you'll need a line

```
#include <malloc.h>
```

at the top of your file. malloc() takes a single argument, which is a long integer giving the size of the block you wish to allocate, and returns a pointer to the allocated block of memory, or NULL if it couldn't allocate your block.

All blocks should be released before your program finishes, by calling free() with the pointer to your block. We'll take a closer look at memory allocation functions next month, so don't worry too much if this last bit has gone over your head a little ways.

Just out of interest, though, why not see if you can re-write the OTHELLO.C program to use a block of memory instead of an array? All will be revealed soon...

Turn to page 94 for some great C offers

An ATARI ST USER special offer

This month we have got together with Ladbroke Computing to bring you a whole host of bargains. To order the products or services you require simply complete this form and send it to Atari ST User, 33 Ormskirk Road, Preston PR1 2QP. For telephone enquiries dial 0772 203166. Don't forget to indicate which goods you want by ticking the box next to them, fill in how you wish to pay and the total price of the goods you are ordering. All prices include VAT but exclude carriage.

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Illegal aliens

To achieve convincing enemy movement requires some judicious planning. Stephen Hill continues our game by doing just that...

Welcome to the fifth and penultimate instalment of my STOS 3D programming series. This month, we'll be developing a series of routines to flip our attackers through complex 3D manoeuvres.

Before we get too involved, it's worth doing a little careful groundwork. Our opponents can be divided up into several distinct classes.

Missiles will fire in a straight line in the direction we are currently facing. They'll continue until they either hit an object, or move out of range.

Guided missiles will track a selected target object through our 3D universe-and there'll also be realistic spaceships.

These will be piloted by an imaginary crew, with imaginary personalities, but with a very real killer instinct.

Each of these objects will need to be treated quite differently in our game. So we'll have to generate a separate program module for each possibility.

The best way of achieving this is to provide a general purpose combat routine, which can call up the appropriate strategy automatically.

Each strategy will be represented by a single number inside our ST, which will then be used by the combat module to select the required routine. Here's how this would look inside our Basic program:

```
rem Main combat module
On TACTICS Gosub
attack,defend,follow...
Return
```

Where TACTICS holds the number of the strategy we've selected for the current object, and attack, defend and follow are assumed to be the line numbers of our individual combat routines.

In a real game, we'd hold the tactics data in an array:

```
Dim
TACTICS(number_of_objects,no_of_items)
On TACTICS(object_number,0) Gosub
attack,defend,follow...
```

TACTICS(object_number,0) would now contain the strategy for each object in our game. The extra dimension would provide room for additional information as appropriate. A guided missile, for example, might have the object number of its intended target loaded into TACTICS(object_number,1), and its speed in TACTICS(object_number,2).

The great thing about this approach is that it's totally general. So once we've got it up and running, there's nothing stopping us from developing new attack formations, and new ship types at will.

Now that we've sketched out the basic technique, we can start to examine how it might be performed in STOS 3D.

STOS 3D contains a range of built-in facilities that make it really easy to generate terrific attack sequences for our games. The key, is to use a deceptively simple command called TD FACE.

TD FACE takes an object and turns it to face a selected point in our 3D game world, so

```
TD FACE object1,object2
```

turns object 1 so that it faces object2.

On the face of it, TD FACE doesn't sound so hot. But when it's used with TD FORWARD it allows us to create a mouth-watering range of effects.

Let's have an immediate bash at producing those guided missiles I mentioned a few moments ago.

The first job would be to select our target object using a variation of our previous targeting system. We could then move the missiles with the following commands:

```
Td Face MISSILE,TARGET : Rem Turn
missile towards target
Td forward MISSILE,50 : Rem Move it 50
units forwards
```

These lines would be called up as part of scanning routine using the information we've previously placed in the TACTICS array. Every time they were performed, TD FACE would turn the missile towards the target's new position, and TD FORWARD would move it 50 units closer.

The target could now dodge and dive as much as it liked. The missile would follow it relentlessly.

So far, TD FACE has shown its worth in the creation of simple missiles. But spaceships need to be moved through much more complicated manoeuvres.

For these, we'll use a second, more advanced version of the command.

```
TD FACE object,wx,wy,wz
```

turns our object so that it faces the point with world co-ordinates wx,wy,wz. As it stands, it's not too impressive, as world co-ordinates aren't all that useful. However, with the help of the TD WORLD functions, we can also use local co-ordinates, measured relative to any object in our game. This adds a whole new dimension to our capabilities.

Take the following simple scenario. Our player has fired off a guided missile at one of the aliens. And the imaginary pilot has detected this missile on his imaginary scanner, and has had an imaginary heart attack!

He's thought carefully about the missile, analysed its nearness to his ship and its explosive potential, and has logically decided on the optimum course of action. He's going to run away, terribly fast!

How might we duplicate this strategy in STOS Basic? Well, the pilot could be simulated in a simple loop. His first action, would be to turn his ship away from the missile. This might correspond to a point 10,000 units in front, say at local co-ordinates (0,0,10000).

Our program could now convert these co-ordinates into the equivalent World versions like so:

```
FX=Td World X(MISSILE,0,0,10000):FY=Td
World Y(0):FZ=Td World Z(0)
```

Variables FX,FY,FZ would then hold the world co-ordinates of the point 10,000 units in front of the missile. So the ship could be immediately turned towards this position using TD FACE.

```
Td Face ALIEN,FX,FY,FZ
```

Once the pilot had got the ship pointing towards safety, he'd step on the gas

pedal, and start accelerating.

```
Td Forward ALIEN,150
```

These commands would be repeated until either the alien or the missile was destroyed.

In a real game, the situation would obviously be more complicated, as the attacker would be continually changing course to evade the missile. We could simulate these manoeuvres by adding an extra random element to this routine. Instead of pointing the alien directly in front of the missile, we'd shift the aim horizontally or vertically.

```
XOFF=Rnd(10000)-5000: Rem Point alien
left/right by random amount
YOFF=Rnd(10000)-5000: Rem Point alien
up/down
ZOFF=10000: Rem Point the alien 10,000
units forwards

FX=Td World
X(MISSILE,XOFF,YOFF,ZOFF):FY=Td World
Y(0):FZ=Td World Z(0) Td Face
ALIEN,FX,FY,FZ
```

The pilot would now seem to turn away from the ship in a random direction, just like a human player.

We'll now progress to the original point of this article, and start work on creating a realistic attack manoeuvre for our aliens.

First though, we'll need to solve a rather thorny problem. The Object Modeller automatically saves all our objects just as they appear on the screen. Normally, that's fine, but sad to report, our game ship is currently facing the wrong way.

This will make our attack patterns look very silly indeed, as our aliens will now appear to be moving backwards towards the player's ship!

There are several options:

1 Load the game ship into OM and turn it so that it's pointing away from the screen. The file you'll need is GAME_SHI, and it can be found in the DEMOS/OBJECTS directory. Save it onto a fresh copy of the STOS 3D INSTALLER disk and you'll be ready to go.

2 Cheat shamelessly! Replace the game ship with an object such as ROCKET which is already facing in the correct direction!

3 Control the objects manually. As I'll be showing you next month, it's possible to override the existing direction settings, and turn our objects by hand.

We'll now simulate a simple dive bomber. The movement will be divided up into four phases.

The attacker will be initially positioned at point A, just in front of the player's ship. He'll then turn to face B, and dive directly towards us, firing continually. As he passes below our ship, he'll set course for C, and move away until he reaches a safe distance behind our player.

He'll now repeat the original attack pattern in reverse. The run will originate at C, immediately behind the ship. The alien will then duck towards our player in a sneak attack, turning to his starting position at B.

Since we'll be generating these effects using TD FACE, all movements will be relative to the player's ship. So as the player moves through space, the attacker will automatically change direction to keep in step.

This will have a massive affect on the final flight pattern, which may look very different from our simple diagrams.

We'll now have a detailed look at how these phases might be implemented within our game.

```
Phase=0
```

The attacker is moving from B to A. When he gets there, the run will commence, and he will steer to a position just below the player's ship.

```
1310 if PHSE=0 and RANGE>15000 then
YOFF=-2000 : ZOFF=0 : PHSE=1
```

The variables XOFF, YOFF, and ZOFF hold the distances from the target position to the player's spaceship, measured along the local axes X,Y,Z. RANGE contains the straight-line distance between the attacker and the ship.

It's generated automatically as part of our original scanning procedure. Note that if we initially place the ship 16,000 units ahead of the player, line 1310 will be triggered immediately at the start of our program. So the attack run will commence directly from phase 1.

```
Phase=1
```

Our enemy is now moving quickly towards the player. When he's at the midpoint, he'll turn to a point far behind our ship.

```
1320 if (VIS=0 and RANGE<2000) and
PHSE=1 then YOFF=0 : ZOFF=-20000 :
PHSE=2
```

VIS is a variable holding the results of our previous TD VISIBLE call. It would be set from the scanner using a line such as:

```
715 VIS=Td Visible(OB)

Phase=2
```

This signals the retreat. The attacker is currently proceeding towards point C. He'll change course when he reaches a safe distance from the player.

```
1330 if PHSE=2 and RANGE>15000 then
YOFF=-2000 : ZOFF=0 : PHSE=3

Phase=3
```

Our attacker has now turned around, and is heading back towards the midpoint at C. Once he's there, he'll head towards his initial starting position.

He'll now repeat the manoeuvre from phase 0.

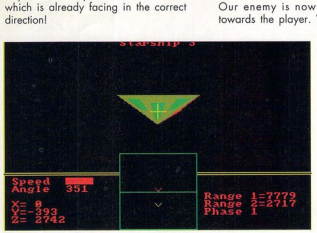
```
1340 if (VIS=0 and RANGE<2000) and
PHSE=3 then YOFF=0 : ZOFF=20000 :
PHSE=0
```

After lines 1300-1340 have selected the direction, we can turn the attacker like so.

```
1345 Rem turn attacker to selected
point
1350 VX=td world x(0,XOFF,YOFF,ZOFF) :
VY=td world y(0) : VZ=td world z(0)
1360 td face 0B,VX,VY,VZ
1365 rem move forward
1370 td forward 0B,200
```

And here's the finished routine:

```
1298 rem Simple version of swoop
1300 Locate 26,22 : print "Phase"; PHSE
1305 rem Move towards the player at
start
1310 if PHSE=0 and RANGE>15000 then
YOFF=-2000 : ZOFF=0 : PHSE=1
1315 rem Turn at midpoint B
1320 if (VIS=0 and RANGE<2000) and
PHSE=1 then YOFF=0 : ZOFF=-20000 :
PHSE=2
1325 rem If we are at the far end of
the dive (C) then turn towards the ship
1330 if PHSE=2 and RANGE>15000 then
YOFF=-2000 : ZOFF=0 : PHSE=3
1335 rem turn at midpoint B from behind
1340 if (VIS=0 and RANGE<2000) and
PHSE=3 then YOFF=0 : ZOFF=20000 :
PHSE=0
1345 rem turn attacker to selected
point
1350 VX=td world x(0,XOFF,YOFF,ZOFF) :
VY=td world y(0) : VZ=td world z(0)
1360 td face 0B,VX,VY,VZ
1365 rem move forward
1370 td forward 0B,200
1380 return
```



Next month we'll slot all the pieces together to finish our game

Improve with PostScript

PostScript is no longer the preserve of expensive DTP bureaux. Try it on your ST and it'll pay handsome dividends in output quality, as Andrew Wright finds out

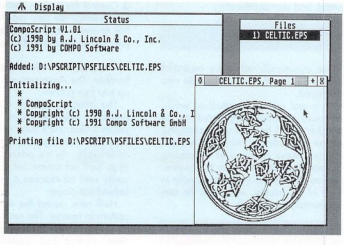
PostScript is the primary language of desktop publishing – a de facto standard page description language or PDL that all the top-end DTP systems have to use to maintain credibility.

It has its challengers, of course, not least of which is Calamus, which has turned its back on PostScript completely, and Hewlett-Packard's PCL, which is inarguably the standard PDL both in the office and at home, owing to its use in every HP printer from the Deskjet upwards.

So what is PostScript all about and why is it so important to ST users? Put simply, PostScript is a page description language used to instruct laser printers how to print text and graphics. Look closely at a typical ST-based system printing from a program like Timeworks to a dot matrix printer.

Each page is created on the screen, using low resolution screen representations of the chosen typeface and graphics. Pressing the print button tells the ST to create a full resolution bitmapped graphic in memory, using the higher resolution printer fonts, which is then printed dot by dot on the printer.

When Timeworks prints to a PostScript printer, each command that describes the page is sent as plain Ascii text to the printer. An interpreter in the printer, quite often run by another 68000 CPU just like the ST's, then turns it into a bitmap, firstly in the printer's memory and then on the page.



The CompoScript interface, including separate windows for output and error messages

PRINTING DIRECT

At first glance, this doesn't appear to be much of an advantage but in fact control is returned to the ST much more quickly, as the processing is done largely by the printer. One spin-off of this is that an ordinary ST isn't much slower than a TT or accelerated ST when printing direct to PostScript.

The resolution of the printer is irrelevant too – PostScript output is device independent and the same file can be printed on a 300dpi laser or a 2,540dpi typesetter with near 100 per cent certainty that it will look the same, at least in layout terms.

To configure Timeworks for output on a typesetter (if it were possible) would entail some very large printer fonts – a GDOS printer font for 12-point Times Roman at 2,540dpi, for example, would take up nearly 3Mb of disk space!

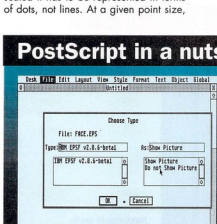
A third major advantage is that the fonts themselves are of top quality outlines, often being stored in the printer itself. Most PostScript lasers contain 11 scalable typefaces (totalling 35 fonts when allowing for bold and italic versions) which have become known as the "standard" set but others can be stored on your ST's hard disk, downloaded to the printer and kept in the printer's memory until required to print. This process is usually handled automatically by the application (as in the case of PageStream), making it transparent to the user.

PostScript fonts are hinted too. Hinting ensures that each character is printed as close to the way it was designed to look as possible, even when printed at small point sizes or on low resolution printers.

Hinting overcomes the main drawback of scalable type – when type is scaled it has to be represented in terms of dots, not lines. At a given point size, for example, the stem of a character might have to be two and a half dots wide to stay in proportion. However, it can only be represented by two or three dots by the printer. The font designer creates the hints to tell it exactly what to do in this situation, making it a highly skilled art.

One drawback of PostScript is that it is slow, especially on high resolution devices or when greyscales and bitmap graphics are involved. A page with

PostScript in a nutshell



Importing an EPS file in PageStream

An Encapsulated PostScript (EPS) file is essentially a graphic described using the PostScript language. As such it is size and position independent and can be positioned or resized in any suitable page layout program.

It can contain both bitmap, greyscale, vector and even text components but among current ST packages, only PageStream and Timeworks will support EPS import and there are very few packages that will allow creation of EPS files – Didot Lineart is one, Silhouette another, though forthcoming packages like Convector and DA's Vektor claim EPS capability.

The problem with EPS files is that they can't

complex filled objects can take up to half an hour to print on an average PostScript laser. It also requires a lot of memory – no PostScript printer can hope to cope with real DTP if it has less than 2Mb of memory.

The other main disadvantage is price, a particularly sensitive issue for a home users. The price premium on a PostScript laser will be several hundred pounds, simply because of the extra processor and the licensed interpreter. The fonts are also expensive though bargain bundles are increasingly common and they are starting to make the cost of ownership much more acceptable.

PostScript is primarily a programming language, and is stack-based, similar to Forth. One of its greatest strengths is that it can be read and understood to a degree by mere humans. A PostScript file is a plain Ascii text file that can be edited and altered providing, of course, you know what you're doing. Take the PostScript commands:

```
72 72 moveto
72 144 lineto
1 setlinewidth
stroke
showpage
```

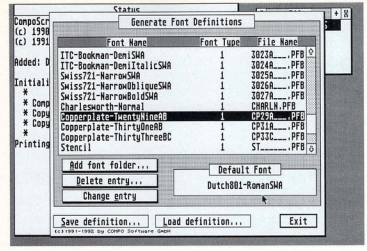
The first line pushes the number 72 on to the stack, followed by 72 again and then the instruction moveto. The line is then executed in the order moveto 72 72, or in other words, move the current position pointer to a position 72,72 in relation to the origin 0,0.

As the origin is the lower left-hand corner of the page and the units are in 1/72 of an inch, this puts the current position an inch up from the bottom and an inch in from the left.

The next line draws a line from that position to another position two inches in from the left, the line width is set to 1/72in and stroked (or painted in). Showpage does just that – it prints the page as it has been described.

While this is pretty basic stuff, if you understand the language fully, you can add impressive special effects or just change things like the size of a halftone screen or angle of frequency quickly and easily

PostScript was first released in 1985 and went into the first production laser



Configuring CompoScript for your own PostScript fonts

printers the following year. It began life as a means of accessing a 3D aircraft database and was further developed into a printer protocol by Xerox. The original developers eventually formed Adobe Systems to market the full-blown product and the rest, as they say, is history.

Changes have been few and far between, mainly because the huge installed user base of PostScript laser printer owners would object strongly to having to upgrade every few months or so. The last major enhancement was the introduction of level 2 PostScript in 1991 which brought full colour capability and slightly faster printing.

REFERENCE MANUAL

No ST applications use or support level 2 though, not even CompoScript, but this isn't a great loss as there aren't many printers using it either.

If you need more information, Adobe publish a sizeable work entitled the PostScript Language Reference Manual (otherwise known as the "Red Book"). It isn't what you'd call light reading but it contains virtually everything there is to know about PostScript. Adobe UK can be contacted on 081-547 1900.

Sooner or later all PostScript users will turn to the local DTP bureau for high resolution output using a specialised typesetting machine.

Whether you're making your own headed notepaper or producing the company newsletter, high resolution masters will turn an amateur production into a professional quality job.

These masters, or bromides as they're called, aren't cheap – an A4 bromide can cost anywhere from £2.50 to £6 a time – but you can take several steps to ensure the money isn't wasted.

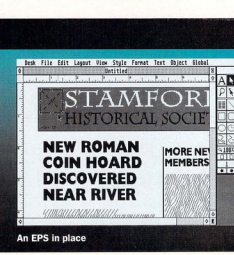
1. *Talk to your local high street printer, or whoever will be doing the reproduction, first. Some will prefer bromides, others film. You might even save money by going straight to film. Be guided by the experts.*
2. *Copy your PS file on to a disk (it's a good idea to make a second copy on the same disk in a separate folder as DOS/Mac systems can be choosy about reading ST disks).*
3. *Don't archive the file unless it's so big you have to and if you do, ask the bureau if they can de-archive it at the other end! Try ARC if it's a Mac bureau, LZH or ZIP if it's a PC one but do ask first.*
4. *Timeworks users needn't worry about fonts – you can use only the standard set anyway. PageStream automatically downloads all fonts into the PS file and Didot offers a choice – if in doubt, include them in the file but don't put them on the disk separately, even if the bureau asks, unless they're PD fonts. It's called piracy!*
5. *Agree a price before you send the disk – and watch out for minimum charges which are usually £10 to £15, representing the cost of three or four A4 pages. If you're only sending one page, send a second, slightly different version to be printed. It'll cost no more and at least you'll end up with a backup if something goes wrong.*
6. *Include clear, legible instructions with your disk. State the type of output (bromide/film), the size of the page, whether crop marks are required, the number and names of all the fonts included and the price agreed on the phone, if relevant.*

All this helps the bureau if your file fails to print. They won't spend long on it but if there's plenty of information it helps them in troubleshooting. Don't forget to include a proof you've printed yourself, if it's possible. But what of

usually be displayed on-screen when imported, as the program does not have the necessary interpreting software. PageStream is an exception in that it will read and display EPS files generated by Adobe Illustrator.

Some EPS files have a preview image built in, usually a low resolution bitmap in TIFF format. PageStream can read and display the these previews in these EPS files too.

Timeworks however, will present you with a box with a cross in it, and while it will eventually print out on a PostScript printer, you can't see it on screen as you're laying out the page.



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PD HERO COMPILATIONS

PCW 124 - Flytech, Maths Blaster, JMP 2, JMP 6, JMP 8
PCW 123 - Fusion Sound, KGB Intro, DNT, Pleasure Dome 1 & 2, Maggie 9 intro
PCW 120 - Avalon Artistic, Lost K, Advert, Syndicate Intro, Special FX Intro, Aura Intro
PCW 119 - My Socks Are My Weapons, Tea Party (1 Meg+), Extream Party, +3 others
PCW 118 - Demo, Cybon, Megademo, Factory is Dead, Coding for Fun, + 3 others
PCW 116 - Isen Animation (1 Mega+), Digisynth music demo
PCW 115 - Reanimators Music, ABC demo 7, Megarex, CWI megascreen, Similari
PCW 114 - STE 3D scroll (1 Meg+), Mr Music demo4s, Scum of the Earth + 4 others
PCW 113 - Skuzz (1 Meg+), Whittaker Music, Aggression, DNA, FAB, Cartoon, FF demo
PCW 112 - Union Demo, Synth Dreams, Illegal Exception, Fire Cracker, MCA
PCW 111 - Constellations, Thunderstruck, Money Talks, Phractal, Jing Jang
PCW 110 - Californian Raisins (1 Meg+), Chem 8, Factory, IMA Intro, ICC dream scroll

SOUND TRACKER MODULES [ALL COME WITH PLAYER]

TRAC 95 - PYC, Acid, Beams of Light, Come & Get Me, CKE, Dawn, Elysium
TRAC 94 - Cosmic, CRBZ, Greenpeace, Power Lords, Red Devil
TRAC 93 - Battlezone, Jack Rave, Megarave, NEB 1993, Passion, Raboraxe, Stellar, Rhythm
TRAC 92 - Di-hard, Equality, Fusion, Instinct, Legion, Mandate, Turbo. EXCLUSIVE!
TRAC 91 - Gaslight, Legacy, Opus, Retro, Sorcery, Summer, X-Ranock. EXCLUSIVE!
TRAC 90 - Apology, Classic, Egypt, King-Tut, Lazy, Loose, Mahoney, Timeslip, Titan
TRAC 88 - Axikatl, Champion, Entangled, Mamo, Maniac, Massacre, Tek3.1
TRAC 83 - Dungeon, Maximum, Mission2, Pheenix1, Scene2, Sidremix, Sweet, Tansnare
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UTILITIES AND APPLICATIONS

UTIL 13 - Genwin - Great to English Translator, DC Utilities, D Backup, MINT Operating System 'A'
UTIL 19 - Your Second Manual, Jokes, Znet Magazines, QDOS information 'A'
UTIL 20 - Fonkit 3.35 - Create, edit, and convert various font formats, Pro Copy Elite 'A'
UTIL 21 - Segrotan 4.14 + 4.17 - the very best virus killer available in the PD 'A'
UTIL 38 - Printer Utilities - tons of drivers, text printer, poster maker, print speaker 'A'
UTIL 40 - Various packers inc Atomik 3.5, Automation 5.0, 1, Ice 2.4, Pompey 1.9
UTIL 42 - Intro Maker - combine graphics, sprites, scroll text and music together.
UTIL 45 - Kaos Desk 2.01, Teradesk 1.06 - both very good replacement desktops 'A'
BUSI 1 - Invoice and Statement Generator demo, NameNet (1 Mega), Sales Controller 'H'
BUSI 2 - Sheet 2.0, flexible spreadsheet, D Base One - very friendly database 'A'
BUSI 4 - Double Sentry Accounts, everything except VAT, Address Book 'A'
WORD 4 - First Word + tools, Printer Drivers, Spell Checker, Grammar Checker demo 'A'
PRO 20 - Video Master, video titling package Extra fonts on PRO 23 £2.95 each
AUDI 23- Sound Master 1.02, Mozart Dice Waltz - Creates music without knowledge! 'H'
FONT 1-9 - A Mega-pack of 200 - Calamus fonts for just £12.00! Some of the parts may not work with newer versions of Calamus. Each disk available individually at £1.50

PROGRAMMING

LANG 5-9 - GNU C++ Compiler 2.1 - Hard Disk and at least 2.5 Meg memory needed! A'. £6.50
LANG 16 - STOS Tutorial and various Basic programs
LANG 24 - C Advertiser Toolkit - the very best adventure creator available 'A'
LANG 29 - STOS Tracker - adds a new set of STOS commands to use to Soundtracker
LANG 30 - The Last Boys Demo Source Code disk.

EDUCATION

EDUC 8 - The Search - historical adventure, Spelling Made Easy, Dot to Dot
EDUC 9 - Babyshop, Computer School 2 & 3, Butterfly in the Park
EDUC 13-15 - Desk of a President - investigation into the death of John F. Kennedy. £4.00
EDUC 16 - Frangles 1 & 2 - French Tutors, Me First 2.0, Numbers, Slimming
EDUC 20 - Easter Egg Hunt - a pleasant adventure game for 7-12 year olds
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BUGAM 103 - Aphitudes - Gives personal tests & analysis of results. £2.75
BUPRO 26 - Early Learning Maths - Superb ex-commercial maths program. £2.95
SHOE 4 - Robot Words - A friendly spelling game for younger children. £2.95

New Age PDL (Dept STU5) PO Box 30, Leigh-on-Sea, Essex, SS9 4AD. Tel: 0702 526435

getting hard copy of your files before the bureau stage? CompoScript, launched a year ago, has proved a boon to desktop publishers needing to get to grips with PostScript and proof-print files before sending them on to a bureau. Any PostScript or encapsulated PostScript file can be displayed on-screen or printed to virtually any printer, including most dot matrix varieties, inkjets and lasers. It can also be converted into a bitmap image in either IMG or TIFF format.

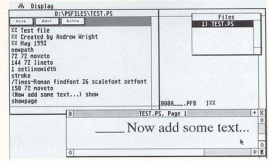
It has brought the greatest benefits to PageStream users, partly because it comes with the bitstream versions of the "standard" PostScript set – Courier, Times, Helvetica, Avant Garde, Bookman, Zapf Chancery, Palatino, Century Schoolbook, Symbol and Zapf Dingbats.

BETTER HINTING

These can all be used directly in both PageStream and CompoScript. CompoScript also uses the PostScript fonts' built-in hinting to produce far better output than PageStream itself is capable of.

CompoScript is supplied on three disks with a brief manual running to 50 pages. Two of the disks contain the PostScript fonts, in AFM and PFB files, in self-extracting archive format.

For a complex subject, the manual is too short and fails to give any detail on things such as frequency and screen angle, preferring to advise users not to tamper with them.



Here's the sample PostScript program in a text editor window alongside the actual output from CompoScript

Although CompoScript could be run on a standard 520ST/E, in reality 1Mb or more will be vital and a hard disk indispensable.

Printer drivers (standard That's Write drivers) are included for the Canon Bubblejet, Deskjet, Laserjet, Atari laser and various Epson and NEC-compatible dot matrix models.

CompoScript is a fully GEMmed program with multiple windows displaying a list of files printing, error and status messages and, of course, the output itself if printing to the screen.

All the Compo features are present as in other applications like That's Write – there is a small button on the window bar to turn the vertical and horizontal scroll bars on or off and all dialogue boxes can be moved around the screen.

There are three GEM menus from which you can choose the output method (screen, printer, IMG or TIFF) and alter various settings such as resolution, page size, scaling and orientation, default font and the greyscale screen angle and frequency.

PostScript fonts can be stored anywhere on your hard disk and the setting saved for convenience.

Configuration is quick and easy and it takes no time at all to get the program just the way you want it. Fonts can be given up to five aliases which is particularly handy as the Bitstream fonts supplied with the package have non-standard names – Dutch801-RomanSWA, for example, is the Bitstream equivalent of Times-Roman and this information has to be saved in the default font definition file.

Timeworks users will have to add Timeworks' own PostScript identifiers too.

CompoScript can be relied on to print PostScript files from all kinds of sources – I tested files from PageMaker and Freehand as well as the ST applications that can handle PostScript.

Only one file refused to load, the benchmark file ESCHER.PS downloaded from CompuServe, and this because it contained colour information. EPS files were a different matter – I tried several from different sources (CorelDRAW on the PC, Cricketdraw on the Mac, Silhouette and Didot Lineart) and most refused to print unless they were part of a complete PostScript document.

CompoScript is available from Compo Software on 0480 819891 and priced £199.

Is GhostScript a dead language?

GhostScript has to be one of the oddest bits of software you're ever likely to come across. Essentially it is an interpreter for the GhostScript page description language, which was designed to be virtually interchangeable with PostScript.

It runs on all sorts of computers from powerful Sun workstations and IBM-compatible PCs to our very own ST. What's more, it's entirely free, thanks to the Free Software Foundation and the GNU project who developed it.

GhostScript can be used to print PostScript files on non-PostScript printers using a rather tortuous command line interface. Unfortunately that's all it will do. The files cannot be displayed on-screen as with CompoScript and it doesn't use standard PostScript fonts.

The distribution version contains but a single default font so it's hard to see much use for it, although extra fonts can be downloaded from the online networks such as CIX and CompuServe.

Using GhostScript is anything but easy. There are three separate GhostScript executables supplied for the ST; one for each of three printers – Deskjet, Laserjet or Epson compatible.

First the required file is renamed with a TTP extension and copied to your hard drive. Then the accompanying PostScript files and fonts are copied into the default directories on drive F (you'll have to edit the appropriate configuration files if you want to store the fonts and files elsewhere or you don't have a drive F).

When the program is executed, the TTP parameter box appears into which the name of the file to be printed is typed in the form "GS MYFILE.PS". The PostScript file, MYFILE.PS, is then printed to disk in a uniquely numbered print file.

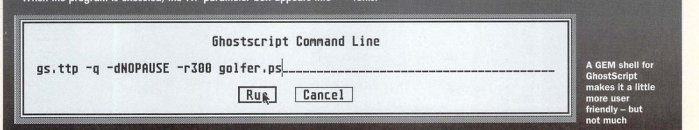
A second program, PRINT.TTP, is then executed and the name of the newly created print file inserted into the parameters box. Hopefully, this will result in some hard copy from the printer and more often than not it does indeed work.

Some of the tedium can be removed by using one of the GEM shells written to make using GhostScript easier though the only one I could find for this review was much less helpful than I had hoped.

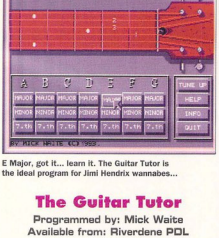
Some of the more obscure PostScript commands aren't implemented but by way of compensation the CMYK (cyan/magenta/yellow/black) colour model is supported to some extent, allowing GhostScript to print colour files such as the ESCHER.PS file which CompoScript couldn't handle.

GhostScript takes such a lot of work to get going – not to mention hours of expensive downloading to get a wide range of useful fonts – that it can only be recommended for the dedicated user. The dithering algorithms used in tinted areas are also markedly poorer than those in CompoScript.

Most PD libraries should be able to supply it – mine came from the Floppyshop PD library on disks LAN 73 and LAN 76. Otherwise try one of the online services such as CIX or Compuserve which have large collections of GhostScript files, including GEM shells and extra fonts.



A GEM shell for GhostScript makes it a little more user friendly – but not much



E Major, got it... learn it. The Guitar Tutor is the ideal program for Jimi Hendrix wannabes...

PUBLIC

Whether you like to cook or let loose a lick, Jonathan Maddocks has a program to suit, fresh from the grass-roots grapevine of the public domain...

The Guitar Tutor

Programmed by: Mick Waite
Available from: Riverdene PDL

Guitar Tutor is the first program this month that really caught my eye. I remember the days when I was struggling to play the good ol' six string and how frustrated I got because of lack of knowledge about chords.

If you've just started learning the guitar or you want to start then the Guitar Tutor is ideal. It only teaches you the major, minor and seventh chords, but it would be ridiculous to expect Mick Waite to include every chord because there are literally hundreds and many would probably confuse the beginner.

There is another reason for the limitation and that's down to memory. The simple reason is that when you click on the button to learn the chord the ST plays a sample of that chord. It takes an immense amount of memory to hold many samples, although Mick says that if people write to him asking for more chords he would definitely consider a sequel.

The screen is set out with a guitar neck at the top of the screen with all the chord buttons underneath. When you click on the chord you want to learn, the ST plays it and shows you on the guitar neck where to place your fingers.

Eventually after learning a few chords you will be able to play a tune. Although it teaches you the chords it doesn't tell you what to do with them, so you'll have to work it out for yourself.

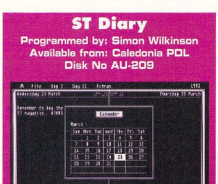
Another handy option is the guitar tuner which unless you want to sound like Nirvana is essential. By clicking on the different notes, a constant piano note will play and you'll be able to tune your guitar easily and efficiently.

The only other thing worth mentioning is that the program is for the STE only and needs 1Mb of RAM. Guitar Tutor is well put together, easy to use, contains good graphics and has the nice touch of sampled sound.

Riverdene PDL have the exclusive licence to sell Guitar Tutor and while it's not public domain, it will set you back a mere £4.95 which includes postage and packing.

ST Diary

Programmed by: Simon Wilkinson
Available from: Caledonia PDL
Disk No AU-209



Get you life organised with the ever so handy ST Diary, and look – there's even a calendar. Never miss the month of September ever again

Ever forgotten that important date? That time when you forgot Granny's birthday? Tut, tut. What you need is a diary and it just so happens that I found one in my PD pile.

ST Diary, as the name suggests, is an electronic version of a page-a-day diary. Unlike conventional diaries, this one functions for more than one year and will automatically adjust for leap years.

It only works in mono, but users with a colour TV or monitor can use the mono emulator which is provided on the disk.

Each page is laid out like a conventional diary. In normal sized text next to the edge of the page is the day, the position within the month and the current month. In smaller text near the centre of the screen there is the week number, the number of the current day within the year and the number of days left to go in the year.

Remember those totally useless pages that you find at the back of a diary? Well ST Diary contains those as well, but they're not that useless for a change.

These pages display world times, weights and measures, and a computing dictionary which displays all sorts of information, including many acronyms.

It's a highly useful PD program, and is very friendly and easy to use too.

Winner's Enclosure

Programmed by: J S Cowper
Available from: Caledonia PDL
Disk No AU-209

Contained on the same disk as ST Diary (left) is a small horse racing prediction system called Winner's Enclosure. The program started life as an idea sparked in Dundee by the programmer as he wallowed in the growing mass of his losing betting slips.

So he decided to work out a system on his ST after reading about betting systems, and tempted by the major incentive of making some money out of it and confounding the bookies.

The programmer admits that he hasn't come up with a foolproof system, but he has developed a method of analysing race information to make choosing a potential winner a lot easier. What you do need is a daily paper and then you're away. Using the paper, you have to input a certain amount of information such as the horse's weight and where it was placed in its last six races.

The actual program is very simple with a standard menu bar with four headings. Some features are disabled, but register and you'll get the full thing.

They say gambling is a mug's game, but I've yet to find out how successful the program is. So, I'll let you make your own minds up as to whether you want the program, but I'm off down to the bookies. If I win I won't be back next month to do these pages...

Chaos

Programmed by: Martin Brownlow
Available from: Caledonia PDL
Disk No GM-151

This is going back a bit, but I'm assured that Chaos first raised its head on the Spectrum about seven or eight years ago. The game has now been resurrected for all you ST users.

It's a game of magical combat which takes place between two to eight wizards in an arena. Each player takes his/her turns to select and cast spells and move summoned creatures.

The winner is the last wizard left alive, but there is a limit to the number of game turns in which to achieve victory, and the contest could be drawn, causing gamers to start play over again.

It's almost identical to the Spectrum version except it has slightly better graphics, but as a

Origami

Programmed by: Mike Shields & Paul Loughlin
Available from: Emerald City PD
Disk No SN-27

Most original PD product of the month goes to Mike Shields and Paul Loughlin, the programmers of Origami. This is unfortunately a demo

From one small square piece of white paper to...

sector

Playtime

Programmed by: B J Amor
Available from: Goodmans International
Disk No GD 1884

Playtime is an educational PD program. It contains six modules and would probably suit children between the ages of five to seven.

The first module is Drawing. This is a quite good little paint package. It features all the usual features like paint cans, line drawing and so on. I was pleasantly surprised at the quality of the pictures you could produce.

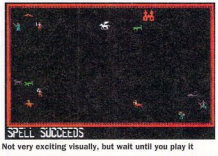
Maths and Colours and Shapes teaches the child on these subjects and then tests them. They're both good little modules. Balloon is more game-based, but still features educational elements. The idea is to drive your little plane around the screen popping the numbered balloons that float up to the top of the screen.

Playtime was created with STOS. It's hasn't got amazing graphics and sound, but the educational content is very good indeed. It'd suit parents looking for a cheap educational program.

There are a couple of other programs included too. One is entitled Picture Time which is an upmarket Fuzzy Felt featuring such childhood faves as the Mr Men and Winnie the Pooh. The other is a program called Sample Time where the child can mix and muddle supplied samples to create weird and wonderful sounds.

Select any one of the six modules from this handy menu system created by STOS

bonus it is packed full of samples taken from TV programmes and films such as Highlander, Blade Runner, Ghostbusters, Red Dwarf, Blackadder and Monty Python and the Holy Grail. The samples work very well and really bring a brand new lease of life to the game. A lot of the time you'll end up on the floor in a fit of giggles simply because they are so funny.



Not very exciting visually, but wait until you play it

I would have thought the copyright people might have something to say about them, though – there are an unbelievable 56 samples in all!

The game was written in just two weeks, but don't let that put you off. It certainly kept the *Atari ST User* team amused for the best part of a week. The game isn't visually that impressive, but the gameplay is unchallenged and the samples make the game that bit more special than the rest. If you're going to get a PD game this month then get Chaos.

Assistant Chef

Programmed by: Eric Coners
Available from: Emerald City PD
Disk No SN-28

The main menu where you can select the index of recipes and even add your own culinary masterpieces

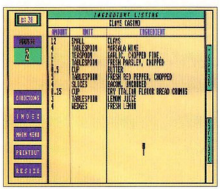
Assistant Chef is a program suitable for hungry students or for people who want to cook something different from bacon sandwiches and beans on toast.

It was created using GFA Basic and features such culinary delights as shrimp scampi, chicken à l'orange to the totally bizarre clams casino and fried Onions à la Dave!

The program is a relatively simple database. If you click on the index button you get a list of the 42 recipes included, which also tells you the food group, food type, dish type, whether the dish is hot or cold and last but not least, the star rating.

It's really easy to use. First you find a recipe you want, then you are presented with a screen with all the ingredients needed for that recipe and how many the dish serves. Click on the directions icon and you're told how to make the dish.

If you want a program on cooking dishes then this is the ideal.



Ahem, here's a recipe I prepared earlier...

version of Computer Origami, so you will only find one model available to animate and make.

The program has been designed to make the art of Origami (paper folding) easier to follow than some instruction forms around now. On the full package, which will cost you £8, there are ten models to choose from and the programmers say that if enough people buy Computer Origami then more model disks will be developed.

The program is well put together and uses an icon-based user interface. It took over a year to develop and the programmers has the major problem of how to show the user how to fold the paper in order to make a model. The answer that they came up with was digitising.

Images were digitised on the Amiga and transferring the images over to the ST. All that was then needed was to squeeze over 500 frames of animation plus ten model plans onto one disk! The program works wonderfully well and caused much hilarity in the office when we tested it out. All I can say is that there isn't much co–ordination and most of the models were laughable, but I'm sure you'll do far better than our sad attempts.

Origami is fun with a capital F and I recommend it to everyone. Excellent stuff.

...a wonderful paper sculpture of an exotic bird of paradise, err probably

Where to get 'em

- Emerald City PD, PO Box 28, Southampton SO9 7HS.
- Goodmans International, 16 Conrad Close, Meir Hay Estate, Longton, Stoke–on–Trent ST3 1SW
  Tel: 0782 335650, Fax: 0782 316132
- Riverdene PDL, 30a School Road, Tilehurst, Reading RG3 5AN
  Tel: 0734 452416, Fax: 0734 451239
- Caledonia PDL, 250 Oldtown Road, Hilton, Inverness, IV2 4PT
  Tel: 0463 225736

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ARC 20 BLAT. Superb STE ONLY falling blocks game. 10 fun filled levels. Superb DMA sound, will work with 512k but is a real treat on 1Mb machine. Great graphics.

ART 07 Superb art package, ideal for simple DTP. 23 built in fonts. A4 size paper works in monochrome for best quality of print. Ideal for leaflets etc. DS Disk.

ADV 01 DDST, DUNGEONS & DRAGONS, Role playing adventure. PARANOIA, ENCHANTED REALM and ELBOZO CITY. 3 more good adventures also on this disk.

ARC 50 HACMAN, superb pacman clone. MR PACKY, another super pacman. SOCCER brilliant 3D football game 2 players. MUTANT WIPEOUT ariel shoot em up. INVADERS needs no description.

BRD 04 CHESS, superb chess game. DECODER, excellent mastermind. SUPER SIMON, computer version of hand held game. DOMINOES, puzzle game. GOLF card game. Also on this disk DRAGON MAZE, 2 game, SENSORI BACKGAMMON, BRIDGIT, ST ARTREK, BATTLESHIPS.

ARC 14 HOME, and L'ORB 2 super pinball games. GALTIC RANGER, unusual shoot em up. MONKIES & BALLOONS, bounce the clown and burst the balloons. FIRESTORM, another good arcade game rescue the humans. LAZERBAL, super game and interesting version on the pinball theme. Also on this disk LOST TREASURE, WIDOW MAKER, SLALOM & BREAK OUT.

AST 01 PLANETARIUM simply the best PD Astronomy program. SKYMAP another great Astronomy program plus aSTronomer.

BRD01 MONOPOLY, LAZERCHESS, OTHELLO, CHECKERS, WHEEL OF FORTUNE and more. A superb collection of BOARD GAMES.

WPR01 ST WRITER V4.2 and FIRSTWORD. The best word processors for the ST(E) plus a spell checker, print spooler and a selection of ready to use letters.

ODD07 THE WORLD OF STARTREK. Over 300K of text interviews and biographies from the original STARTREK and NEXT GENERATION plus loads of pictures from both series. A must for all TREKKIES!!!

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WPR02 IDEALIST. Super multi column text printer. EX COLUMN, DUAL COLUMN, 2 COLUMN. 3 more good multi column text printers. DOUBLE PAGE. Print 2 pages at once on A4 on your SLM 804.

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WPR09 LEXICON. A pure word list containing 46,209 words without slang, americanisms or other rubbish. Needs 1Mb to run with SPELLONE (spellchecker) also provided on this disk.

ART01 ARTUTOR. For budding artist. Includes its own package.

BRD05 AMERICAN FOOTBALL. DALEKS. STARTREK. DELTA 3. CELESTIAL CEASERS (versions 1 and 2). SPACE WARS. RED ALERT. MATCH. HANOI. OGRE. 11 Board and Strategy Games. SPLENDID SELECTION!!

ARC12 BELUM INTERACTUM – Good galaxians clone. BLOCKADE. HAUNTED HOUSE. AMORTRACK. BOING. INVADERS. MANIA. Another superb selection of arcade games.

ARC13 VIOLENCE. Superb scrolling shoot em DROID – Excellent platform game.

ADV03 CONQUEST. Graphic adventure. Should take weeks to complete! (Shareware).

ADV06 BLACKDAWN. Good text adventure with excellent graphics. DUNGEON MASTER NEW LEVELS. Needs original DM disk to play.

UTL73 GEMCALC. Best German spreadsheet now translated to English. Both 0.5 and 1Mb versions.

UTL134 SAGROTAN. Must be the best virus killer around. V.KILLER v3.84. Another excellent virus killer. EXORCIST. The latest version of this V.Killer. HD RESTORE. Repairs hard drive boot sector. RIPPER and PROBE. Two programs to grab music and graphics from disks and more…

UTL139 DESK PACK PLUS. This superb integrated accessory tool has now been released as Shareware. GET IT!! DOSS ACC v2.8 + THE ACC – Super multi function accessories. M DISK v4.3. Multi function ramdisk, disk copy, hard disk, cache and more. NEWBELL and SIREN.

UTL120 ZX SPECTRUM EMULATOR. Needs 1Mb SPECTRUM to ST DOWNLOADER. Gives details on how to transfer Spectrum games from tape to disk for the above emulator. ZX81 EMULATOR and 89 PROGRAMS.

ARC15 CYBERTECHNICS Fast & furious arcade game. CRAZY ERBERT fast Q'bert clone. SLUG to fill the disk.

BRD09 MILE Excellent board game. D FISSION. Super Othello type game. TUNNEL VISION Excellent maze game. 3 jigsaw puzzle games. ST TIC TAC TOE, HIGH-LOW, BLACKJACK and more on this disk.

BRD12 TOWER POWER Super strategy game runs on 512K, 1Mb and 2Mb machine. Optional data disk available as BRD13.

ARC37 LLAMATRON and REVENGE OF THE MUTANT CAMELS. 2 superb games from Jeff Minter. These are a must for any game collection

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Family Roots is an invaluable aid to both professional and amateur genealogists. It is designed around an integrated workbench which allows you to create your family tree graphically on the screen by linking directly between the individuals.

The powerful database can be viewed instantly at the click of a mouse button. The search function enables fast cross referencing and multiple scanning.

What The Press are saying about

Family Roots :-

"I can certainly recommend it if you are working on a family history - Family Roots is going to simplify your record keeping enormously and is a pleasure to use." - **Micro Computer Mart.**

"Certainly more than you'll ever need, unless you manage to trace your relatives back to Fred and Wilma Flintstone." - **Atari ST User.**

"All in all, the best genealogy program available for the ST and well worth the money if you are considering tracing your family." -**ST Format.**

To order your copy of Family Roots, send a cheque or postal order for £24.95 to the address below. A disk with useable demos of Family Roots, Around The World and Professional Virus Killer is available for £1.00.

Around The World

Floppyshop are pleased to announce the release of their first commercial game. Around The World is an arcade adventure in which assume the role of Phineas as he negotiates his way through 40 taxing levels of sheer enjoyment and addiction.

During your adventure you will face many dangers and surprises including toxic waste in the Oceans and rock falls in the Jungles. Loosen concealed switches to unlock additional caverns and search for keys which will reveal hidden treasures and further your quest. Can you rise to the challenge and survive this epic journey by completing all 40 levels?

The game features a large playing area, devious puzzles, creeping fungus, rock falls, explosives, an original soundtrack, 50 entry high score table, 40 levels of increasing difficulty, over 40 colours on screen and much more!

Around The World was programmed over more than a year by The Pixel Shop, better known for their many Budgie UK titles under the name of The Floppyshop Boys.

To order your copy of Around The World, send a cheque or postal order for just £9.95 to the address below. UK postage free, please add £1.00 for Europe or £2.00 for the rest of the World. Credit card orders welcome. A disk with useable demos of Family Roots, Around The World and Professional Virus Killer is available for £1.00.

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WARP 9

Formerly Quick ST, this is the latest and greatest software screen accelerator for the ST/TT: graphics and text look the same, but appear with astonishing speed. Includes a host of utilities from CodeHead Software: mouse accelerator, desktop pictures, new system fonts, keyboard control over dialogs, and an excellent ARexx/Dark-alike modular screen saver. Price: £24.95, upgrades from other screen accelerators (return manual cover): £12.95.

Imagecopy

Copy images from screen, view and convert images, and print images on a wide range of printers, including: 9-pin, 24-pin, BJ Bubblejet, and HP Laserjet and Deskjet. Price: £9.95.
--Available now - Imagecopy Colour with support for colour printers: £14.95

The ST Club

64 page

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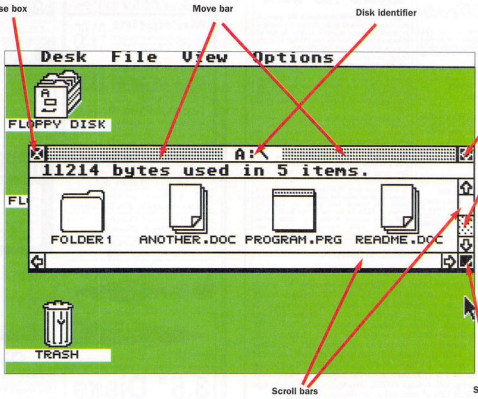


In the second part of our guide to the ST, Richard Williams looks at windows, disk copying, accessories and more...

Looking through

Windows are where the real action is on your Desktop. They display the contents of disks and folders. Double-click on one of your drive icons and so long as you have a formatted disk in the drive, a window will open.

Although up to four windows can be displayed at once on the Desktop, only one can be active at any one time – you can tell which it is by its shaded bar at the top, the fact that its scroll bars show arrows and possibly shaded areas, and the Close box at top left, Full box at top right and Size box at bottom right are visible.

Add to that the fact that it's always the one in front if the windows are overlapping, and recognising the active window is really quite easy.

You can select a file or folder in the active window only. To make a different window active, simply move the mouse pointer over it and click the mouse.

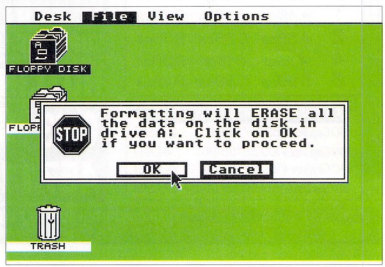
Double-clicking on a folder within a window opens a window for that folder, which shows the files and, if there are any, other folders within it.

You can also open windows by first selecting a disk or folder icon, then choosing Open from the File menu, but this is long-winded, and to my mind defeats the object of a graphical interface.

In the middle of the window's bar you will see the disk identifier – in the majority of cases, either A:\, B:\ or C:\ if you have a hard drive.

If you've opened a folder in the window, you will also see the name of the folder (for example A:\DOCUMENTS\) and, if you've opened a folder that was inside the Documents folder, yet another folder name, and so on. The limit, is eight levels of folders within folders.

To close a window, click the left mouse button with your pointer over the Close box (the little rectangle with a



After selecting a disk icon and choosing Format from the File menu, you're presented with this warning. It's always as well to be sure you've got the right, unformatted disk in the drive!

File transfer – between PC and ST

If you spend any amount of would time using a PC, it may have occurred to you how convenient it would be to transfer files from one machine to the other – for instance, if you have a PC at work and occasionally take work home with you.

Because TOS, the ST's operating system, is very similar to DOS, the PC's operating system, many lucky ST users should find that a floppy disk formatted normally on the ST can be read by a PC, even though there are one or two differences, which are too technical for the scope of this article. It certainly works with my STE and Epson PC.

However, results may vary according to your version of TOS (the operating system has been upgraded several times to cure bugs and introduce new features) and the type of hardware in use.

One way of virtually ensuring you can swap files from ST to PC and vice versa is to invest in a utility program such as Fastcopy Pro, available quite cheaply from the ST Club, which provides DOS formatting options.

Remember, you can only transfer data files, not programs, from ST to PC and vice versa. To be able to read a text file on both machines, using different wordprocessors, you will probably need to save it to the floppy disk that acts as go-between in Ascii format – that is, as pure text with no extra bits of formatting information put in by your wordprocessor.

Once you've got the data across to the other machine you can, of course, format it to your heart's content.

You may also be able to bring across certain spreadsheet, database and graphics files, though you may need to experiment and perhaps even invest in a program which will convert from one file format to another.

If you have access to a Macintosh which runs Apple File Exchange, you can format an AFE-readable PC disk on your ST.

And if you're truly the adventurous sort, there is an Apple Macintosh emulator for the ST – Spectre GCR which, while not cheap, will enable you to operate your ST as if it were indeed the Apple of your eye.

the windows

cross in it at top left of the window). You could alternatively close the window by selecting Close from the File menu, but why go to that trouble when a quick click of the box will do?

Sometimes you need to resize and/or move windows because they obliterate others or disk icons that you also need to see.

To resize a window, press the left mouse button with the pointer over the Size box at bottom right of the window, keep the mouse button held down and drag the mouse in whatever direction is appropriate, to make the window larger or smaller. To move the window, hold down the left button with the pointer anywhere on the bar at the top of the window, then drag to the appropriate position. You will see a "ghost" of the window until you release the mouse button, at which point the window proper will replace the ghost.

The Full box at the top right of the window, when clicked on, will resize the window to the full size of the screen except for the Desktop's menu bar. Click the Full box again and the window returns to its previous size.

Sometimes you will be unable to see all of the files and/or folders in a window at one time. You can, of course, re-size, although some disks and folders are so packed that even then you may not see all the contents.

That's where the scroll bars, on the right and across the bottom of the window, and the scroll arrows at either end of each scroll bar, come into their own.

Click on the arrows to move up or down, left or right, to reveal the rest of the window's content. You can move more quickly by dragging the unshaded section of the scroll bar, or clicking in the scroll bar's shaded area.

The shading, incidentally, only appears when there are hidden items, and is proportional to the number of hidden items – so if half the items are hidden, the shaded portion will fill half of the scroll bar.

COPYING DISKS

ST users are blessed in that disk, folder and file copying is very straightforward. In comparison to people who use PCs running DOS rather than Windows, for example, you've got it easy!

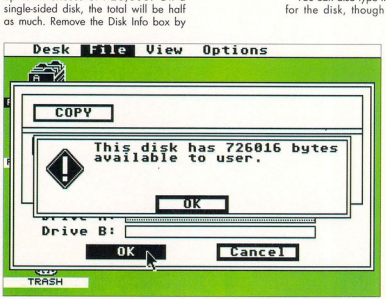
Make sure that you always make copies of important disks. To copy the entire contents of a disk, first place the source disk (the one you're copying from) in the drive, select its icon, then click on Show info... in the File menu and check whether the disk is single or double-sided.

If it's double-sided, the figures for bytes used and bytes available will add up to in excess of 720,000. On a single-sided disk, the total will be half as much. Remove the Disk Info box by clicking OK. Now, assuming the disk you plan to copy to (the destination disk) is presently unformatted, remove the source disk from the drive and replace it with your new disk. Click the Floppy Disk A icon then choose Format from the File menu.

You'll be presented with a warning that formatting will erase all the information on the disk. As there's nothing on this particular disk, there's nothing to worry about, so click OK.

In the Format/Copy dialogue box that appears, A should already be highlighted as the disk to be formatted – you probably don't have a drive B in reality anyway, but for some operations, the ST pretends it has two drives. One thing you may need to change is the type of format, from single to double-sided or vice versa, depending on what kind of disk you are copying.

You can also type in a label (a name) for the disk, though this is optional. ➤



After Formatting, a box appears telling you how many bytes the newly formatted disk has

When the settings are correct, click OK and the formatting will begin. The progress of the operation is shown graphically in a panel strip over the OK and Cancel buttons.

When it's finished, a message appears telling you how many bytes the disk has. Click OK, then choose Copy in the Format/Copy box.

Make sure B is highlighted as the source ("From") disk, and click OK. Your ST will tell you when to insert which disk. Make certain you always insert the source disk for B, and the destination disk for A, and show you the progress of the reading (taking the information from the source disk) and writing (placing the data onto the destination disk) procedure.

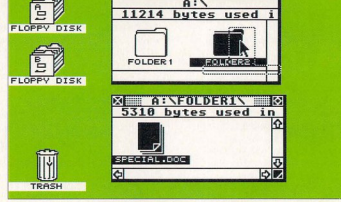
Click OKs at the relevant points, and click Cancel in the Format/Copy box when everything's done.

Nothing could be simpler – unless, of course, you adopt the other method of disk copying. As before, you must have a new disk that's formatted in the right way.

Place the source disk in the drive, click the A disk icon, then drag it over the top of the B disk icon and release it. The Format/Copy dialogue box will appear, with Copy already highlighted.

Click OK and you will be prompted to change disks several times. Like before, be very careful not to confuse your A disk with your B disk.

To copy a file to a different folder on the same disk, get two windows of the disk's contents on screen (simply double-click the relevant disk icon a second time), and use the window's move and resize facilities to ensure they don't overlap in a way that restricts your access to items. Now, in one of the two windows only, double click on the folder containing the file to be copied, select the file, hold down the left mouse button and drag the file to the folder you want to copy it to in the other window. Release the mouse button, and click OK in the confirmation box that appears.



With two windows each representing some of the contents of the same disk open simultaneously, you can copy a file from any folder into any other folder

If you want to delete the original file, drag it to the Trash Can.

By swapping disks to first of all get the relevant windows to appear, then dragging relevant icons to windows or other icons, plus a bit more disk swapping, you can copy files to folders on other disks, folders to folders on other disks, and, if you're careful enough about it, even copy multiple files and/or folders to other disks and folders.

Sometimes, if you're copying to and/or from folders within each other, it can seem to get more complex, but once you've got the relevant windows open it should be plain sailing. If you're quite good at using a computer keyboard, or eventually achieve that status, do bear in mind that it's sometimes faster to stroke the keys than to move your mouse pointer all over the place.

KEYBOARD CAPERS

There is a keyboard alternative to most mouse operations. Where more than one key is indicated for an operation, you must hold down each of keys mentioned at the same time:

- *Return or Enter: Instead of clicking OK in a dialogue or alert box, press either one of these. The item in the alert box highlighted by the thicker black border is one generally put into effect.*
- *Alternate plus arrow (cursor) key: Moves mouse pointer in direction of arrow.*
- *Alternate plus Shift plus arrow: same as above, but moves much more slowly for precise positioning.*
- *Alternate plus Insert: same as clicking*

Now switch on the power!

Learning about the Desktop and trying out all the disks that came with your ST is great – for a while. Soon, you'll want to start extending the boundaries of your knowledge and experience of software. You might also want one or two pieces of extra kit to connect up to your ST.

PRINTING

One of the first pieces of additional hardware you may want to invest in is a printer. I have no hesitation in recommending you go for the best one you can afford.

Basically, there are four types of printer you can consider. A dot matrix is an impact printer, in which usually nine or 24-pins strike an inked ribbon to make an impact on the paper.

You can get them at bargain prices – as little as £100 – although the more sophisticated ones with a good choice of fonts (typefaces) can still be quite expensive.

They can handle graphics (images) as well as text. As the image is made up of a collection of relatively coarse dots, the quality is not always that impressive on close inspection.

Daisywheel printers are less versatile, lacking graphics ability. Their action is very similar to that of the humble typewriter, and the letter quality is usually very high. Some are quite cheap, though many are more expensive than dot matrix printers.

The "daisy wheels" which bear the character images and strike the ribbon to make an impression on the paper can be changed so that you can use different fonts. Changing font mid-way through jobs can be a little frustrating, though.

Inkjet printers have heads which actually spray tiny dots of ink on to the paper to form the letters or graphics. Quality is higher than that of dot matrix models, although in many cases prices are not that dissimilar.

Laser printers are the bee's knees. Using technology in many ways similar to the photocopier, the results are of the highest standards achievable short of buying your own printing press.

And if you buy a laser which can use the PostScript page description language which is becoming industry standard, the door will be opened to truly incredible font and graphics facilities.

MONITORS

So you're currently using a TV, and think a proper monitor would vastly improve things for you? Yes, a colour monitor is sharper than a TV, and some come with stereo sound as well.

But if you're mostly into wordprocessing, DTP, music or spreadsheets – or perhaps all four – do you really need colour? An Atari hi-res mono monitor has the sharpest display you're ever likely to see on an ST, and is less than half the cost of most colour monitors.

On the other hand, if you're heavily into games or graphics, colour is the obvious choice.

MICE

The Atari mouse that comes with your ST does the job – but when you compare it with certain others, you have to be honest and say it's comparatively chunky and clunky.

A new, high quality mouse will be a boon to the budding artists and DTP operators among you, and a considerable improvement, too, for those whose mice take second place to the joystick, but who still nibble around the Desktop and a serious application or two now and again.

Be certain that the replacement mouse is compatible with your ST, and insist on trying it out before you buy.

Apart from the usual style of mouse with a ball in the bottom, there are also optical mice which have no balls and which require a special mat in order to sense their position. Not every mouse will suit all users. As with most things, you usually get what you pay for.

left mouse button. Press insert twice while holding down Alternate key to replicate double-clicking.

● *Alternate plus Clr/Home: same as clicking with right mouse button.*

● *Alternate plus Help: Send the image currently on-screen to your printer. With no printer connected, your ST will "hang up" for about 20 seconds.*

● *Control plus Alternate plus Delete: Resets the computer – same as pressing the Reset button on the back of your ST.*

● *Control plus Alternate plus right Shift plus Delete: Cold reset – same as switching off, then on again.*

● *Q or Control plus C: If you're viewing a data file on-screen, either of these alternatives will return you to the Desktop.*

AUTO-BOOTING

Programs that you use regularly can be made to auto-boot – that is, they can bypass the Desktop and load automatically, provided you have the relevant program disk in the drive when you switch on or restart your ST.

The program's extension should be .PRG, and it must be placed inside a folder called AUTO on the disk's root directory. That simply means AUTO must not be inside any other folder.

First, create an AUTO folder on your program disk by choosing New Folder from the File menu and typing the name AUTO in the dialogue box, then copy the program file into the AUTO folder.

When you restart your ST with the disk in the drive, the program will load automatically without the Desktop appearing first. Life's now so much easier!

Jargon buster

alert – Alert messages tell you the operation you are trying to perform is impossible, improper or possibly dangerous. Sometimes your ST knows better than you do!

bee icon – When your ST is transferring or receiving information from a disk, it displays this icon to tell you it's busy. You can't perform any other operation while the bee icon is displayed.

boot – Switching on your system causes it to "pull itself up by its boot-straps" from a state of non-entity to a sophisticated machine ready to obey your every command (well, almost).

Close Box – The tiny box at the top left of a window which, when clicked on with the mouse, causes the window to close.

Desktop – Your ST's main operating screen, including menu bar and disk icons.

dialogue box – Boxes which appear on-screen requiring you to type something into them or click on options.

file – Collection of information held on a disk's root directory (see below) or in a folder (see below). There are data (information) files and program (application or game) files, each of which can be distinguished by various three letter extensions such as .PRG (a GEM program file) or .DOC (usually a wordprocessor document file).

folder – Your floppy or hard disk's electronic equivalent of an office folder, in which files can be placed.

GEM – Graphics Environment Manager, the program that creates and manages the Wimp (windows, icons, pointer, mouse) environment on your ST's Desktop.

icon – Graphical representation on the Desktop of disks, files and folders.

kilobyte – 1,024 bytes. Computer memory is arranged in units of bytes, which in turn are made up of bits, or binary digits, the smallest unit of computer memory.

memory – The electronic circuits in which information is held inside your ST. There are two kinds – ROM, or read-only memory, which is retained, and RAM, which is lost when the ST is switched off.

pixel – Your ST's video display (the live screen) is made up of tiny dots, or pixels. Pixels are arranged in a grid. A mono high-res monitor has 640x400 dots per grid; a med-res colour monitor 640x200; and a lo-res colour monitor 320x200.

public domain – Programs in effect donated to the public by their authors – usually programs written to answer a specific need, but which a wider audience might also find very useful. PD libraries typically charge £2 and £3 pounds per disk supplied, to cover administration, post and packaging.

root directory – If a file is placed on a floppy disk but not in a folder, it is said to be on the disk's root directory. A folder which is not inside another folder is also on the root directory. It is sometimes important for a file of folder to so placed – eg an AUTO folder containing a program which you want to boot automatically.

shareware – Try-before-you-buy software. A library will send you shareware disks for a couple of pounds or so per disk, to cover administration and post and packaging. If you like and continue to use a shareware program, you are honour-bound to register it with the software author or the library, at an extra cost, but not usually punitive.

size box – Small box at the bottom right of a window used to change the window's size.

Trash Icon – Desktop icon into which files and folders can be dragged for deletion.

window – Box in which a disk's folders and files are displayed. Windows can be resized and moved to suit your convenience.

write-protect – Floppy disks are fitted with a tab which can be positioned so that you can see right through the notch (in which case information cannot be written to the disk), or closed, which allows writing of information to disk.

When copying an original program or data disk, it is advisable to write-protect the source disk by opening the notch.

JOYSTICKS

If you're serious about your game-playing, you're going to need to a good joystick – and, believe me, there's nothing worse than getting stuck with an indifferent or even unwilling one.

Get one that's sturdy enough to stand up to all the stick you can give it, and which provides you with the greatest precision. Best to try for as long as possible before you buy. If the shop won't let you, go somewhere else, or try your friends', until you hit on the right one.

Naturally enough, when you find it, it's usually the most expensive, but no-one really needs to spend more than £20 or £30, even if you can go up to £70 plus for a programmable stick that seems to know more about how you play than you do!

DISK DRIVES

Apart from a printer, a hard disk drive would probably come highest on most people's want list.

However, they are prohibitively expensive for many people. If you can't afford one, why not go for a second floppy drive? It won't have the speed or storage capacity of a hard drive, but just think of all that disk swapping it would save!

MIDI

You may have bought your ST because you already had an instrument – like a keyboard or guitar – with Midi (musical instrument digital interface) capability.

The ST, of course, features built-in Midi, and so, with the right software, you can write tunes on your ST, store them and play the back through your instrument – and much more besides.

However, if you didn't already have a Midi instrument, and perhaps didn't even realise the musical capability of the ST, perhaps now's the time to think about a Midi keyboard or whatever?

There's simply loads of music software to choose from to suit all types of musicians and bank balances.

And don't forget to read *Atari ST User*'s regular Midi music pages in the Aspects section every month!

SCANNING

Into graphics, or DTP, or both? Get some pictures into your ST for touching up, enhancing or simply for printing as part of a newsletter, by means of a scanner.

Hand-helds, which, as the name implies, involve moving the scanner over the image by hand, are cheaper, Flatbeds, which are more like small photocopiers, more expensive but generally better.

MODEMS

Want to dial up the world, or maybe just a friend and a bulletin board or two, using your ST? Fancy being able to download inexpensive software direct from some boards?

There are dozens of modems available to suit all needs and pockets. Follow *Atari ST User*'s regular Communications page in the Aspects section for the latest in the world of Comms.

SOFTWARE

There are hundreds of programs of all kinds available for the ST. Whether it's music, DTP, wordprocessing, business, education, utilities or games, there are packages to suit everyone, from a few pounds up to several hundred.

Don't forget that you need not miss out on grounds of cost. There are many public domain and shareware libraries which provide programs at a fraction of the cost of commercial software.

You are expected to register if you continue to use shareware programs, but registration is usually quite cheap, too, and brings a host of benefits including a full manual, the very latest version of the program and news of further upgrades.

Five Atari Lynx must be won!

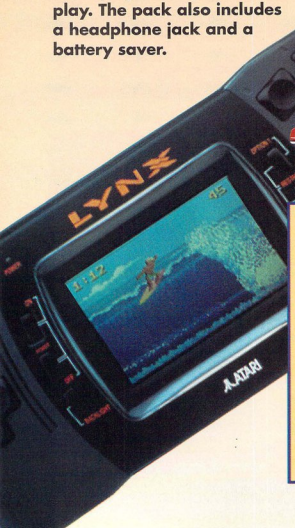
An Atari Lynx and Batman Returns game could be yours for a quick phone call to 0891 543311 which should cost you under £1* at cheap rate.

*This applies if background noise does not necessitate the repetition of answers

ATARI® Thanks to Atari UK and your favourite magazine you could win of one the best hand held game machines around – the Atari Lynx, supplied in the great Batman Returns pack worth £99.

The Lynx features16-bit graphics, stereo sound, high definition colour, a recessed 3.5in back-lit screen, multi-player competition and left or right handed play. The pack also includes a headphone jack and a battery saver.

£500 worth of prizes



It's so simple, just ring

0891 543311

HOW TO ENTER

You can enter as many times as you wish by answering the following questions. Please try to avoid background noise. The winner will be drawn from all the correct entries received.

1. **Who is Batman's crime fighting best friend?**
   a Cat Woman **b** Larry Hagman **c** Robin
2. **How much does the Atari Lynx and Batman Returns game retail at?**
   a £109 **b** £120 **c** £99
3. **Who played Catwoman in the film Batman?**
   a Michelle Pfeiffer **b** Meryl Streep **c** Jody Foster

You will be asked to leave your answers together with your name and full address, including your postcode. Please speak clearly, spelling out any difficult words.

Calls are charged at 36p per minute cheap rate and 48p per minute at all other times

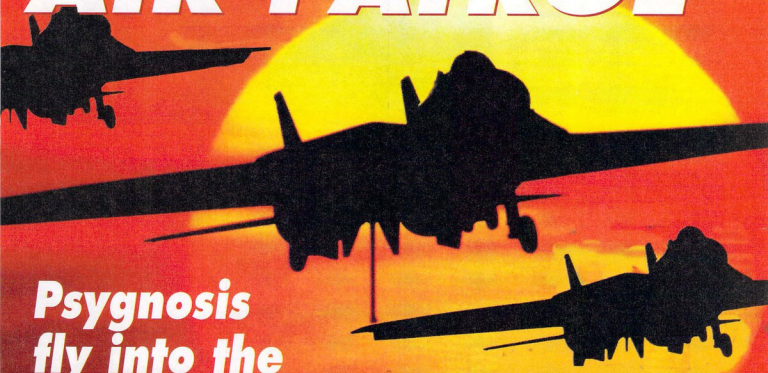
The four winners of *Atari ST User's* Naksha Scanner competition are Ralph Nelson-Cocker of Bucks, Nick Jelly of Surrey, David William of Cheshire and R. Keets of London.

TRIPPING THE FLIGHT FANTASTIC

MAY 1993

GAMER

COMBAT AIR PATROL



Psygnosis fly into the danger zone

REVIEWS... COMBAT AIR PATROL • THE GREATEST • STONE AGE • GUY SPY
UNIVERSAL MONSTERS • CIVILIZATION • JAMES POND • LOTUS CHALLENGE

ALSO... EXCLUSIVE FALCON GAMES NEWS • CRYSTAL KINGDOM DIZZY TIPPED
CHEAP SEATS • LEMMINGS RAVE • AND MUCH, MUCH MORE

Gamer GLOBE

Falcon flies into games world

Exclusive

Falcon games news has leaked through to the Gamer offices and we can now exclusively reveal that there are at least 20 leisure titles now in development, which is undoubtedly very encouraging for games players.

Some are untitled or their developers unknown in this country. Most of the companies working on programs for the 32-bit machine seem to be split between Britain and France.

The British firms include Mirage, Rage, Millennium, Domark, Digital Integration and Renegade, while in France Lankhor, Silmarils and Eurosoft are busy beavering away on their releases.

From Mirage, as reported previously, is Space Junk. Imagitec, who linked with Mirage for Humans, are set to release the program on the Falcon.

Rage are currently developing their biggest hit to date, Striker, and the Bitmaps are working for Renegade on a Falcon version of their Gamer Gold-rated smash hit, The Chaos Engine.

Millennium, the company responsible for Robocod 2, are developing two titles. One is the highly praised Rome AD72, an adventure set around the time of Julius Caesar. The other is entitled Daughters of Serpents.

A couple of flight simulations are also under development. Harrier AV88 reviewed a couple of issues ago will be published by Domark and will certainly be a big improvement on the original thanks to the Falcon, which is far more speedy than your bog-standard ST.

The other is Tornado by Digital Integration, featuring 3D polygon routines that have to be seen to believed, digitised music and a realistic flight model – and that's on the ST. The Falcon version promises even more.

Most will not be available until the end of the year, and in some cases not until early 1994. There is some good news though because there are two Falcon games on sale now from French company Silmarils.

One is Ishar, an RPG done in a Dungeon Master style and the other is Transarctica, a war/strategy game which was reviewed on the ST in last month's issue and received an excellent 89 per cent. Silmarils also plan to release Ishar 2, the sequel to Ishar.

Probably the most eagerly awaited game is Vroom 2 by Lankhor. The definitive racing game on the ST has been enhanced for the Falcon. One of the rumoured features is the ability to have up to four players playing at the same time.

Although not yet confirmed there are also rumours that British companies such as Electronic Arts, Ocean, US Gold and Psygnosis are planning releases, so you can see the future is looking very rosy indeed for Falcon game fanatics.

As soon as we know more news or have screenshots of future games we'll be sure to let you know.

Where do ya fink you're goin' pal?

I would like to ask everyone now to take off their hats and bow their heads. Your eager and always crude Gamer editor Paul Roundell is off.

The pressure of being the games world's top editor is just too much, so off he goes down to the offices below to work on second cousin twice removed magazine, *Amiga Action*.

The move came as a sudden shock to all at Gamer and several bouquets of flowers and wreaths have been arriving at a constant flow at the Gamer office.

We would like to take this opportunity to thank everyone, but a special thank you must go to Alex McBride (9) from Edinburgh who as soon as he heard the news sent in a tribute to our beloved editor:

Biff and Ben say "It's Alright!" Gamer's sexiest staff writers celebrate with a smile...

I like Paul
He's not small
He wears glasses
He talks funny
Bye bye Paul

Forever will we miss
A joke
A smile
A tear
A laugh
Bye bye Paul

Fly away to pastures new
Always we remember you
Cheer

Paul, he was just a mere puppet on a string!

Very touching, sniff sniff. Right now that's out of the way, down to serious business. We've eventually got rid of the bothersome git. No more will we have to write about rubbish games.

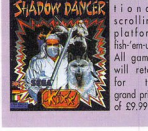
We're in charge and whether you like it or not, it's time for a culture shock. Tune in next issue for sex, drugs and rock and roll.

Getting your Kixx

Kixx have just announced their releases for the coming months. The brand new budgets which should be on your shelves as we speak are Fire and Brimstone, International Soccer Challenge, Shadow Dancer and Robocod.

Fire and Brimstone is a scrolling platform hack-'em-up. Shadow Dancer is a scrolling platform Ninja slice-'em-up. International Soccer Challenge is a 3D scrolling footy, err score – goals-'em-up.

Last, but not least is Robocod – a multi-directional scrolling platform fish-'em-up. All games will retail for the grand price of £9.99.



Ocean hit the Premier League

Ocean have just released details of their latest game, F A Premier League Football, which will be available in the next couple of months.

Ocean aren't usually known for their prowess in the sport games department – their forte is normally a platformer based on a film or TV programme.

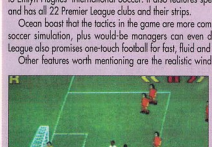
Whether it'll be any good is unknown as yet, but you never know, it might even be better than Sensible Soccer. The game does have the advantage of being the official Premier League computer game and has the Football Association's full backing.

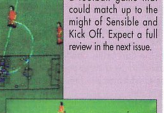
It features twin views – overhead, like Kick Off, and Grandstand, which is similar to Emlyn Hughes' International Soccer. It also features spectacular animated players and has all 22 Premier League clubs and their strips.

Ocean boast that the tactics in the game are more comprehensive than any other soccer simulation, plus would-be managers can even design their own. Premier League also promises one-touch football for fast, fluid and flowing gameplay.

Other features worth mentioning are the realistic wind and pitch conditions that actually influence gameplay.

All in all Premier League Football looks like being a football game that could match up to the might of Sensible and Kick Off. Expect a full review in the next issue.





Premier League - A serious challenger to the great Sensible Soccer and Kick Off?

We are the champions!

Championship Manager 93 is an updated version of Domark's Championship Manager, a brilliant, err, football manager simulation. It has been upgraded and the new version will have all the correct players' names, ages and statistics for all the clubs in all four divisions of the English league (sorry you Scots!).

There is also a realistic player generator which keeps on making up players, so you'll be able to play the game until you die. This time around you'll also get a chance to take control of the reserve team, plus you'll also get more control over your team scouts.

Other changes include the scrapping of the totally useless Domark Trophy, which has been replaced by the slightly less useless Anglo-Italian Cup.

Everything has been updated and the games programmers have also added more realism making it more enjoyable to play.

The updated version should be out in April/June, but if you bought the first one fear not, because when the game does eventually come out you will be able to send your disks back with £7.99 and receive the brand new updated version.

INNARDS

More cynical by the month...

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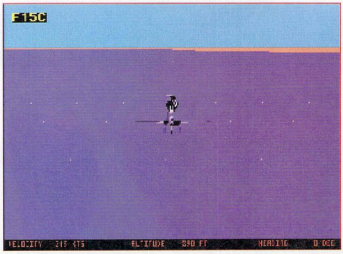
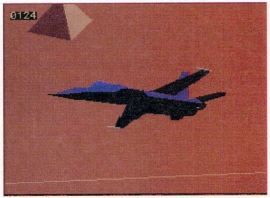


A rear view of your plane is available...

But the unimpressed co-pilot turns away in disgust



The fly-by option is great – fast, smooth and with realistic effects

COMBAT

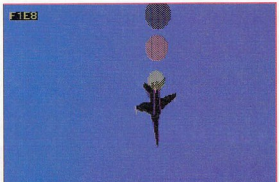
There's no let-up from Merseyside as Psygnosis take to the skies in a belated attempt to bash Saddam

When I began working on Gamer one of the very first games I laid eyes on was the abominable Carl Lewis Challenge. It was published by a company called Psygnosis, which at the time meant nothing to me.

A couple of months later, though, we were sent Air Support from the same place, and on loading it up we were faced with what in our opinion was one of the poorest flight sims ever.

On the evidence I'd seen thus far I began to formulate an opinion of Psygnosis – I decided that they were probably one of the poor relations in terms of quality software releases. How wrong I was!

I soon learned that these were the people who brought us Lemmings, which alone is almost enough to push Psygnosis into the publishing aristocracy bracket.



It's not all "plane" sailing – things do go wrong from time to time

BADLY TIMED?

Since then though they have blessed us with the Lemming sequel, proving – to me at least – that few can match them in terms of consistent quality. Combat Air Patrol does nothing to dispel this belief.

One would have thought it was a bit late to bring out a simulation based on the Gulf War. On the other hand, we are still getting product relating to the two World Wars, so I guess it isn't too badly timed.

So the Gulf War it is then – the primary objective being the expulsion of Iraqi forces from within the boundaries of Kuwait. The action begins around Autumn 1990, shortly after Saddam and his troops overtook Kuwait, but before the Allied invasion.

Of course, if you achieve this objective it doesn't have to stop there, and you can carry out as many retaliatory measures as you like.

It seems as though the programmers are unaware of the British involvement in the conflict since we take part in the game as an American, stationed on the aircraft carrier USS Theodore Roosevelt.

Combat Air Patrol happily follows the trend of several recent flight sims in that it is very easy right from the outset to simply jump into a plane and enjoy a quick flight without consulting several dozen pages-worth of manual beforehand.

That's all very well – a very good feature indeed, in fact – but it is the long-term challenge of any game of this nature which eventually determines its success, and CAP doesn't disappoint.

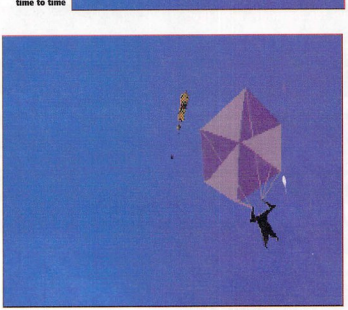
From the menu at the start you are led into the briefing room – a very nice picture of several burly men gathered around a projection screen – to select a mission.

The mission you choose determines whether you will be equipped with an F14 Tomcat, or its newer but less impressively named brother, the F-18 Hornet. This done, it's off to choose which pilot you'd like to be, making your decision based on experience, temperament, physical fitness and any aversions to heights or jet engines they may have.

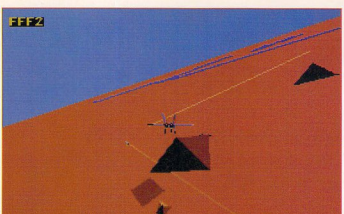
What then – get that bird up in the air? Hell no – we need weapons, and what better place to get some than the handy weapons select screen?

It isn't perhaps surprising that the Yanks began to take out British troops in the Gulf when you take a look at these – every kind of weapon the intrepid pilot could ever need, and far too many to ever run short.

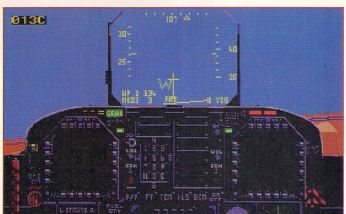
The Tomcats are limited to air-to-air missiles, ranging from close range cannons to long range missiles, whereas the Hornets can carry the deadly accurate AGM-62 Walleye air-to-ground glide



But don't worry – just hit the ejector button and you're free!



Homing in on an enemy aircraft is difficult...



...especially when you can hardly see over the dials

AIR PATROL

Take an instant flight, embark on a mission, or consult the pilot roster and begin a campaign

After each mission you'll be briefed on your success

VISION	GGGGGGGOOO
AUDIO	GGGGGGGOOO
DIFFICULTY	GGGGGGGOOO
LASTABILITY	GGGGGGGOOO

Easy to play, fast and most importantly, very enjoyable - CAP provides excellent action and longevity, and finds itself in the leading pack in the race for best flight sim.

87%

Publisher	Psygnosis
Developer	Ed Scio
Disks	2
Price	$29.99
HD Install	N/A
Size	1 meg

bombs. With weapons attached it's time to take to the skies and kick some proverbial bottom. Getting your plane airborne couldn't be easier – it's up and away from the flight deck at the touch of just two buttons.

Even if this proves too difficult there is the option to start your mission from a mid-air position above the target, though a strange quirk here is that the engines still need to be started, and any delay in doing so results in an inevitable dive and crash.

After seeing a demo of CAP a couple of months ago, I was surprised to find that flying the plane in the finished version isn't quite as smooth. Admittedly, there is far more detail, but I was a little disappointed nonetheless.

A PLEASURE

Not too disappointed though – it's still one of the smoothest sims you'll come across, and the speed and responsiveness of the controls make the whole affair a pleasure to play.

The missiles are easy to use, and after some initial trouble actually finding something to hit, I soon became familiar with using the waypoints, and revelled in choosing the "follow missile" option, whereby the perspective stays right above the projectile until impact. Particularly impressive are the number and flexibility of the external views, not only of the aircraft, but also of any pilots/co-pilots who decide to abandon their mission and return to terra forma by means of a parachute.

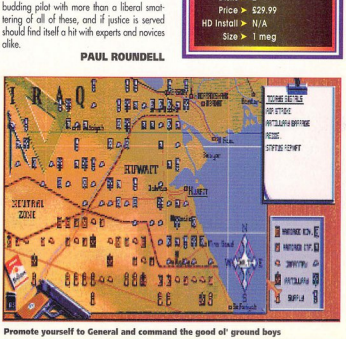
Fly-bys, overheads, 360 degree external scrolling and even a view of your aircraft from space (for some reason) combine with the strategy element to make gameplay truly excellent.

Where the "extras" really show off, though, are in the game's capability to zoom right in on the exterior of the aircraft – it's almost possible to feel the searing heat of the afterburners. An array of illuminated cockpit dials top off the overall feeling of quality.

Once familiar with the aircraft controls, you can if you wish take on the role of General, and command the ground troops to further destroy the enemy.

Flight sims are becoming increasingly popular in the home computer market, and in order to achieve any success they must combine a number of features, namely ease of use, quality of flight and overall enjoyment of gameplay. Combat Air Patrol provides the budding pilot with more than a liberal smattering of all of these, and if justice is served should find itself a hit with experts and novices alike.

PAUL ROUNDELL



Promote yourself to General and command the good ol' ground boys

UNIVERSAL MONSTERS

Everybody knows how Ocean just love to buy up licences – if an action film is around on general release, the chances are that sooner or later the game will come our way courtesy of the boys from Castlefield.

Arnold Schwarzenegger, Bruce Willis, Mel Gibson, Kim Basinger and more have all had the pleasure of witnessing their pixellated forms wandering around an artificial world on our monitor screens, and all to varying degrees of success.

Now Ocean are moving in a slightly different direction.

"What – leaving the licensing malarkey?" I hear you cry.

Oh no. In fact nay, nay and thrice nay, as Dick Emery or someone like that used to say, because they have in fact done just the opposite.

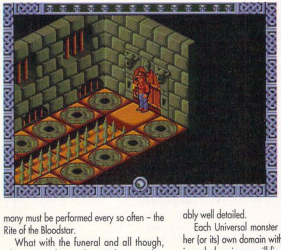
Instead of purchasing the rights of exploitation for a single movie, they've taken a trip to Hollywood, parted with huge amounts of wonga, and walked away with the game rights to all of Universal Studios' monsters.

Yes, monsters – you know, like Dracula, and Frankenstein, and his bride, and the Wolfman and the Mummy and the Creature from the Black Lagoon (you mean Ben? – Ed). All six have sold their collective souls and appear en masse in this nostalgic isometric adventure.

The story goes that famous vampire hunter Professor Van Helsing has died, bequeathing his thankless job to grandson Alex.

The aforementioned ghoulies have long since been captured and banished to another dimension from where they can inflict no further harm on two-bit Tinseltown scriptwriters, but in order for them to remain there a ceremony must be performed every so often – the Rite of the Bloodstar.

Ocean own more dodgy licences than a cowboy taxi firm, and they're about to add some more. Or are they?



Alex enters the dungeons of doom. Wooooooo...

What with the funeral and all though, Alex misses the number 39 bus to Other Dimensionsville to perform the ceremony, and the monsters begin to enter our world through Van Helsing's castle. Not only that, but by some mysterious and unexplained circumstance, the Bloodstar has been broken into six pieces, which are spread around the castle. With grandpops dead, it's up to you as Alex to find the six pieces and return the monsters to their limbo.

Considering the limitations of this type of game, the graphics are very nice indeed. The Alex sprite is large and chunky, and the backgrounds, while not differing a great deal from each other, are colourful and reasonably well detailed.

Each Universal monster commands his or her (or its) own domain within the castle, and in each domain you will find – or at least you should unless you're daft – one piece of the Bloodstar.

Find the all-important bit and you are in a good position to kick the beasty back to where it came from. A good position, but not a great one, because each monster has to be confronted with a particular item before they can finally be vanquished.

The obvious example is Dracula, who will only be subdued by a crucifix. The Creature from the Black Lagoon takes a harpoon and Wolfman a silver bullet and so on.

An isometric perspective prevails, as you can tell from the screenshots, and the rooms of the mansion scroll smoothly throughout.

Apart from the obvious problem of avoiding the monsters long enough to enable you to perform the ritual, there are pitfalls and booby traps throughout the castle where it's easy to come a cropper.

Minor monsters roam freely in all the levels: unlike the main characters, these can be killed, although it's a tough task since Alex doesn't carry any weapons.

As you would expect of a rich person, your grandfather didn't trust people with his treaures, and consequently kept most of the rooms in his home locked.

Therefore keys play an important role in the game, not only for access to rooms where the monsters may lurk, but also in enabling you to find treasure and magic potions, which provide you with temporary powers of ESP and invincibility.

Hidden platforms, huge remote spikes and a host of other nasty surprises are littered around the place; useful items are the teleporters which transport you from one end of the castle to the other.

A menu can be accessed from any point in the game, giving details of your potions, Bloodstar count, and the remaining strength of your adversaries.

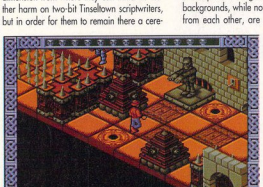
Universal Monsters is a large enough game, and it's important to keep on your toes at all times for threats from all kinds of places.

Due to its size though, there are occasions when little or nothing happens for minutes at a time, and tedium begins to creep in.

This type of game was popular about five years ago when Spectrums were still in demand, and Universal Monsters will not be looked back upon as a gaming milestone.

In all fairness though, the programmers have worked hard at bringing the game up to date, and have succeeded to a point. Universal Monsters doesn't make my list of all-time favourite games – in fact it doesn't receive a nomination – but it's easy to get into, easy to play, and provides a real challenge for anyone prepared to take a step back in time.

PAUL ROUNDELL



"Frankie, do you remember me..." Alex gets down to the new-look Sister Sledge

Is that Suggs out of madness with the sunglasses and rigamortis?

Not even Indiana Jones could get out of this spiky stew

VISION	66%
AUDIO	66%
DIFFICULTY	66%
LASTABILITY	66%

Nothing in particular to write home about – just a good, honest platformer with decent sound and graphics, and the odd twist to elongate it's appeal.

79%

Publisher ➤	Electronic Arts
Developer ➤	Dinamic
Disks ➤	1
Price ➤	£25.99
HD Install ➤	No
Size ➤	½ meg

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Guy Spy

The name's Spy, Guy Spy. Readysoft are back with an action-packed secret agent thriller. Remember Space Ace and Dragon's Lair? Remember great graphics and sound, but no playability? Well don't worry because hopefully Guy Spy is not going to go the same way.

I don't know about you, but I've always wanted to be a secret agent. I used to sit down and see Sean Connery bop around being James Bond on my TV and then as soon as it had gone off I'd grab my toy gun and kidnap my gran, not letting her go until she told me where the Russian missile base was.

Ahem, that was until my dad told me to stop messing about and go to bed. I pleaded with him: "Dad you don't get it do you, the Russians are going to bomb America and it's up to me to save the world!"

One quick smack around the ear later and I was safely snuggled up in bed dreaming of Russian spies, car chases and sexy women (not again – Ed).

There are four good things about being a spy on TV. The first is that something exciting happens every day – for instance you're guaranteed someone will try to take your life at least once a week.

The second ties in with point number one – i you will never get killed. Jump off a bridge, crash a car, fight with knives, guns, missiles and you'll never ever find yourself six foot under. Good eh?

Inventions

Third, you get to play with loads of really great inventions made by an old professor geezer.

Point four is the best though, because every single beautiful woman on the earth falls in love with you and you get loads of rumpy pumpy. How do you get to be a spy? You certainly don't see the job advertised in your local job centre. I can honestly say I have seen every James Bond film there is and now that the Man from U.N.C.L.E. is back on you can't get me away from the goggle box. Wouldn't it be really good if instead of being a staff writer I could be a spy for a day?

My 10,000 letters to Jimmy Saville never worked, so it was down to the good old ST to make my dreams come true. As it happens, the other day a brand spanking new copy of Guy Spy landed with a resounding thud on my cluttered desk. Hurrah! Where did I put that toy gun?

Guy Spy is probably best described as an action/adventure game and, err it's probably worst described as a step-ladder throwing prawns at a disgruntled male.

You play the role of a secret agent who has the fortune of having Spy as his surname. Excuse me while I turn into a Jackanory presenter. Cough, cough... Once upon a time there was a spy called Guy, the government's most trusted and daring agent. His mission was to stop a villain known as Baron Von Max at all costs, before he took over the world using his doomsday machine.

The dangerous doomsday weapon was fuelled by the legendary crystals of Armageddon and the bad-ass Baron managed to locate them. Guy Spy has to get all the crystals before Von Max to make the world safe once more...

The gameplay differs greatly from level to level. As an example, on the first level Guy is in an underground station and he has to kill a certain number of enemy soldiers before he can progress.

A couple of levels later and he has to ski down a hill and avoid all the obstacles, including grenade-throwing henchmen.

The graphics are amazing and very akin to those found in the Space Ace and Dragon's Lair series. Our hero's sprite fills a lot of the screen and is competently animated.

Guy Spy pees all over something like Dragon's Lair from a great height, simply because it's much more playable – but it's not quite as playable as it should be. The ability to completely control your character was once unheard of in a Readysoft game.

Difficulty

There are two major problems with Guy Spy, the first being the difficulty level.

The first level is quite hard and had people in the office grumbling and putting their joysticks down in disgust. I did the first level on my third go, but that's because I'm a games-playing hero.

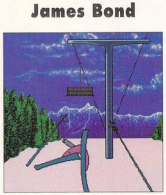
After the first level things get easier, but then all of a sudden you'll get a really hard level and boy, is it frustrating. The game has 13 levels, but on the aforementioned third go I got to level seven.

The second problem is that the game is quite sluggish and sometimes the controls don't respond as they should, thus killing you in the process.

Overall Guy Spy is a good game, but it's not quite as great as it could have been. Guy Spy is everything that Space Ace and Dragon's Lair weren't, but due to the difficulty level, controls and slight lack of playability, I wouldn't recommend it.

JONATHAN MADDOCK

The perfect game for anyone who's ever fantasised about being James Bond



Here's the star of that last clip, Guy Spy. Well done, you win £250 for your totally obvious put-on fall. Ho ho ho

Clunk, click. This is a .45 Magnum, the most powerful hand-gun in the world and it could blow your head clean off!

VISION	9
AUDIO	6
DIFFICULTY	8
LASTABILITY	4

Guy Spy gets top marks in the sound and vision department, but is let down by lack of playability. It is also a bit on the slow side. A throwaway spy thriller.

68%

Publisher	Empire
Developer	Readysoft
Disks	4
Price	$25.99
HD Install	No
Size	½ meg

STONE AGE

Dinosaurs, sliding walkways and 100 caves to explore

Everybody says that you shouldn't judge a book by its cover but, like it or not, people do. I know I do, which is why I thought Stone Age was going to be a gross turkey.

The cover features two of the most gormless looking dinosaurs I've ever seen, and basically I thought that this game would pale into insignificance next to Combat Air Patrol and Universal Monsters. As usual, I was completely wrong...

Stone Age is a swift poke in the eye with a sharp stick for all those who think that smooth graphics and a sexy soundtrack are the be-all and end-all of computer games.

Basically you have to guide your friendly tyrannosaurus rex out of the 100-level cave system and to safety. What he's doing down there in the first place is a mystery to one and all, but help our directionally-confused reptilian chum you must. The first few levels you encounter are simple "get to the exit" efforts – after that they begin to get a bit harder. You have to find keys to open locks before you can get to the next level, and on latter levels the locks become multiple, making life even harder.

The levels comprise of large, stone walkways, some of which collapse when you walk over them, and platforms which move in a geometric direction.

MOVING BLOCKS

The blocks move in various ways – some go from left to right, some up and down and some all ways. They can be shifted independently of your little beastie, but most can only be moved one way, so once they're moved that's it.

By walking onto the moving blocks you can move them while your character is still standing on them, effectively using them as a type of vehicle.

Along with the moving blocks that get you around the screen there are teleporters which will take you from one location to another. It's also worth keeping an eye on what the exits look like – those with larger ladders will skip you further along in the levels instead of just plonking you on the next one.

Graphically the game is quite disappointing – your character on-screen is quite small and the animation is nothing outstanding, but it's adequate.

Ignoring the rather ropey foreground graphics, the backgrounds are pretty spectacular – there are even a couple of scanned images in there somewhere, so they make up for the for ground iffy-ness. The screens are quite small – you never have to scroll around them.

The sound is quite impressive too – there are practically no spot effects but the tunes are very good indeed, plus there are eight of them so you're not likely to get bored in a hurry. The music is relatively easy listening without being totally benign. And the programmers have thought up quite a nice way to order the music – you don't just have to pick one tune that will play non-stop through all the time you are playing.

All you do is type in the corresponding number to the tune you want so you can have a mixture throughout your game.

One of the early levels – not much going on

VISION	6
AUDIO	8
DIFFICULTY	7
LASTABILITY	9

75%

Stone Age may be stone age as far as the programming side goes but for good, old-fashioned playability you can't beat it. Would have been better released as a budget.

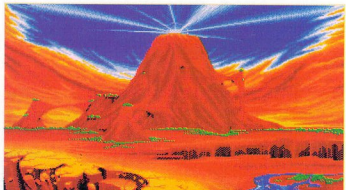
Publisher	Grandslam
Developer	Eclipse
Disks	1
Price	$25.99
HD Install	N/A
Size	1 meg

SIMPLE PUZZLE

Options wise there is quite a lot you can change. You can prevent the appearance of the melting block and other hindrances, for instance.

When it comes down to it, Stone Age is quite a simple puzzle game, but as with all the classics, a simple idea will be easier to execute than a complicated one.

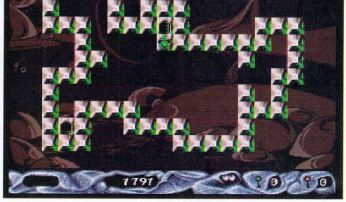
Don't be put off by the lack of flashy graphics and stunningly original gameplay – Stone Age is well worth a look despite the stupid looking dinosaurs. Had it been a budget title then it would have been a winner.



This looks nice. Irrelevant, but nice

BEN STYLES

Blimey, I'd rather do maths homework than this lot!



No wonder they all died, you've got to be thick to get stuck somewhere like this

OK, so you're strapped for cash and you want some really good games. It's far too embarrassing to buy a budget, so what on earth are you going to do?

Well, one of the best ways of getting more for your money is to buy a compilation. True, they are risky because you almost always seem to get an awful game in your three-pack.

Hmm, well not this time because Beau Jolly have decided to release a package called The Greatest and by golly they are all really great for a change.

Let's start for safety's sake in reverse alphabetical order. The first in this three-pack is Shuttle. The key word when reviewing Shuttle is realism. Flight simulators are absolutely nothing when compared to something like Shuttle, which is by far the most complicated simulator the games world has ever seen.

As an example F-19 Stealth Fighter has four small pages of flight instructions and which key does what, whereas Shuttle has a massive poster containing literally thousands of buttons and knobs that you can press and play around with to your heart's content.

Shuttle is definitely not for the beginner who will find it just too technical. It's also not a piece of software which you can boot up and play for quarter of an hour when you're bored.

BREATHTAKING VIEWS

The missions vary from the first test flight where the shuttle was "piggy backed" on to a Boeing 747 to the launch and repair of the Hubble telescope. The graphics are rather fab too with 18 views available including outside the shuttle. So, you can see breathtaking views of space that really put life into perspective, er perhaps.

Shuttle is the definitive and most sophisticated simulation that you're ever likely to find on your ST. It gives the compilation a good bit of variation and is a worthy inclusion although it is difficult and might not appeal to everyone.

Next up to ponder over is Lure of the Temptress. Lure is an interactive adventure with a difference, the difference being "virtual theatre". I can hear you all now: "What's virtual theatre then Mr Gamer chap?"

Well, in normal adventures, the characters tend to appear once and then you'll never see them again. In Lure each of the characters leads his/her/its own life. For instance if a characters says "I'm going down to the tavern for a swift jar," then you will find that character there. This makes Lure one of the most realistic adventures I have ever played. It's cute little ideas like virtual theatre that separate good from average games.

You play the part of Diermont, a rather reluctant hero who has to save his world from dribbling and vicious creatures known as Skorl and discover who the Temptress is.

Another good thing about Lure is that you start the it without knowing what to do. Diermont is plonked in a dungeon and you are not told where to go or what to aim for. So, as you progress you find out about what's been going on.

The graphics in Lure are excellent with some wonderful backdrops. The whole thing is controlled via the good old mouse and is so simple even Terry Christian would be able to play it! Err, then again maybe not! If you're looking for an adventure to keep you occupied for a couple of months then look no further than Lure of the Temptress.

Last up is Jimmy White's Whirlwind Snooker. Before Jimmy's I personally thought that playing snooker on my computer would be an incredibly sad thing to do. I mean you may as well go down the pub and have a few beers and challenge your mates at proper snooker rather than sit at home and be lonely with the mouse as your only friend.

How wrong can someone be. Jimmy White's Whirlwind Snooker is the best snooker game for any computer ever. For starters it's just so realistic that you can almost be there except you have to chalk up your mouse rather than your cue.

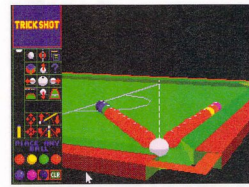
CLASSIC SNOOKER

It's also the fastest, smoothest snooker game, plus all the balls act like proper snooker balls for a change.

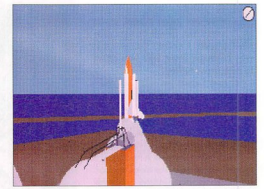
If you're a snooker fan or even if you're not then you simply must have Jimmy White's in your collection. It's a modern day classic. Jimmy White's is fit for inclusion in any compilation.

OK, there's your three-pack compilation and as you can see all of them are amazing and classics in their own rights. If you don't own any of these then I strongly suggest you buy this compilation. If you think about it, you're getting each one for a tenner anyway. It's a bargain, guv.

JONATHAN MADDOCK



It's time for a trick shot or two. Where's John Virgo when you need him?



5...4...3...2...1... Boom! 'I told you not to press that button'

GAMER GOLD

THE GREATEST

By golly it's Beau Jolly and they've just brought out a new game. It's called Lure of Jimmy White's Shuttle or something. It's the greatest, err apparently

SHUTTLE

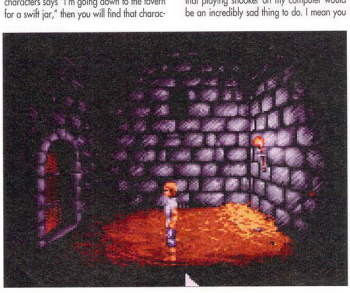
LURE OF THE TEMPTRESS

JIMMY WHITE'S SNOOKER

The Greatest is just that, the greatest compilation I've seen for ages and ages. It quite literally spurts with value for money. At last, a compilation that actually contains good games. Buy it chums.

90%

Publisher ➤	Beau Jolly
Developer ➤	N/A
Disks ➤	8
Price ➤	£29.99
HD Install ➤	Yes
Size ➤	1 meg



Lure of the Temptress an adventure game and a half and full of green lizard thingies. "Oh globits, where's Boney?" said Berk

Blimey and all I said was "Are you starting?" and then clubbed the copper to death with a cricket bat!

The different levels of play in the game really work – the easy game is easy and the hard game really is no-messing hard!

When you start, this screen gives you a quick low-down on what's going on. A nice touch, I thought

CIVILIZATION

And it's about time too, good lordy me. It's been out on the PC and the Amiga for about 20 years. Now at last ST owners can play God – well, almost

Civilization is, for those of you who don't know, probably one of the most in-depth games of all time. You take the role of the all-singing, all-dancing leader of a civilisation, which you must guide and develop to the best of your ability.

You begin with a bunch of crusty looking settlers – y'know, dog on a string and can of Special Brew types. You must find a suitable area to stick them start to build up your civilisation.

A very important aspect of the game is the technology that you have to nurture. When you start off your people are no more than savages and pretty stupid savages at that.

It is up to you to educate them by building schools and universities. You have to employ teachers and learned people to invent things and discover basic skills, such as the alphabet.

When you have a combination of skills – for instance, combustion and physics – you will be able to fly. This is a typical combination necessary to attain an objective.

It's not just up to your inventors and scientists to create things. You can trade secrets and skills by making allowances with other civilisations – all you have to do is weigh up whether or not it's worth your while.

Education, along with everything else, depends on money. Making money is relatively easy but you have to strike a fine balance between all the different aspects of the game, for instance.

You will no doubt start with a fairly good agricultural community but this will produce money slowly so it's worth creaming off a percentage and putting it into industrial research so that you can automate your agriculture and move the work force into industry.

To organise money to spend on education you have to organise the tax rate. Remember to keep your people happy or they will overthrow you, so don't make the taxes too high.

Another way of keeping morale up is the construction of libraries and public buildings.

Alternatively you can construct one of the great wonders of the world. There are all the usuals, like the Hanging Gardens, but an added bonus is that some of them are useful.

If for example you've built pyramids and you want to change your mode of government then you don't have to go through a period of anarchy which can harm your economy.

If you want to keep track of how your civilisation is doing there are all sorts of checks you can do, such as which is the happiest civilisation and which is the wealthiest.

You've probably noticed that I haven't mentioned the fighting, plundering, raping and pillaging.

Well for the most part of the game the fighting plays a pretty minor role. You can of course go hell for leather and try and destroy all the other civilisations on the planet, but your own is likely to collapse. You have to put up with all the usual things that will happen to a civilisation through history, like causing revolutions to change the mode of government ruling at the present time.

All in all Civilization is probably the best game released this year. It's untouchable as far as strategy and playability goes – a must buy.

BEN STYLES

VISION	●●●●●●●●●○
AUDIO	●●●●●●●○○○
DIFFICULTY	●●●●●●●●○○
LASTABILITY	●●●●●●●●●●

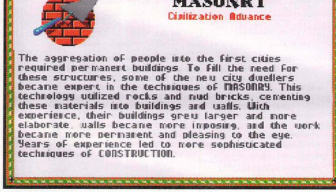
Civilization is probably the best buy for the ST in a long while. It's not too bad on disk, either. With only four disks to swap it's not too annoying.

90%

Publisher ➤	MicroProse
Developer ➤	MPS Labs
Disks ➤	4
Price ➤	£29
HD Install ➤	Yes
Size ➤	1 meg

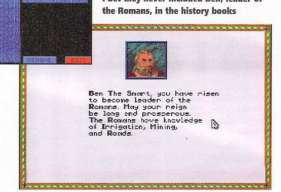
GAMER GOLD

This screen shows you how your city is doing, and whether or not you can build anything today



One of the skills you can discover. Combine this with currency and you can create Construction

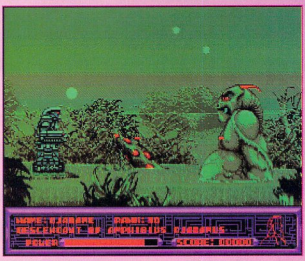
I bet they never included Ben, leader of the Romans, in the history books



The CHEAP seats

Once again Cheap Seats returns to rescue all you poor games players out there. This month we have a special on games developed by Silmarils, all of which have been full price at one stage or another

Metal Mutant



Cheap Seats game of the year so far! This little number is just out on budget after a few years on the full price market, and it's still way ahead of its time.

You take the role of a large robot capable of morphing into different shapes. You have been placed on an experimental world made by humans, but as yet it's still pretty hostile so it's your job clean it up.

As I said, it's a human world but the only thing human about you is the brain that you have tucked away inside your bonce – the rest of you is metal.

You can assume three forms – a dinosaur, a Robby the Robot box-type thing, and an upright walking Cyborg-type thing. As you progress through the levels you pick up all sorts of different skills and gadgets to fit onto your various different guises,.

They're far too numerous to list here because every different incarnation has eight different ones. Some you start with but you pick most of them up on the way.

Your mission is to kill as much as possible, which is fine by me – mindless violence never went amiss. The tricky bit is finding out which weapon to use for which beastie. It's an all-round jolly jape.

Crystals of Arborea

Time to get out the Led Zeppelin albums. This is a strategy and adventure game set in the land of Arborea with heavy shades of Tolkien fantasy.

In a far off land called Arborea, Morgoth, the local genocidal maniac, has filled the world with chaos, whatever that is. So the gods being the kind, unjudging, sentient beings that they are have kindly destroyed the whole world by flooding it – except for one small section.

This section is Arborea, home of the four Crystals of Harmony. You have to find the crystals and save the world which shouldn't be too much of a challenge.

First you have to choose a bunch of unnervingly willing psychopaths who would like nothing more than a good punch up to help you beat the Lord of Chaos, Morgoth. Yes, very mythical...

Basically it's a Dungeon Master rip-off, but it's not particularly well done. All the character selection is pretty much the same but actual movement is slightly different. There are bags of features to it – 1,600 locations puzzles and overall strategyness abounds. Worth a look for the Dungeon Master fans but not really possessing long lasting appeal.

Storm Master

Another game for the ageing Magnum fans. This time the setting is Eolia, a remote land where the wind always blows and the whole population either hang-glides or hot air balloons (joke?).

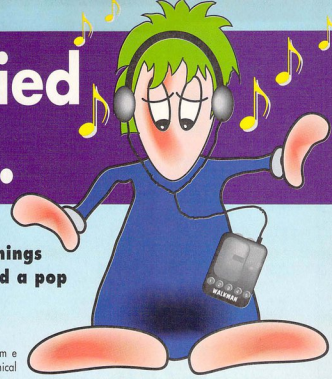
With the wind always blowing there is no need to use the sea and land for the transportation of goods or the movement of troops – you just stick them in balloons.

The great master who was generally a good guy as far as one can glean has been murdered and so the land has been plunged into chaos. Seeing his chance, the omnipresent nasty enemy (in this case his name is Sharkaan) is causing all kinds of hassle.

You have been elected as the new leader and you've got to basically get your country's head together and as fast as you can, and learn about how the wind transport works and how to harness it – tricky.

It's a distant cousin of Transarctica which is another Simaril game. The principle's the same only you don't have to drive a train. Again worth a look for the strategy types among you but not much lasting appeal.

They're justified and ancient...



...and they like to, erm, walk off cliffs. A bizarre tie-in between those suicidal lemmings and pop-terrorists the KLF is about to yield a pop record. Ben Styles went to find out more

Tie-ins between software firms and record companies are the in-thing these days. Mario, Tetris, Mega-Lo-Mania and Sonic the Hedgehog all have records on sale or well on the way.

Latest in the long line of computer-generated music makers is Lemmings 2, so we went down to Food Records in London to see what's cooking there.

Behind the production are Ian Richardson and Nick Coler, whose company is famous mainly for the discovery of Jesus Jones, whose lead singer coincidentally owns half of the studio.

The person mostly responsible for their involvement in the Lemmings record is games-playing A&R man Miles who was approached by Psygnosis and decided it would be a bit of fun. Money is definitely not their motivation for the record – they don't expect to make much out of it at all.

As with the vast majority of studios today, most of the work is done with the help of an Atari ST which is linked to all the studio Midi equipment. In essence the ST is the control panel for what goes on before the actual mixing stage.

It is used to map out the music and quantise it before it is recorded on tape or DAT. It is also possible to chop and change large chunks of the piece. Food, like many studios nowadays, use Cubase, one of the most popular ST music handling packages.

Apart from the ST which is used in the production process there are two huge samplers which deal with the bulk of the instrumental signals before it is laid out in Cubase.

The studio itself is quite a small place, and not really knowing the workings of such a place, I was baffled by the presence of a large TV which was suspended above the mixing desk.

"What's that for?" I asked innocently, thinking it was going to be a key part of some technical video-making process.

"I'll show you," and so Nick turns on the TV showing me today's edition of Yogi Bear, "and the horse racing pretty important," he says. So much for the high-powered world of pop.

This is not the first KLF-fronted record that Ian and Nick have been involved in. Remember the fun but nevertheless ridiculous Doctorin' the Tardis that got to number one a few years ago? You will be relieved to know that it was produced by the KLF team under another name.

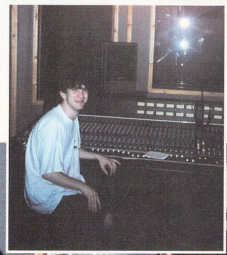
Those early successes got Nick and Ian on Top of The Pops wearing silly costumes and the like. Possibly the most remarkable thing about the fame was the acquisition of a brand new Jaguar XJS from Freddie Starr (honest) following a bet on the record.

About the only thing Ian and Nick had in common in the first place was that they both had an interest in music and had worked in mental institutions at some point in their life. They didn't reveal whether that was a help or a hindrance!

The record itself will not just be something you listen to, for on the 12 inch mixes will be solutions to various levels of the game. We are not entirely sure how they plan to incorporate them onto the vinyl – let's hope it's not a backwards message or they will probably end up being blamed for another teenage suicide!

● *Lemmings 2 – The Record will be available in mid-April at the usual price. The company's new dance label, Synthetic, will be dealing with distribution.*

Ian Richardson even looks like he knows what he's doing



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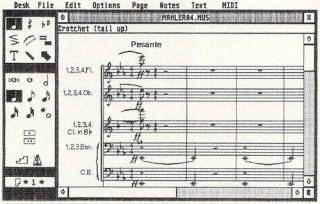

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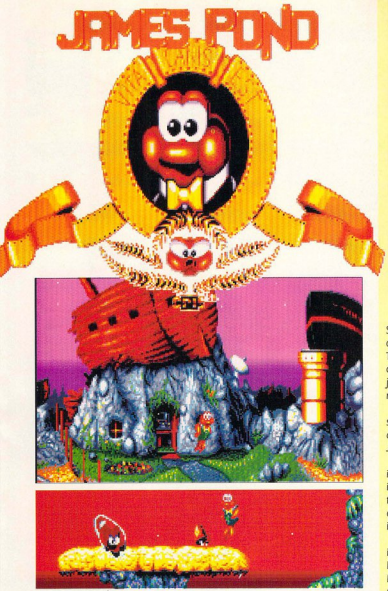
BLAST from the PAST

This month we take a peek at Lotus Esprit Challenge and James Pond, and yearn for the days when originality was abundant



JAMES POND by Millennium

Sometimes you can't deny the fact that an original game is a lot better than its sequel. The main reason is usually the fact that the original is, err original and the sequel is just a re-make which presents nothing new.

James Pond was lucky to have a decent sequel, Robocod, but it was still just a standard platformer with some smart graphics. James Pond, though, is entirely different.

The whole game is set underwater and in each level James is given a set task. For instance in mission three, entitled A View to a Spill (ho ho). James must blow up an oil platform which is allowing oil to leak into the sea.

Speaking of levels there are 12 missions in all, all humorously titled. Fishfingers, Leak and Let Die, Moneyraker and The Mermaid who Loved Me are some of the more amusing titles.

James, being a secret agent, can spend a limited time out of the water, but his fishometer (energy) will start to drop and he will eventually die.

The graphics are done in a very cartoon-like style and are pleasing to the eye. The actual idea, though, is a master stroke – a secret agent fish who battles against the evil Dr Maybe who is planning to hold the world's leaders to ransom by pumping poison into the sea.

James Pond is certainly one of my favourite games and I don't think I can knock it. After playing it for a few days I found that James Pond has, for me, actually got better with age.

Great graphics, smart sound, brilliant playability plus awesome addiction equals a classic. If you want some fishy frolics then James Pond is available on Gremlin's budget label GBH for £8.

LOTUS TURBO ESPRIT CHALLENGE by Gremlin

If there was ever a genre popular with virtually every gamer, then it's the race game. Whether it's humans, bikes or cars, everyone loves a good thrash at racing, especially if you can find a friend to race against.

One of the best racing games ever is Lotus Esprit Turbo Challenge. OK, Lotus has now been superseded by two more Lotus ones, but I still think the original is the best.

The format is simple. Grab a joystick, left to go left and right to go right, Fire to accelerate, and only wimps need to know how to apply the brakes.

Lotus surprisingly does work well in one-player mode, but as the old saying goes, it's much better to do it with a friend. The game really does come alive in two-player mode. The screen halves itself and you grit your teeth and get down to some serious racing.

As far as addiction goes, I think the original Lotus beats every other racer on the market. You always get that feeling of needing just one more go, and you could end up playing it all around the clock.

There are altogether 32 tracks for you Alain Prost wannabes to race around. And believe you me some of the computer-controlled opponents are the most despicable and downright dirty racers I have ever seen in my life. They make Ayrton Senna look like an angel!

If you don't have a race game then where the hell have you been? It doesn't matter because Lotus is now so old that it's out on Gremlin's budget label for less than a tenner. There couldn't be a better time to buy it.

If you've got the original then you'll probably already own both the sequels. I strongly advise you to dig out your old dusty copy of Lotus and enjoy reliving those good ole days.

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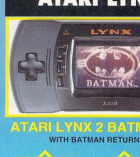

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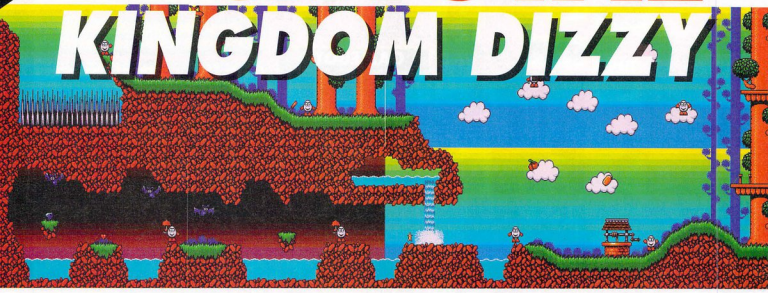
Gamer guide to...

CRYSTAL KINGDOM DIZZY



A shell-shocked Jonathan Maddock guides you through Crystal Kingdom Dizzy. Egg butty anyone?

Part One: The Yolkfolk Village

From your starting position move one screen upwards and get in the lift. Move left until you reach some clouds. Go across the clouds, but be careful – if you stay on one too long you will fall through it, so always remember to keep on the move.

Once across to the other side, keep moving your eggy friend left until you reach your first object. Pick up the screwdriver. Move left once more and pick up the peanut and the star if you want bonus points. Now head back towards the clouds.

Cross the clouds, but fall through the fourth cloud that you step on. Pick up the gold coin and fall through the cloud. Use the gold coin on the wishing well. Head right until you reach your friend CJ the Elephant. Give CJ the peanut. Move two screens left and one up and go to Denzil's hut which is situated in the top left-hand corner of the screen. Go in Denzil's hut and give the shade-wearing dude the screwdriver. Take the spanner and head back towards CJ the Elephant.

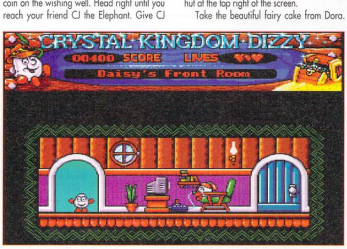
Now move one screen to the right and you will see the broken generator. Use the spanner on the generator. The electricity is now back on in Dizzyland.

Go back to Denzil's, but when you reach the lift go right into the next screen. Go to the hut at the top right of the screen.

Take the beautiful fairy cake from Dora. Go and find CJ once more and give him the coke.

Take his umbrella. Head towards the wishing well. At the well move into the screen to the left. Jump over the pool of water and go underneath the waterfall.

Head left, but mind how you go – the water will kill Dizzy, so take your time and don't forget to watch out for the bats. Pick up the diamond and the extra life if you need it and carefully make your way back to the wishing well.



Dizzy pays a visit to Daisy, but she's more interested in her Megadrive. Spit.

DROP THE UMBRELLA

Use the diamond on the well and the genie will appear, but this time he will help you. You can also drop the umbrella at this point because you will not need it for anything else. Go to the hut that is situated above CJ the Elephant. You can go in the door, but you won't be able to get past Daisy who doesn't want to be disturbed.

Instead of using the door, you have to use the window. Once inside pick up the whip (ooo-er) and the two bonuses. Now go back to Denzil's hut. Take the now fixed spectacles from him. Go right and head upwards until you reach the platform in the screen called A very wide gap.

Use the whip to swing across to the other platform.

Go left until you reach Dylan's hut. Take the newspaper off him. Go down into the village and go into Grand Dizzy's hut which is situated in the bottom left-hand corner of the screen. Give Grand Dizzy the spectacles and the newspaper. Well done – you have just completed part one of your quest.

Part Two: Blackheart's Pirate Ship

Go right and go inside Fat Freddie's Surf Shack. Talk to Fat Freddie and take the can of tuna and exit through the window. Head right and very carefully jump from platform to platform, but be careful because you can't actually see the next one that you are about to land on, so always walk to the very end of the platform that you are about to jump from.

When you reach the last platform, turn around and jump up and to the left – you'll reach another set of platforms. Pick up the super glue and move right to the end of the pier. Use the can of tuna fish and Dizzy will throw it into the water.

Climb onto the back of the Flipper-looka-like dolphin and it will take you all the way to the ship. Watch out for the seagulls and don't forget to collect the stars for bonus points. Once across climb up the anchor and you'll find yourself face to face with Cap'n Beardy.

The best way to do this bit is to climb up all of the masts and pick up all the objects that you find. Remember you can only carry three objects at a time, so drop them off next to Cap'n Beardy. The only object which isn't on one of the masts is the saw and this can be found on the bow of the ship.

You should now have the Sellotape, the super glue, the saw, the Blu-tac and the steering wheel. Pick up the Blu-tac and the steer-

cheat mode

ing wheel and use them on the hole on the steering wheel stand.

Now take the Sellotape and the saw and go inside the ship. Once inside keep an eye out for those meddling rats. Pick up all of the following objects: The plank of wood, the large sheet, the needle and thread and the scissors.

When you find the leak in the ship use the plank of wood, the saw and the Sellotape on the hole. Upon leaving the ship you should be carrying the sheet, the needle and thread and the scissors.

Climb up the centre mast. When you reach the screen called The Main Sail use the scissors on the little knots – this will in turn unravel the main sail.

The only problem now is that it's got a massive hole in it. Climb down one screen until you see the hole and use the sheet and the needle and thread on it to make the required repairs.

Hitch a lift back to the pier using the dolphin. Climb onto the platforms in the trees and go to where the super glue was.

Now jump left and you will reach another set of platforms. Go left until you meet up with Dozy. Use the scissors on the hammock.

HOIST THE FLAG

Now pick up the hammock, which is in fact the flag from Cap'n Beardy's ship. Head back to ship and climb up the main mast once more. This time climb all the way to the crow's nest and fasten the flag to the mast.

Go and talk to Cap'n Beardy and take the Blue Peter badge from him. Now go ashore and this time go back to Fat Freddie's Surf Shack. Give Fat Freddie the Blue Peter Badge and in exchange he'll give you the map and a telescope.

Pick them up and go back to Cap'n Beardy. The greedy pirate will grab the map off you as soon as you try to talk to him.

Now climb up into the crow's nest once more and when you get there use the telescope. You have now completed part two.

Hopefully that should have been of some help to you frustrated Dizzy adventurers. Unfortunately we can't complete the solution this month due to lack of space. But rest assured, we'll be back.

Dizzy meets Denzil, the funkiest and coolest egg on the planet. Groovy!

Stupid and clumsy, but friendly enough...

Back STROKE

Hello, good evening and welcome once again to Backstroke, an item so cheesy that even spoofmeister extraordinaire Jeremy Beadle gives it a wide berth.

This month we thought we'd address the problems of baby buying and drug abuse in southeast Asia, paying particular attention to the problems pertaining to the so-called "Street Urchins", but just at the last minute remembered we were working on a games mag and decided to stick with what we know, which seems to make much more sense. So here we go...

Essex girl's Hijinx

Please help before I go totally mad! I bought Hollywood Hijinx a couple of years ago, and despite finishing Lemmings, Leisure Suit Larry and Lure of the Temptress in the meantime, I still can't get anywhere.

The only clue I have found is the rubber stamp in the maze. I will be eternally grateful if you can help.

Cheers mates,
Tracey White, Clacton-on-Sea

Good heavens above Tracey – we've heard about you Essex girls and your so-called gratitude, and for that reason we daren't give anything away in case you come round and make us do something our mums wouldn't approve of.

If any of our readers fancy risking Tracey's affections, send us some tips on HH, and we'll pass them on. Or else throw them away.

Skweeky clean

Having purchased Loriciel's excellent puzzle game Tiny Skeeks for my daughter, I am completely addicted, but find it impossible to battle my way through to the end.

Normally this wouldn't be a problem and I'd happily admit defeat, but the constant barracking from my two girls is driving me mad and I must finish it at any cost. Can you supply me with the code for the last level so I can fool them into thinking I'm much cleverer than I am?

Much thanks,
Peter T McCrea, Burnley

We can do better than that Peter. Lack of space prevents us from publishing all the codes, but for you and all the others stuck on Tiny Skweeks, here are some:

20	OCTOGLAB
30	COCKSTUM
40	DECLDROL
50	NONHMISC
60	COBEGALE
70	PORTCARO
80	NICKMAST
90	BADIVELL
100	MUAD DIB

You lacky lacky barstools

Remember Paul's Premier Manager challenge a couple of months ago? Well it's silly things like that which get us all in trouble; we had absolutely loads of replies, so we put them all in Biff's crucial rap hat and pulled out a paltry amount of winners, who were:

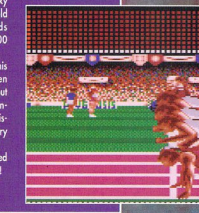
Martin Donald, Lanarkshire
M Greenwood, Preston
R Hewitt, Walsall Wood
Chris Finch, Bristol
Pete Grist, Swindon
D Atkins, Dartford
Andrew Ost, Felixstowe
Bernie Small, Edinburgh
Peter Wilson, Rochdale
Lorraine Guest, Rushalme
Richard Walsh, Havant
D Mason, Stoke
Michael Cheung, Ulverston
James Southall, Willenhall
B Coplin, Dursley
T L Larouche, Douglas IOW

Peasants

Right, well it's straight into another compo then. Just one prize on offer here – the lucky winner will receive all the old games in our cupboards we don't want – about £200 worth.

Simply identify the game this distorted screenshot is taken from, compose a limerick about the main character (those containing the "F"-word will be disqualified), and send your entry to us by no later than May 20.

The winner will be announced in July's Gamer, so get writing!



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technical letters • problems • suggestions

ADVICE service

Darren Evans, Advice Service, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP

Printer problems

I would like to say how much I enjoy your magazine. As a total beginner to computing, it shows the standard you have attained when a total beginner can pick up your magazine and understand and enjoy what they read.

As for value, it seems you charge a small price for a disk full of goodies and throw the magazine in for free. On the strength of this, I have just paid for a year's subscription.

I would also like to ask your advice about a printer I have been given. I have just bought a Atari 1040STE and have a IBM proprinter X24E. I have managed to get it to print with 1ST Word but not with other software like ST Word or Timeworks Publisher 2.

I have no manual for the printer and would like to buy one if possible. Have I a lot more to learn about printers, or will I have to buy a new one like the ones named on the ST Word and Timeworks 2 disk?

E P S Pickin, Durham

Glad to hear you are pleased with ST User Mr Pickin, we try our best to provide value for money as well as informative and entertaining editorial.

Now onto your problem. Printer problems are extremely common among users and it can always be pinned down to the fact that the printer is a obscure model and/or came without a manual.

The main reason a printer will not work with certain software is due to the fact that the programmers have not written a software driver to support it. The reason is that they either do not know about the model or they provide only drivers for the most popular and widely available printer models.

Another reason is that most printers have DIP switches on them for changing the way the printer behaves. For example, some printers can work in either IBM or Epson emulation modes.

If your software is set up for an Epson emulation printer and your printer is set to IBM emulation, it will not print properly, therefore, the manual is essential if you are to know how to set the DIP switches.

You may find that some PD libraries have disks available with a collection of drivers for some of the more obscure printers and these may be worth getting.

Alternatively, maybe one of our readers out there can help with a manual for the IBM X24E, if so, get in touch and I will pass it on to Mr Pickin.

Why disk drive is a flop

I recently upgraded my STFM to 1Mb and when I checked my games software that requires 1Mb to run, the games worked perfectly.

On the same day, I allowed a friend of mine to use my computer for a few hours while I was gone. When I came back hours later, I loaded up the same games software that was working perfectly before but they all wouldn't load.

The game was taking ages on the white screen and then the Desktop appeared when it shouldn't. When I tried opening floppy disk A I got the Drive A: is not responding message.

I only have an internal drive, so I checked whether the disk was firmly inside, which it was. I tried the other disks and the same thing happened.

I asked my friend what he had done and he said he had used it normally and didn't do anything that shouldn't be done. So what has happened? All 15 disks have been affected so it can't be the disks. It has to be the drive or the computer. Please could you help me as I can't afford to spend another £50 for repair.

B Pathak, Plumstead, London

The symptoms you describe have all the earmarks of virus damage. It seems that the boot sector of all your disks have been written to. Maybe your friend, while perusing your software collection, has put a virus infected disk into the drive and then subsequently placed the game disks into the drive without turning of the computer for at least 30 seconds.

Alternatively, it may be that the disks have been subjected to a strong electromagnetic force such as a speaker. You should check if any other disks you have (games or Desktop disks) load correctly.

If you receive the same Drive A: not responding message for every disk you try, it may well be a faulty disk drive.

It may be a good idea to visit any friends who have a ST to check whether your game disks work on their machines or, if you are comfortable about opening your ST, swap drives with your friend. If your friends drive doesn't work in your ST, then you will know that the problem lies with your machine.

Hopefully, it isn't a hardware fault and is due either to unreliable disks or is the result of a virus. You might like to obtain the Ultimate Virus Killer. This excellent utility not only recognises many viruses, it also has a library of boot sectors for various games and other disks. If some of your games are supported in the library, you may well be able to completely recover them.

The Ultimate Virus Killer can be obtained from Douglas Communications, PO Box 119, Stockport SK2 6HW.

Bothered by baud

I am the proud owner of an Atari 1040STE. I have been looking at advertisements for a decent modem but I am insure about baud rates and how much it would cost to run a modem. Could you give me some info?

G T Short, Lincolnshire

Baud rates indicate the speed at which a modem can transmit information. The most common speed is 2,400 baud which means the modem can transmit 240 characters per second. Other slower rates are 300 and 1,200 baud but these are becoming less popular so opt for a modem with at least 2,400 baud.

Also, be sure to go for a model which uses the Hayes standard. Nearly all modern modems are adopting this standard and it will ensure that you will never have any problems with terminal software not supporting your modem.

As for costs, other than the actual electricity which the modem uses, the only costs are normal BT or Mercury rates for the time you are connected. Also, you will probably find yourself downloading software from the many services available. Downloading is where you transfer software from the service you are connected to into your computer.

This takes time depending on the size of the file you are downloading and hence the phone bill increases. Therefore, higher speed modems (such as 9,600 models and faster) can reduce the cost of time spent online because the downloading is faster. So, if you can afford it, get the fastest modem possible.

Some services such as CIX also charge a subscription fee for membership in addition to call charges. Many new users have the impression that they can incur these extra charges simply by connecting to the service. This isn't so, you will probably simply be told that you cannot access the service due to not having a membership.

The majority of services, or bulletin boards (BBSs) as they are known, that are available are mostly run by dedicated enthusiasts who do not charge for their service. The only restriction is that you may not have full access to the service until you become a regular caller and contributor to the board.

Single sided misery

I have an Atari 520STM from 1986 with external disk drive and since this is my first contact with an Atari, I am completely lost. I bought it second-hand, all boxed with some music disks (Sequencer One, TCB Tracker and Henry Cosh Sequencer) but I am unable to load them.

My main use for the Atari was to be for

word processing, keeping records and creating music using my Yamaha keyboard. However, I keep getting a drive A not responding error each time I try to load a disk. I can't even load your own CoverDisk that came with January's issue and I am in two minds whether to send it back for replacement. My main questions are:

1. Is my Atari too outdated to load music disks?
2. What's the difference between single sided and double sided drives?
3. Will I need a new disk drive?
4. Is there software available for my purposes for my early ST?

Gordon Gray, Renfrewshire

All your problems stem from the fact that the SF 354 external drive you have is single sided. I assume the disks you got with the computer are all double sided as is our CoverDisk.

Unfortunately, single sided drives are no longer supported and even many of the commercial software houses who used to supply their software on two single sided disks have recognised that the majority of people have either upgraded their drives or have bought newer Atari's which are fitted with double sided drives as standard.

The drive A not responding message is the result of the ST telling the drive to read the second side of the double sided disk, which obviously it can't because it only has one read/write head. There are many affordable double sided drives available nowadays and I suggest you get one as soon as possible. Check out the various advertisements in* Atari ST User *for a supplier.

Co-processor questions

In the February '93 issue you replied to a query concerning the maths co-processor for the ST, but were unsure about how to communicate with it. Here are a few notes which are relevant to the ST.

The 68000 does indeed support co-processors using the F-Line protocol, but a handler is required because the co-processor must be mapped into the bus like a peripheral such as the floppy disk and DMA chips.

Atari have released a 16MHz 68881 for the Mega ST which plugs into the internal expansion bus. This 68881 co-processor has its registers located at the following addresses:

$fffa40 = response	(r)	(word)
$fffa42 = control	(w)	(word)
$fffa44 = save	(r)	(word)
$fffa46 = restore	(r/w)	(word)
$fffa4a = command	(w)	(word)
$fffa4c = condition	(w)	(word)
$fffa50 = operand	(r/w)	(longword)

There are other control registers but I am not sure if they are used on the ST. In any case, I think DynaCadd and Calamus are the only programs that support the 68881 on the ST.

M J Horwell, Cornwall

Thanks for the information Mr Horwell. I had a sneaky suspicion that a co-processor was accessed using the F-Line commands but wasn't quite sure. It's good to know there are knowledgeable ST users out there who are ready to leap to the aid of a poor, overworked technical editor such as myself.

Drive modifications

Since upgrading my internal disk drive to double sided, I now face the choice of whether or not to upgrade to a 1.44Mb drive. However, I'm unsure as to what is required for the upgrade. Is it simply a matter of replacing my internal drive for a 1.44Mb model or is there more to it?

J A Brown, Salford

Unfortunately, upgrading to 1.44Mb is not simply a matter of replacing the drive with a 1.44Mb model. It requires a hardware "module" to be incorporated into the ST in order to make the WD1772 controller function in 1.44Mb mode.

Therefore, you will need to be pretty handy with a soldering iron and must also take anti-static precautions as the components inside the ST are susceptible to static damage.

However, System Solutions offer a 1.44Mb upgrade kit for £39.95, excluding the drive (or a special offer price of £89.95 with 1.44Mb drive), and also provide a fitting service should you wish to avoid doing it yourself. Contact System Solutions on 0753 832212.

Automated mouse

I have many utilities which offer a macro facility for use within GEM programs that offer the ability to record numerous keypresses and assign them to one particular key. However, I've seen a Apple Mac in operation with similar macro utilities also recording mouse operations as well as simple keypresses.

Is there a similar program available on the ST which will record mouse operations, such as clicking and dragging, which can be loaded as an accessory?

E L Smith, Manchester

The utility you need is Mouse Master and is available from ST Club, 2 Broadway, Nottingham NG1 1PS, Tel: 0602 410241. I t resides in memory as an accessory and allows ten different sequences of commands, each containing up to 100 commands or events such as mouse clicking and double clicking as well as dragging.

Got a problem?

Are you at the point of taking an axe to your ST? Do you want to pulverise your printer? Well just count to ten, take a deep breath, then jot down the problems you are having, along with a detailed description of your setup.

Include information on the type of ST you have, the TOS version (if known), what peripherals are attached and any extra hardware that lurks inside your computer (accelerators, graphics cards etc) and I'll do my very best to come up with a solution.

For those that have had problems and overcome them, chances are that someone somewhere is having the same problems and would benefit from your advice. So, get in print and send any tips or suggestions that other users may find helpful.

Send all tips and cries for help to: Darren Evans, Advice Service, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP.

Zipping along

Being a regular reader of *Atari ST User*, I have noticed that you use the archiving utility ST Zip to compress files for use on the CoverDisk. Where can I get hold of this utility along with the self-extracting utility to make any zip file automatically extract when double clicked on?

I frequently log on to bulletin boards and download files – many of them zip files – and it would be nice to have the latest version of the archiver so that I can zip my own files before uploading them, which of course cuts down on the phone bill.

C Harding, Leicester

You are correct in your observation that we use the ST Zip utility, written by the talented Vincent Pomey, when compiling our CoverDisks. At the moment, I am using v2.2 and I find the GEM interface and general performance extremely good.

So, being a very kind person, I've decided to slap it on the old CoverDisk so turn to the CoverDisk pages and get it extracted.

Falcon support

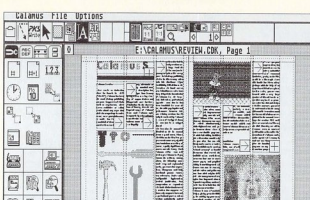
My interests lie in video applications and I was wondering if there are any video products being developed for the Falcon030, which I intend to immediately buy when the re-cased model is available.

A Edwards, Sidcup

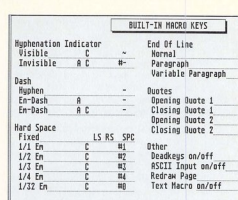
A recent press release from Titan Designs lists three genlock products for imminent release. They are Graffiti and Fresco. Graffiti is a budget priced true colour genlock for the Falcon and, with an adaptor, for the STE. It features a variety of effects such as Melt, Vacuum, Explode and many others.

Fresco is the professional version and includes all the features of Graffiti with the additional ability to manipulate complex 3D text and objects in real time in full 768 x 480 overscan resolution.

The final product is Expose, a professional, high performance true colour digitiser allowing capture of 16-bit true colour images from most video sources. Images can be directly transferred to the Fresco Genlock in real-time when true freeze frame is needed. For up to date information on any Falcon-related issues and products, be sure to keep an eye on our news pages.



In the past, double-page spreads could only be viewed but not edited. S and SL now have a true double-page mode although you have to tell the program that you wish to work with double pages when you define the document format at the beginning. All pages must be defined as either left or right pages – the first one can be either – and great care must be taken when inserting or deleting pages not to mess up the layout, especially when this is of asymmetrical design



DTP for

The large gap in price and features between Calamus 1.09N and Calamus SL has been closed with the release of the intermediate-level Calamus S. Günter Minnerup reports

There can be no doubt that since its launch in 1987, Calamus has been the dominant Atari desktop publishing program.

It has outsold all its rivals and dominated serious Atari DTP with its proprietary alternative to the industry-standard PostScript page description language, unique font format, speedy access to a large variety of output devices and idiosyncratic user interface.

If imitation is the sincerest form of flattery, then the widespread usage of Calamus fonts and Calamus-style icon panels by other software is an effective tribute to the eminent status of the Atari DTP flagship.

CUT-DOWN SL

The latest, all-singing and dancing Calamus SL, however, has proved to be a bit over the top for most small budget users who do not need its professional colour features, and Calamus S is a sort of cut-down SL. But how cut down exactly?

The fact that the manual is identical to the SL manual seems a good omen, but a checklist on the first few pages reveals some very significant omissions.

You will need to get Calamus SL if you cannot do without, among others, the following: automatic crop and registration marks, colour separations, histograms and fully functional gamma curves, text references, leader tabs, configurable hyphenation, vertical justification, font compression or expansion.

That still leaves quite a few significant advances over 1.09N, however.

Calamus S comes on three disks, two of which contain compressed LZH files and the LHARC.TTP program used to decompress them, but without instructions on its use. For novices unfamiliar with the LHARC command switches, getting at the files could be a bit tough.

You are then confronted with a very large number of files all at the same directory level. To get some order into this and design a folder structure, you need to understand what the many different file extenders stand for but not all of them are explained in the manual. Perhaps the Readme file? Well there are several text files on the disk but they are all in German, as are several other items such as the colour lists. As someone well familiar with earlier incarnations of Calamus and a native speaker of German, it took me two hours to complete the installation of the program on my hard disk.

Surely the UK distributors could have made a stronger effort to customise the package for ordinary British users?

There are basically three stages to the process of desktop publishing – page design and layout, editing text and graphics, and printing.

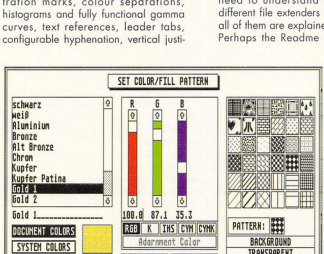
The first stage involves setting up the document parameters and designing a grid for the text and graphics frames. Calamus scores well in this department, permitting almost any conceivable dimensions and offering a large number of design aids which can be "magnetised" for accurate positioning of text and graphics objects.

MAGNETIC FRAMES

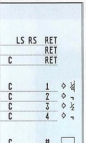
The origin (zero co-ordinates) of grid and rulers can now be user-defined at any position on the page rather than being stuck in the top left corner as with version 1.09N, and a "magnetic frames" option makes it easy to align objects with each other.

A document can contain any number of master pages with standard elements such as headers, footers and folios, which can be saved, loaded and assigned to a range of output pages. The actual document pages can similarly be copied, moved, inserted and otherwise shuffled around at will.

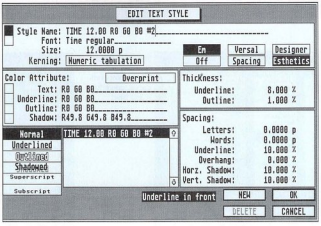
Most people prepare text and illustrations in specialist software so that the DTP system has to be able to import a large variety of file formats. For text, there is always the Ascii route as a fallback, although Calamus has import filters for Word Perfect and First Word Plus if you happen to use these



Calamus S is fully colour-capable and, as far as screen display is concerned, identical in function to Calamus SL. But when it comes to printing the absence of the Colour Separation module restricts you to either dithered mono shades of grey, or the capabilities of whatever colour printer is at hand. In other words, no separations



Previously, "Calamus macros" meant a list of typographical styles saved to disk, and specific to a document and its associated fonts. This concept has been vastly expanded to make almost everything accessible by redefinable macro keys. Even better, a "macro recorder" allows you to "record" repetitive complex operations, which are then assigned to a macro key for later "replay". Yet another effective response to the many critics who thought that the Calamus user interface was too complicated and mouseclick-intensive for productive professional use



The original Calamus could give you sore fingers from clicking through a forest of icons to define and change text styles. This much-criticised aspect of the Calamus user interface has been drastically improved by the next Text Style module which offers complete control over all typographical features from one dialogue box. Once defined, text styles can be entered into a text style list and saved so that global changes are now only a matter of calling up this form, changing whatever values you want to change and clicking on OK

the masses?

programs.

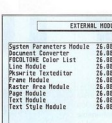
Graphics are a bigger problem, but Calamus S can cope with an impressive number of file types, from plain IMG mono to colour GEM vector drawings and true-colour Targa and TIFF.

Once they are positioned on the page, Calamus offers almost unlimited ways of manipulating your words and pictures – this is undoubtedly one of the program's great strengths.

Whatever the contents of a frame, it can be rotated, copied and colour-adjusted, as well as cut and pasted between pages and documents.

None of Calamus' chief rivals for the Atari DTP crown are quite so powerful in this respect, especially when you consider that extra modules can be purchased to give you vectorisation of bit images and specialised painting and drawing tools.

Calamus is a book producer's dream with its footnote, indexing, chapter numbering, spellchecker and hyphenation dictionaries, although once again the full SL version is required for some of the more sophisticated operations. Fonts, however, are a bit of a problem.



Although similar to the "old" Calamus, S and SL have a radically revamped internal structure. Above all, the program is now of modular design, allowing for the addition of new program features

If you think you can get to work on some ambitious DTP project after acquiring the basic Calamus S package think again, as the bundled fonts are either of inferior quality or incomplete, so some additional investment into a basic set of quality typefaces is unavoidable.

The program comes with a very extensive range of printer drivers and the output quality is as excellent as in previous versions.

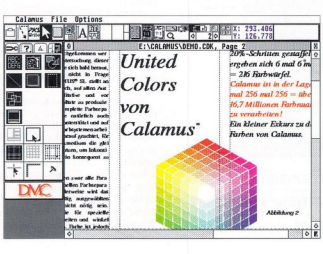
As a self-contained DTP system making the most of the Atari hardware's capabilities, Calamus still reigns supreme for its sheer versatility – nothing else is as good in as many different departments.

But there must be a major question mark over its continued shunning of the PostScript page description language, one of the few true standards in the notoriously fragmented world of computing.

Without PostScript support, Calamus users are cut off from a vast font library, a huge collection of Encapsulated PostScript clip art and illustrations, and the services of all but a very few commercial imagesetting bureaux.

This may be fine for the occasional and hobby user, but for commercial and professional applications you need a lot of confidence in the ability of Atari DTP to defy the rest of the world to place all your chickens into the Calamus basket.

Only time will tell if this bold defiance can be sustained in the long run.



One, three or four sliders – depending on the colour system used – serve to define a spot colour which can then be named and saved to a colour list. Several examples of colour lists are supplied with the package: the one shown is entitled "Metals" and the colour displayed (in TT med-res) is "Gold"

BOTTOM LINE

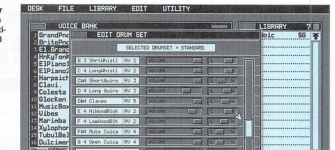
FEATURES
Comprehensive, versatile and expandable through modules
Excellent / Good / Average / Bad / Appalling

EASE OF USE
Much improved over original, but tricky installation
Excellent / Good / Average / Bad / Appalling

VALUE FOR MONEY
Hard-pushed on price by cheaper rivals
Excellent / Good / Average / Bad / Appalling

Product: Calamus S
Supplier: Haico Bunbury Co, Unit 4, Headley Park 9, Woodley, Reading RG5 4SQ
Telephone: 0734 441925
Price: £334.68
Configuration: All ST/STE/TTs with mono or hi-res colour, monitor and at least 1Mb RAM. Large hard disk strongly recommended

The Tony Editor for the Yamaha TG100: sophisticated, powerful – and free!



Tony makes it easy to adjust the drum sets

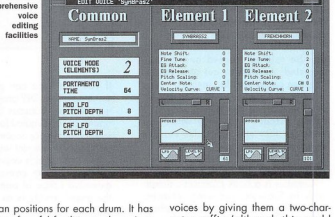
Get inside your TG100

We looked at PD editor/librarians last month and I promised a closer look at Tony in this issue. It's a freebie editor commissioned by Yamaha for the TG100 GM tone module. It was programmed by Y-Not (whose commercial software is distributed in the UK by Newtronic) who offer a printed manual for a small fee.

However, it comes with an extensive read.me file and there is on-line help which tells you what the options do when you point to them with the mouse so I can't imagine they'll get many takers.

For a free piece of software, Tony is comprehensive in the extreme. It uses GEM menus as usual but also has icons which you can click on to activate functions such as disk access, Midi parameters, change banks, copy banks, alphabetise banks and so on.

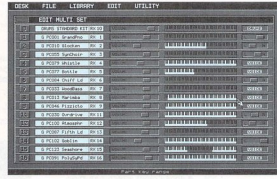
The main screen shows a banks of 64 voices and you can access another three banks from here. You can create a library of sounds by copying voices into the library area on the right.



Tony even includes comprehensive voice editing facilities

EDIT FACILITIES

There are also extensive edit facilities for voices and multis and two randomise voice functions – I love these. You can easily access the drum sets and set volume and pan positions for each drum. It has lots of useful facilities such as Auto Kill to remove duplicate voices; Auto Sort, the ability to categorise voices by giving them a two-character suffix (although this could really be more comprehensive); a Midi monitor and printing facilities. There are also Format Disk and Create New Folder functions.



Multi setups are a doddle with Tony

Although Tony doesn't run in the standard GEM environment, you can access accessories from it. And you can pull down the annoying Minefield game which Windows users on the PC (bless them) seem to enjoy.

It's really good news to see companies supporting their products with free software in this way, especially when it's of such a high quality. If you have a TG100 this is essential.

Tony should be available from all good PD libraries or, while stocks last, direct from: Yamaha, Sherbourne Drive, Tilbrook, Milton Keynes MK7 8BL, tel: 0908 366700.

Cybernoise

Electronic music aficionados eager to dig a bit deeper into their selected area of interest may like to browse through the Cybernoise fanzine.

Issue 2 contains 24 pages of news, views and info on a range of topics including K.M.F.D.M. and Front Line Assembly complete with a discography, and a report on UK Electronica (now a little dated as the event took place last October). There's a four-page directory of clubs, distributors, shops, record labels, artists, fanzines and clubs too.

Cybernoise is produced four times a year and costs £1.50 per issue, although you can get a sample issue for £1. Send your lolly to Graham Needham, 75 Lavernock Road, Penarth, South Glamorgan CF6 2NY.

Ian Waugh's regular ST music roundup starts with a free editor for the Yamaha TG100 synth module

Free accompaniment

If you're one of the many ST users who read this column and keeps meaning to "get into music" but have never got around to it, perhaps put off buy the cost of a sequencer, then now you've no excuse.

Regular readers will know that there are a couple of PD sequencers on the market as well as one or two which have been given away on magazine cover disks.

One of the longest-established and most popular free sequencers is the Cosh Accompanist named after the author, Henry Cosh, following the precedent of the wellington boot, the sandwich and the mackintosh, all of which also which afforded immortality to their inventors.

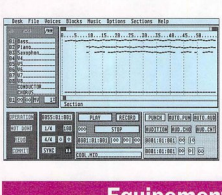
I've just received the latest version, v2.5, which will run on a 520ST in med- or hi-res, and which has lots of enhancements. A full manual and tutorial is available online , although you can omit to load this and get a larger note capacity.

PLAYING ACCURACY

Copy/Move has been improved, there are Block Insert/Delete options, chord playing accuracy has been improved, you can prune pitch bend data, quantise on input, transpose on input and change the time signature of existing music.

The last couple of versions have supported Standard Midi Files which means you have access to the hundreds of PD and commercial Midi files on the market. The program comes with around 400k of files to get you started.

The Accompanist is actually shareware. Although v2.5 works well and has lots of features, the small sum of around £10 (this is a suggested amount only) will get you v8.4 which comes with lots of new music files, a file conversion and juke box utility plus other sundry bits and pieces. It should be with all good PD libraries and bulletin boards now.

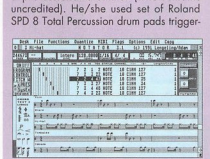


The latest version of the Cosh Accompanist has lots of new enhancements and music files to play

It's really groovy

Regular readers will be aware that there are several companies offering collections of drum patterns.

Realfeel believe they are the first with a collection of patterns actually created by a professional drummer (who remains uncredited). He/she used set of Roland SPD 8 Total Percussion drum pads trigger-



Real-time recording puts the feel into Realfeel drum grooves – today is a Reggae day

ing a Roland D110 – credit the instrument and not the player, glad you've got your priorities right, chaps!

The aim is to capture the nuances and intricacies which a live performance would produce, without all that nasty messing about with drums, cans of lager and air freshener, and which would probably not be present in a pattern created from a keyboard.

The scheme works remarkably well. Many of the patterns do have the "looseness" of a live performance. There are 99 patterns, eight bars long with a fill in the last bar or two. The majority have a rock (in its broadest sense) feel to them and many patterns have added Latin percussion.

Although there are around 30 different styles, they have been grouped into six categories – Intro/Fill, Rock, Soul, Jazz, Reggae and Latin. Some patterns slot into more than one category.

The on-disk doc lists the patterns and the categories they fit into so if you want a Soul rhythm, for example, you look down the Soul column and try some of the patterns there. Each drum is on a different track so you can easily mute different parts.

The drums are mapped to the Roland MT-32 which is pretty close to the GM/GS format except for a few of the drums higher up the keyboard which tend to be Latin instruments.

There must be an awful lot of MT-32 users out there but at this stage in the game I would have thought it better to map to GM/GS. However, there's a drum map so you can adjust to suit whatever equipment you have.

The patterns have been tweaked to subdue some of the bits which were "too live", although I'd rather not see so many hits with a velocity of 127 – let's have some headroom, chaps. And some of the lines have been heavily quantised, particularly the sweeteners.

However, a lot of the live feel comes not so much from the timing as from the velocity of the notes and if your drum sounds respond to velocity you'll get more out of the patterns.

Realfeel is available in Creator/Notator and Midi file format. Volume 1 costs £13.95 from Realfeel Groove Library, Flat 3, 156A Stoke Newington Road, London N16 7XA. Tel: 071-241 0621.

This is one of Realfeel's more ambitious jazz/Latin patterns with lots of ethnic percussion to leave in or take out as the feeling takes you

Equipment control made easy with Midi Mate

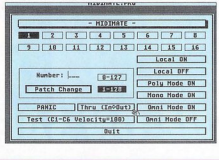
Midi Mate is another one of those useful accessories which help you to control your Midi equipment. It was sent to me by the author, Vegard Hafsoy from Norway who has placed it in the public domain (while still maintaining copyright).

Apart from sounding like some sort of musical condom, Midi Mate has a few functions which are particularly useful when using a master keyboard with a synth module.

As you probably know, the ST has non-standard Midi sockets and the Out does not automatically act as a Midi Thru. Most sequencers have a Midi Thru function which channels incoming messages back through the Out socket but this means you have to run your sequencer each time you want to use the Thru function.

Midi Mate has a Thru option which will do this very thing from the comfort of the Desktop. Neat!

Other functions include Local On and Off control so you don't have to fiddle inside a nest of menus in your master keyboard. You can select Poly, Omni and Mono Modes and send Program change numbers.



There's a test mode to check that your gear is working and hooked up correctly and a Panic button which kills all hanging notes. It sends Note Offs for every note on every channel rather than using the All Notes Off message as not all instruments respond to that.

The program will run as a stand-alone or as a desk accessory. Operation is self-explanatory but there are excellent docs in English in any case. It should be available from you favourite PD library or musical bulletin board by the time you read this.

Midi Mate – a friend indeed. Lots of useful utilities which allow you to play your synth modules from a master keyboard through your ST without booting your sequencer

The most comprehensive guide to the ST GAMING WORLD!

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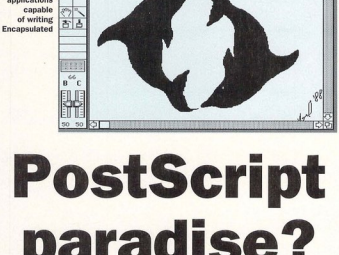

Digital Darkroom is one of many Mac applications capable of writing Encapsulated PostScript files or EPSFs. An EPSF is no different from an ordinary PostScript file, except that it is not meant to be edited further by the receiving application except perhaps to be scaled or cropped.

PostScript paradise?

Emulators may be useful because they enable us to run PC or Mac software on your Atari platform, but presumably if that is all we wanted to do we'd sell our STs and buy genuine Apple machines and IBM clones, especially now that they have come down in price so much.

Most emulator owners still use ST software for most of their work, and therefore are often confronted with the problem of transferring data between the different operating systems.

This applies particularly to desktop publishers, since the Mac is the DTP industry standard. Not only do most imagesetting bureaux use Macs, but a great deal of useful fonts, clip art, logos and other files are available for Mac owners from a variety of sources – PD and shareware libraries, bulletin boards, commercial publishers, friends in the DTP industry and so on.

An emulator will, of course, allow you access to these and you can then edit them using the same software as the real thing, but at some point you are likely to want to incorporate the fruits of your own or someone else's labour into your ST documents.

MAC TO ST

Just consider these not so hypothetical situations: you are the editor of a newsletter produced on your ST using Calamus, PageStream, Didot or Fleet Street Publisher.

You are collaborating with a graphic designer who uses a Mac, as do some of your regular contributors.

Or alternatively, you are involved with a journal which is produced on the Mac and wish to submit illustrations created on your ST. You could, of course, use the TIFF format which is now increasingly supported by ST software, but there are so many varieties of TIFF about that success can by no means be guaranteed.

What do you do? Very often, the best solution will involve the PostScript page description language, one of the few truly hardware-independent standards in the computer industry. If you send your work to an output bureau, you will probably have to write PostScript files anyway. But while most ST owners know about PostScript printing, I am constantly surprised to find how few appreciate the enormous possibilities PostScript offers as a means of file transfer between applications and operating systems. The key to this are the so-called "encapsulated" PostScript files or EPSFs. An EPSF is no different from an ordinary PostScript file, except that it is not meant to be edited further by the receiving application except perhaps to be scaled or cropped.

EPSFs are intended to be incorporated in other PostScript files before printing. The "showpage" output command is therefore often omitted altogether, and the only really crucial bit about encapsulated PostScript is the bounding box co-ordinates information which enables the destination program to position it correctly on the page and, if necessary, enlarge, reduce or crop it.

All DTP-related Mac software I know of is able to write EPSF files. All you have to do is "transvert" these to the ST using the Text File option and import them into your Atari DTP package, provided it offers an EPSF import option as most do.

Most, that is, except Calamus and Didot Professional. It amazes me that these two don't because the program does not actually have to be able to interpret PostScript code to do this – all that is required is the ability to interpret the bounding box co-ordinates for correct placement.

Since Calamus cannot output PostScript printer files there may not be much point in it importing EPSF files, but Didot can. Anyway, don't despair if Calamus or Didot Professional is your preferred Atari DTP program as the excellent CompoScript will read EPSF and convert the file into TIFF or IMG – you can even use the output resolution setting to give you some crude control over the size of the resulting bit image. Much the same route can be taken in the opposite direction if your ST software writes EPSF, as quite a few – PageStream, Retouche Professional, Fleet Street Publisher and others – do.

Calamus output is tricky, unless you own the Dataformer utility which converts Calamus to PostScript, or Didot which imports Calamus vector graphics. I often hear complaints that EPSF files fail to be displayed or printed by CompoScript, but the solution is simple: remember what we said about EPSFs not being intended to be printed by themselves?

In nine out of ten cases, the problem is due to the absence of a "showpage" command at the end of the file, and it is easy to add this with any text editor.

If you are planning to transfer PostScript Type 1 fonts from the Mac environment to the ST you may find that for some obscure reason things don't work as expected. The above-mentioned CompoScript, for example, steadfastly refuses fonts originating from the Mac, insisting that they are in PC format.

The technicalities are too obscure to be explained here, but concern essentially the way the font metrics are represented. PC format fonts consist of two parts, with the extenders .PFB and .PFM.

AFM METRICS

All Mac, some PC, and some ST programs (CompoScript included) want the font metrics in AFM format – if you do not have the AFM file for a genuine Adobe font, you can download it from the Adobe fileserver for free via electronic mail.

But how do you convert the Mac font outline into a PFB file? This is where an invaluable shareware PC utility by the name of Refont, available from most good libraries and bulletin boards, comes in.

Designed to facilitate the use of Mac PostScript fonts under Windows and the Adobe Type Manager, it will generate PFB and PFM files from Mac outlines and AFMs. For use with CompoScript, ignore the PFM and simply install the PFB with the AFM.

With Refont, you will be able to use identical PostScript fonts right across all three platforms. Well worth the $10 – or $20 for the deluxe version – registration fee asked for!

```
PROJECT  Document: Didot.EPS      Size      14 Points          Stk  9 Fgr Menu
Ch 1     Line 1   Col 1   Insert   No markers set                  12:41:42
%!PS-Adobe-2.0 EPSF-2.0
%%Creator: RETOUCHE PROFESSIONAL
%%Title: MONCHLOS
%%CreationDate: 28.2.1993  11:27 Uhr
%%BoundingBox: 0 2 152 97
%%EndComments
save
/picstr 640 string def
/putpic { (currentfile picstr readhexstring pop) image} def
51.2488 45.88 4dup mul exch 4up mul add 1.0 exch sub? setscreen
151.37 96.23 scale
640 408 8 [ 640 0 0 -408 0 408 ] putpic
fffffff
```

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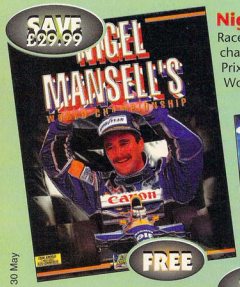

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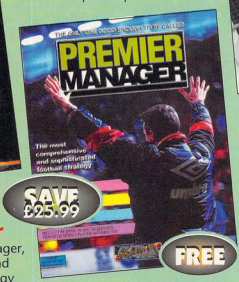

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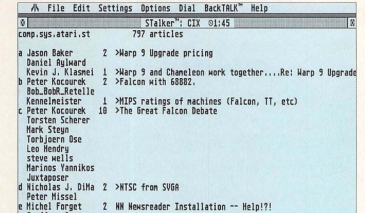
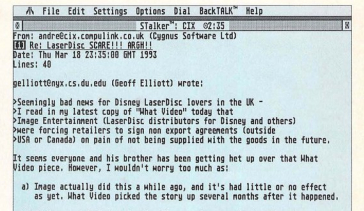


Viewing a list of subjects (or threads) currently active in a Usenet newsgroup.



Reading a Usenet message, in this case in the rec.arts.disney newsgroup

Hard news

André Willey looks at a new CIX-based Usenet interface which is as flexible as it is tricky to use

Over the past few months, the CIX conferencing system – already frequented by many of our staff and readers – has been expanding its horizons considerably.

One recent change was to add support for a wide range of Internet facilities, but the one area which wasn't tackled at that stage was Usenet, the news and conferencing network accessed by hundreds of thousands of sites all around the world.

CIX users (or Cixen as they are known) have for several years had access to Usenet messages, but only via a simple, and now rather antiquated, interface which has long been in need of a serious overhaul. It does not even support replying to messages, for example. All that is set to change as CIX go live with their new Sequent computer. Many new services are to be supported, but one of the most frequently requested must be the introduction of a read/write Usenet gateway.

Based on TRN, or Threaded Read News, the system allows you to read articles much more efficiently and respond either to the whole group or to the original poster of any given message.

THREADING

As the name implies, the reader also supports threading, which allows you to access large numbers of articles by their subject matter, reading all the replies to a given article before going on to a new subject.

The mode is optional, but it's far easier to read Usenet newsgroups with this facility enabled.

You can even set up your own "kill" file, which allows you to screen out any authors or subjects – or even individual words – which you don't like.

For example, the command /Amiga/j would junk any articles which contain the name of that of computer, so you'd never have to waste your precious online time reading them...

On the downside the reader software is a lot more complex than CIX's previous gateway. To start with, the easy-to-remember English commands have gone, replaced with single-key controls.

For example, JOIN news.group.name now becomes g news.group.name, and FILE ALL becomes the highly non-intuitive /*/s. The new system is far more flexible, allowing you to do some highly complex search and file operations, but it does take a bit of getting used to if you're not already a Unix guru.

By the time you read this, the new service should be in operation. To try it out, log on to CIX as usual and type RUN CIXNEWS. You'll get an initial prompt asking you whether you wish to join any newly created newsgroups, to which the best response is to type N to skip that whole process.

You can then go to any specific groups you wish to read by typing g news.group.name.

If you wish to use the threading system, the command t is used. Select a thread by its key letter and you will see each article in turn on your screen. Press the spacebar to show the next screenful, or key N and go on to the next article.

A SENSITIVE CASE

However, beware of the difference between upper and lower case commands – the command n will not mark the current article as having been read, whereas N does mark it, so that you won't see the same message again the next time you log in.

There are two ways to reply to an article – f and r, standing for Follow-up and Reply. The difference is that a follow-up is posted back to the newsgroup for everyone to see, whereas a reply goes privately to the original author of the message.

Again, these commands can also be used in upper case, in which case the contents of the original article will be included within your response, which helps the reader understand the context of your new message.

And don't forget – even if you can't get to grips with the new reader there's still the good old-fashioned one available.

Read the manual

Full documentation for the new reader can be downloaded from the cix/manual topic, and it's available as either plain text or as a neatly laid-out PostScript document.

I'd strongly suggest you read the manual thoroughly before setting forth into the adventure that is Usenet. You don't need to know what every command does (there are far too many for most people to remember, let alone use regularly!) but a working knowledge of the overall structure of the system is essential if you're not going to get bewildered by its initial complexity.

ATARI ST REVIEW

In May, we take a close look at the Falcon's music capabilities, including in-depth reviews of two programs that can record sound direct to your hard disk. Interested in buying a printer? *Into The Jungle* outlines all the pitfalls and gives you enough advice to go out and buy with confidence. Plus a new feature *One Man & His ST* that starts out by interviewing Glen Tilbrook of top band *Squeeze*.

Other features coming in May...

- A great cover disk with a commercial package FREE!
- Upgrade your ST to 12Mb!
- DA Vector – the ultimate graphics package?
- Four exciting new MIDI products
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- In-depths of the latest serious hardware and software
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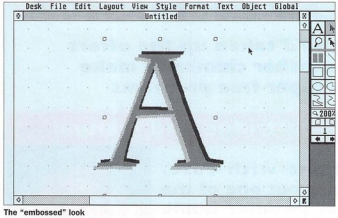


The "embossed" look

Special effects using various tints in text. A simple drop shadow is shown top left

Fiddling with fonts

If you're lucky enough to own one of the DTP packages that support grey or tinted text, and here I mean PageStream 2, Didot or Calamus SL, there are a number of effects you can employ in your documents to attract attention. Most DTP manuals and books cover the topic of drop shadows but very few take the idea any further.

A drop shadow is pretty simple – it consists of one object in front of another with a slight offset and a different tint.

The commonest form of drop shadow with text is black in the foreground and grey behind but if we add yet another layer, much more can be done.

Embossed effects can look very attractive, especially in logos or mastheads. They can be achieved quite simply in PageStream using the following method.

Create a simple text object and duplicate it with a small (1mm or less) offset to the left and down – a negative horizontal offset and a positive vertical one in other words.

Now give the new object a medium grey tint by highlighting it (as if you were changing the text to bold or italic) and then selecting the appropriate fill.

Duplicate this object once with the same offset and give it a light grey tint. Finally, select the middle object – the second one you created – and bring it to the front. To round it off, group all three objects and place them on a box with the same tint as the middle object, the medium grey.

The effect doesn't stand up to close scrutiny – to do the job properly would need a lot more effort but it's certainly good enough for most purposes.

Once you've mastered this technique, try experimenting. An even simpler effect is to duplicate twice in any direction and give the middle object a white tint so that it disappears.

If you don't have PageStream, the same effects can be obtained using a bitmap paint package that will support GDOS fonts, although you'll have to create your object at the size you intend to use it in order to avoid distortion.

You could also use Silhouette or Convector to auto-trace the letters, duplicate them, tint them and save the objects as a single GEM file to import into programs such as Easy Text Pro or Timeworks.

The ultimate publishing system?

CGS, the UK distributors of some of the ST's most desirable DTP and graphics products, have just announced a massive price drop which will bring some pretty sophisticated software well within reach of the average user.

For £299 you can get the mono-only versions of Didot Professional, the DTP package, and Retouche Professional, the top of the range image handling system.

If you want the colour versions, you'll have to fork out £499 but the mono version should be quite enough for 99 per cent of ST users.

Didot Professional alone originally cost more than that – and Retouche Professional twice as much again – so it's certainly a bargain.

The package also includes the latest version of Didot with several bug fixes and enhancements, including, for the first time on the ST, support for hinted PostScript fonts.

Bargain font editor

The ST Club have launched Fonty, a bargain basement font editor and converter for Calamus users that will come in very handy for Fontkit Plus and That's Write/CFont users too. And with a price tag of just £11.95, it seems hard to believe, especially as ST font editors aren't well known for being cheap.

I think I'd have invented a more professional sounding name for it, but there's no doubt that Fonty offers plenty of features and does the job well.

It runs in med or hi-res on any ST though I'd recommend you use hi-res for close up work. Fonts can be created from scratch or simply edited and altered using the global commands.

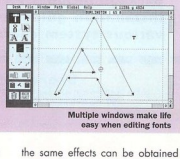
In other words you can use it to create your own unique fonts, perhaps based on scanned images as it will load Degas picture in the background and let you trace it, or do all sorts to existing ones.

Fonts can be enlarged or reduced on either major axis, rotated and skewed in small increments and mirrored or shifted, either a character or a whole font at a time.

Up to seven fonts can be kept in memory at one time in separate windows and there is an on-screen toolbox for drawing and editing or drop down menus if you prefer.

There are some other utilities supplied, including a PostScript to Calamus converter which will convert PFB files into CFN format, without the AFM file, if necessary.

You will then have to use Fonty to set the correct kerning – it can do it automatically – but this is a remarkably cheap way of using all those PD PostScript fonts. With CFont or Fontkit Plus, you could even convert them into That's Write or GDOS format.



Multiple windows make life easy when editing fonts

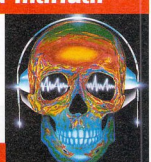
Two bargain bundles come under the spotlight – and Andrew Wright has some useful hints on tints

ENJOYING USING LAST MONTH'S COVERDISK?

If you are, and now wish you'd taken up the offers that went with it, here's another chance to make the most out of those super free programs

Stereo Master sound sampler cartridge and manual

The Stereo Master cartridge and accompanying manual will enable you to capture real life sounds from record, tape, CD or a microphone with ease. You can try out one of the ST's most popular home uses for a bargain price and save £25.



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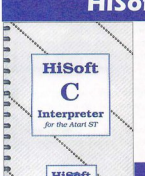

This includes a superbly written, ring bound, 350-page manual covering all features of the C Interpreter Editor, as well as tutorial sections and full reference pages for all functions. The purchase of this package also entitles you to free technical support from HiSoft.

Only £21.95

– Upgrade to Lattice C v5.52

This extremely versatile and powerful development system for C can be used easily by both experts and novices. The Lattice C package includes an excellent manual, an installation guide for easy setting up on various system configurations and seven double-sided disks in a quality disk wallet. It is excellent value at only £99 instead of its normal retail price of £149.

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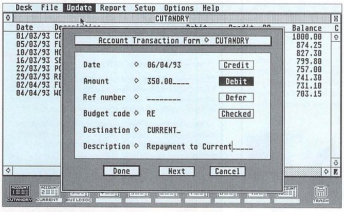
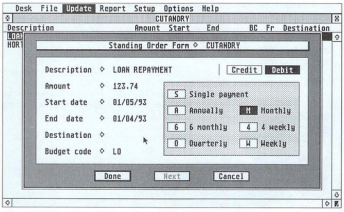


The Cut and Dry dried flower company repays its owner's Current account using PFM Plus's "posting" facility



Fill out PFM Plus's standing order form and every payment will automatically be accounted for as the due dates arrive

Keeping it simple

Provided the turnover of your business does not exceed £36,600 – the point at which you must become VAT registered – and you have no real need for a computerised invoicing and receipting system, your financial software need not be enormously complex and expensive.

The letters I receive from readers of this page indicate that most of you have small operations which would not warrant an all-singing, all-dancing system.

If you fall into this category, why not take a look at Microdeal's excellent, and very easy to use, Personal Finance Manager Plus?

PFM Plus, which runs in hi or med-res, can hold up to ten accounts in one file and has "posting" capability – that is, a debit in one account can become a credit in another.

This is very handy if, like me, you occasionally pay for business items with cash, a cheque or plastic card drawn on a non-business account, and later have to pay the money back out of the business account.

For a small or part-time business, there's no reason at all why you shouldn't keep business and personal accounts in a single file in PFM Plus (but always back it up, of course!), so that you can look at your overall financial situation quickly and conveniently at single sitting.

You can still view a particular account in isolation to the rest. Each account appears on PFM Plus's own desktop as an icon – along with the useful calculator and clock – and you simply double-click whichever account you want to view. PFM Plus is not capable of working out VAT returns for a larger company – but one considerable bonus I found was that a little "creative use" enables you to do very fast financial projections as well as keeping an historical record of all your finances.

One of its useful features is a standing order facility. Once you've entered one of these, as either a debit or a credit, PFM Plus automatically accounts for each payment by reference to the ST's system clock.

By entering various credit and debit estimates for, say, the next year as standing orders, then resetting the system clock for a year hence or whenever, you can see the effects of projected income and costs on your overall financial situation.

PFM Plus also allows you to create up to 28 budget categories. You can then place an annual, quarterly, monthly, four-weekly or weekly estimate against each.

So long as you then type the two-letter budget codes against each appropriate transaction, you can later view actuals against budgets, in graph form if you wish.

The only slight problem here is that you can use only six budget codes at a time for actual/budget comparison, but you could, if you wished, keep changing the nominated ones until you've seen the lot. Other pluses of PFM Plus include automatic reconciliation – the matching of your account records in PFM Plus to formal bank statements by deferring, or hiding, transactions not listed on the formal statements; balance plots which show graphically the fluctuating balance of accounts between user defined dates; and trend plots showing spending on up to six budget categories, again between user defined dates.

Statements listing account transactions and/or standing orders, account summaries, budget tables and graphs can be printed out so that you can keep a record of your affairs on paper as well.

Apart from wishing I could have chosen more than six budget categories at a time for use in budget comparison charts, I've found PFM Plus a most worthwhile addition to my collection of ST business software.

I can honestly say that I now know my true financial situation – both business and personal – and have a very good idea of where things are heading over the next couple of years assuming there's no huge change in interest rates and taxation.

And even if big changes happen, it's a simple matter to make changes in and stay ahead of the game.

PFM Plus is ideal for the small business person who is not VAT registered.

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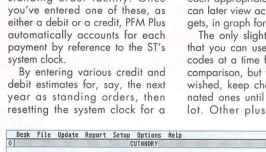

You can call a bar chart like this to view actual spending against budgets for up to six budget categories. A budget pie chart can be called too, but because of its nature it can only show actual expenditure, with no budgeted amounts for comparison

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At last, a low cost 16 bit sampling system for the Atari ST, featuring full 16 bit input and output in the same unit. The system comes complete with a sophisticated sample making/editing program, superb digital Drum machine program, and a powerful MIDI keyboard emulation program which gives the user the ultimate in MIDI sample control.

HARDWARE – The 16 bit sampling unit plugs into the cartridge port of the ST. Audio connections to and from the sampler are provided via standard Phono connectors. An input volume control is also provided.

SOFTWARE – EDITOR – The sample editor is a highly flexible 'WIMP' style program which allows conversion or editing between any AVR format 8/12/16 bit, Mono or Stereo samples. Sampling rates of up to 48Khz can be used, but the program can re-synthesise samples to practically any other speed.

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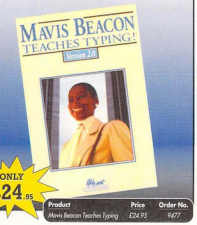

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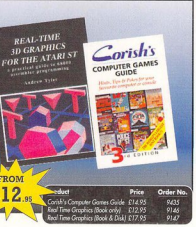

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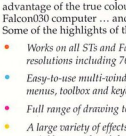

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TruePaint was launched at the 7th International Computer Show and has already gained wide acclaim from its users. For more information, please call us and ask for a brochure.

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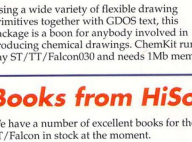
XBOOT is an efficient, easy-to-use program and comes with a well-written and useful manual. Please enquire about upgrades (from £12.95) if you have an earlier version of XBOOT.

ChemKit £39.95



A new package that many chemists and students of chemistry have been waiting for; ChemKit allows the easy creation, amendment and printing of any chemical structure.

Using a wide variety of flexible drawing primitives together with GDOS text, this package is a boon for anybody involved in producing chemical drawings. ChemKit runs on any ST/TT/Falcon030 and needs 1Mb memory.

Superbase Professional £99.95

Following the sale of the ST and Amiga versions of Superbase to Oxxi Inc with whom we are working closely on a project for the Falcon030, we are pleased to be able to offer the superlative Superbase Professional (Version 3.02) at a substantial saving over its previous recommended price.

All HiSoft's products should be available through your local computer dealer. If you have difficulty in obtaining a title you can order directly from HiSoft using your credit or debit card - just call Julia, Sallie or Marlynne on 0525 718181.

Books from HiSoft

We have a number of excellent books for the ST/Falcon in stock at the moment.

These include C-manship by Clayton Walnum, ideal for the C enthusiast or the beginner; Program Design Techniques by Paul Overaa, an informative book on how to write well-structured programs in most languages; Real-Time 3D Graphics by Andrew Tyler, shows you how to create vivid solid 3D colour graphics while the Motorola 680x0 Programmer's Reference and the Motorola DSP 56000 Reference are the bibles for 680x0 assembler and DSP programmers. Please call us or write to us for pricing details on these titles.

HiSoft BASIC 2, Harlekin 2, Lattice C 5.5, HiSoft C, HighSpeed Pascal, FTL Modula-2, KnifeST, WERCS, XBoot 3, HiSoft Devpac, HiSoft BASIC 2, TruePaint, WordFlair, Diamond Back, Superbase, Diamond Edge, K-Spreed, K-Data, FirST BASIC, HiSoft FORTH, ProFlight, ChemKit, Tempus 2 ...

All prices include UK VAT and P&P within the UK. Please call for export prices, educational discounts etc. E&OE. Specifications and prices may change.

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