

ATARI

ST USER

September 1993

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Vol. 15.39

ENTERPRISE

Britain's best for ST

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Quality Data Storage

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Data Pulse Plus



Data Pulse Plus is a range of High Quality, High Density, Data Storage Devices, developed exclusively by Ladbroke Computing International.

The Data Pulse Plus range consists of various high density, high speed SCSI storage mechanisms based on the Data Pulse Plus Sub-System. This Sub System has been extensively developed to reduce noise and maximise ease of use and reliability.

"Well constructed and designed for ease of use utilising highest quality mechanisms"

Darren Evans, ST User

The Data Pulse Plus Sub System features a custom designed case of dimensions: 300mm x 295mm x 51mm (wdh). The power supply unit is housed internally providing a reliable power source for drive mechanism, host adaptor and Fan (Floptical & Floptical combinations only) without placing extra strain on the ST's PSU. The full metal case fully shields the internals from interference and surrounding equipment from radiation. It is also ideal for use as a monitor stand.

The ON/OFF switch is mounted on the front of the case along with the SCSI device number selector and a bi-colour LED which displays power on and Drive Busy status.

All Data Pulse Plus ST Drives include the acclaimed ICD SCSI host adaptors. Full manuals are also included detailing hardware specification, setup and trouble shooting.

To ensure the highest possible reliability, the drives are tested at every stage of assembly by skilled technicians. We also format, partition and install a bootable drive as part of the test procedure to ensure that the drive is ready to "Plug in and Go" when you receive it. When you first boot up your hard drive you will find a wealth of Public Domain Utilities which have been selected by our support staff as particularly useful.

All Data Pulse Plus drives include 12 months warranty and free phone

advice and support by genuine Data Pulse Plus users.

The entire range of Data Pulse Plus Hard Drives are based on the highest quality mechanisms available. Quantum, Maxtor, Fujitsu, Insite mechanisms are used, each of which feature a MTBF (Mean time between failures, measured in Power On Hours) in excess of 30,000 hours. All SCSI mechanisms used are 3.5" wide and just 1" high and are chosen for their performance and low power consumption.

The Low power consumption of these mechanisms means that they can operate well within their safe operational temperature ranges without the need for Fan cooling. This coupled with the design of the case results in probably the quietest Hard Drive range available for the ST.

All Hard drives are Autoparking, reducing the risk of head crash or damage during transit. All drives also come configured to be Autoboosting.

All Data Pulse Plus drives for the ST now include the ICD LINK host adaptor. This external adaptor plugs into the SCSI port at the back of the drive. This configuration allows the drive to be used with any computer

you may upgrade to in the future such as the Falcon 030.

Floptical Drives are capable of storing over 20Mb of un-compressed data on a single 3.5" Floptical disk. The Floptical disks store data magnetically just like a normal floppy disk but the positioning of the read/write heads is far more accurate due to an Optical positioning system. The Floptical Drive positions its heads using ultra fine guide tracks embedded in the Floptical disk surface. Using this positioning system, the Floptical Drive is able to store data on up to 1240 tracks per inch, compared to the 135 tracks per inch of a normal 3.5" floppy disk.

The Floptical Disk Drive combined

Hard
Drives



"Data Pulse is astonishingly fast"
Andrew Wright, ST User

with specially Up-dated ICD software can access the 21Mb on a Floptical disk and also Read and Write 720K and 144Mb 3.5" Floppy disks.

The Drive has an average access time of 65ms and a data transfer rate of 200K per second (6 times faster than Floppy disk).

The Floptical Drive is available as a stand alone unit, an upgrade for existing Data Pulse and Data Pulse Plus owners or as a combination unit coupled with any capacity of Data Pulse Plus Hard Drive.

Each Floptical drive includes one 21Mb Floptical disk. As

many extra Floptical Disks as you require are available at a very low £ per Mb rate.

The Floptical drive is an ideal backup device for large hard drives. Coupled with a backup utility such as Diamond Back II which features compression you can back up more than 30Mb of data per Floptical Disk.

The Datapulse Plus Re-Writable 128Mb Optical drive is a new addition to the Data Pulse Plus range. This drive features 30ms access time, 600K per second data transfer rate and 128Mb of data stored on one 3.5" Optical disk.

The disk rotates at 3600RPM giving hard drive performance with replaceable media flexibility. As with all Data Pulse Plus drives the mechanism is low power and does not require a fan. Data Pulse Plus Optical is fully compatible with the LINK and the FALCON 030 using ICD PRO utilities (ideal for direct to disk recording). Each Optical disk gives very high £ per Mb value.

All Data Pulse Plus Falcon drives come complete with SCSI 2 cable and cost £50 LESS than the prices quoted below. All Data Pulse Plus hard drive/floptical combinations for the Falcon come complete with SCSI 2 cable and the ICD PRO Utilities and cost £10 LESS than the prices quoted below (Phone for latest prices).



| | | | |
|---------------------|----------|----------------------|---------|
| Data Pulse +85Mb | £349.99 | 85Mb with Floptical | £629.99 |
| Data Pulse +127Mb | £389.99 | 127Mb with Floptical | £699.99 |
| Data Pulse +170Mb | £429.99 | 170Mb with Floptical | £769.99 |
| Data Pulse +240Mb | £499.99 | 240Mb with Floptical | £839.99 |
| Data Pulse +345Mb | £649.99 | 345Mb with Floptical | £999.99 |
| Data Pulse +1Gb | £1099.99 | ICD PRO Utilities | £39.99 |
| D/P +21Mb Floptical | £399.99 | Falcon SCSI II Cable | £39.99 |
| D/P +128Mb Optical | £989.99 | ICD LINK | £89.99 |
| 128Mb Optical Disk | £35.00 | 21Mb Floptical Disk | £22.00 |

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
- FALCON 4Mb 65Mb HD £959.00
FALCON 4Mb No HD £779.00
FALCON 4Mb 120Mb HD £999.00

STE Packs

- 520 STE £219.00
1Mb STE £219.00
2Mb STE £265.00
4Mb STE £319.00
520 ST/FM Discovery Pack £149.00

Software

- Scanlite Accessory £20.00
Image CAT £24.99
1st WordPlus £39.99
- ST GAMES SOFTWARE IN STOCK - PHONE FOR DETAILS

Midistudio Master

240 PPO Midi Standard file format compatible. 100 tracks. Phrase arrangement. Very easy to use.

£19.99

Marpet Upgrades

Marpet upgrades for the ST are "plug in" and require no soldering. They are compatible with most motherboard layouts and come with full fitting instructions. These boards accept SIMM boards and are upgradeable at a later date.

- ½Mb STFM £34.99
2Mb STFM £74.99
4Mb STFM £119.99

Please phone for further details

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 from the base 512k to 2Mb then 4Mb
- Solder in design for greater reliability (requires some technical knowledge)
- Fully tested prior to despatch
- All Aries RAM upgrade boards come packaged in a 10 capacity disk case box, complete with full fitting instructions/test disk.

- 512k Board £39.99
2Mb Board £79.99
4Mb Board £129.99
512k SIMM's STE £6.99
2Mb SIMM's STE £49.99
4Mb SIMM's £94.99
2 x SIPP to SIMM adaptors £3.00

Monitors



Dataview Mono Monitor £139.99
Dataview 14" SVGA Monitor with ST adaptor (includes sound). Fully compatible with all ST Hi-Res Programmes.

- Philips 8833 MkII £199.99
Includes 12 Months on-site warranty (Mainland UK) and free Lotus Turbo Challenge II game.

Atari SC1435 Col Mon £179.99
Includes tilt/swivel stand and cable for STFM/STE

Dataview SVGA Col Mon £239.99
High quality Colour SVGA Monitor .28 dot pitch. Includes Falcon adaptor.

- Falcon VGA Adaptor £9.99
Falcon ST Monitor Adaptor £9.99
Philips SCART to ST/STE £9.99
8833 MkII to ST/STE £9.99

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 its 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 £34.99
1Mb internal drive £39.99
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

Hand Scanner

- 100,200,300,400 Dpi Resolution
- 1 letter mode, 3 photo modes
- 105mm scanning head
- Includes Cartridge through port with switch box
- Compatible with Touch Up 18
- Supplied with Scanlite Accessory. Compatible with any graphics package which supports accessories. Allows scanning directly into compatible packages, such as Silhouette and Megapaint II
- Supplied with Silhouette V14. Autotracing vector package (mono monitor only). Scan directly into Silhouette via Scanlite or Import IMG, DEGAS, TINY, MacPaint, GEM and SGF bit image files. Exports IMG, GEM (13), SGF, DXF, EPS (Postscript) vector files.

Hand Scanner + Scanlite/Silhouette
£119.99

DataNet Network



Datanet Network Hardware

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

PowerNet Network Software

LanTasking 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 MidNet devices
- Full Falcon compatibility using LanNet device

DataNet with PowerNet £69.99
LanNet with PowerNet £59.99
MidNet with PowerNet £49.99

Prices quoted are for 1 Node. Each computer attached to a Network requires 1 Node.

PC Emulators



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

- PC Speed STFM or STE (XT) £55.00
AT Speed STFM (8MHz) £139.00
AT Speed C16 STFM £199.00

Printers



- Star
Star LC100 Colour £165.00
Star LC20 £124.00
Star LC24/100 Mono £179.00
Starjet SJ48 Bubblejet £210.00
SJ48 Ink Feeder £55.00
SJ48 Sheet Cartridge £19.00

Citizen
Citizen Swift 240 Colour £270.00
Citizen Swift 90 Colour £175.00

Hewlett Packard
HP Deskjet 510 £329.00
HP Deskjet 550 Colour £669.00

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
Seikosha Toner (2 units) £19.00
Seikosha Drum Unit £79.00
Ricoh LP1200 £759.00

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

Ladbroke Computing

33 Ormskirk Rd,
Preston, Lancs,
PR1 2QP

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.

All prices are correct at copy date 15/7/93 (while stocks last), and are subject to change without prior notice. All prices include VAT but exclude delivery.

How to Pay
You can order by mail Cheques/Postal Orders made payable to Ladbroke Computing. Or give your credit card details over the phone.

Delivery
Postal delivery is available on small items under £40 (Normally £3, phone for details). Add £7 for courier delivery. Next working day delivery on mainland UK subject to stock (£11 for Saturday delivery).

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Design your own games using STOS and then make them much faster with STOS Compiler – two complete programs given away free on this month's CoverDisk PLUS:

● Increase your chances of a pools win with the latest version of Bay Computer's Pools Predictor and a complete list of this season's football fixtures from Dr Fox



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EXPRESS
ENTERTAINMENT

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GASTEINER

Tel: 081 365 1151
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SUMMER SALE...
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WE WILL TRY AND MATCH OR
BEAT ANY ADVERTISED PRICE
IN THIS MAGAZINE

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| 520 STE 1Mb | £219.00 |
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| 520 STE 4Mb | £320.00 |
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| 1040 STE Family Curriculum | £299.95 |
| ST BOOK 1Mb 40Mb H/D | £275.00 |

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| Falcon 4Mb | £750.00 |
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| Falcon 4Mb 65Mb HD | £949.00 |
| Falcon 4Mb 120Mb HD | £1099.00 |
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HARD DRIVE

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| Atari Internal Drive | £45.00 |
| Keyboard STFm and STE | £59.00 |
| STE Mother Board No RAM | £149.00 |
| DMA Chip | POA |
| TOS 2.06 STE/STFm | £59.00 |
| 1Mb STFm Mother Board | £149.00 |
| Outer Casing STE | £39.00 |
| Atari Original House | £8.00 |

MONITORS

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| SVGA Monitor for Falcon | £239.00 |
| Atari SCi435 | £199.00 |
| Multisync Monitor | £399.00 |
| Gasteiner Mono High Res with Sound | £129.00 |
| Gasteiner Mono High Res with Audio Out | £99.00 |

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| Citizen Swift 9 Colour | £179.00 |
| Citizen Swift 240 Colour | £279.00 |
| Citizen Swift 200 Colour | £219.00 |
| HP 500 | £309.00 |
| HP 500 Colour (incl. cable) | £620.00 |
| HP 550 Colour (incl. cable) | £655.00 |

RAM

| | |
|--|---------|
| 8Mb RAM for STE, Mega ST/STE (C0H10H S00N) | POA |
| Market RAM Deluxe Simms Upgrade for ST, STF, STFm and Mega ST | |
| 0Mb | £27.00 |
| 1Mb | £35.00 |
| 2Mb | £80.00 |
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| | |
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| 42Mb (24Ms) Quantum | £289.00 |
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| 85Mb (14Ms) Quantum | £349.00 |
| 120Mb (14Ms) Conner | £429.00 |
| 170Mb (14Ms) Quantum | £469.00 |
| 240Mb (14Ms) Conner | £569.00 |
| 330Mb - 1.2 Giga byte | POA |
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| Floptical 20Mb Disks | £24.00 |
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| Diamond Back Software | £39.95 |

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| • ICD Host Adaptor (with clock) | £110.00 |
| • Host Adaptor | £59.00 |
| • DMA Cable | £6.00 |
| • The Link | £79.00 |
| • ICD Host Adaptor | £100.00 |
| • CleanUp ST | £29.00 |
| • SCSI to Centronics Cable (for the link) | £18.00 |

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| 85Mb Quantum | £249.00 |
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| 170Mb Conner | £329.00 |
| 170Mb Quantum | £349.00 |
| 240Mb Quantum | £479.00 |
| 105Mb LPS Quantum | £299.00 |
| 85Mb Conner | £229.00 |
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With Official Atari MEGA STE KIT
Atari Host Adaptor and Formatting
Software

| | |
|------------------------|---------|
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| Kit + 210Mb Hard Drive | £499.00 |

ACCESSORIES

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| Multisync Switch Box | £29.95 |
| Printer Cable | £6.00 |
| Modem Cable | £6.00 |
| Nul Cable | £6.00 |
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| Philips/Atari Cable | £10.00 |
| Scart Cable | £10.00 |
| Box of 10 Disks (Branded) | £6.00 |
| 5.25" External Drive | £89.00 |
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| | |
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| New Golden Image | |
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| Wordwriter | £50.00 |
| 1st Word + | £55.00 |
| Calligrapher Pro | £79.00 |
| Calligrapher Gold | £109.00 |
| That's Write V1.4 | £19.00 |

DTP Software

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| Timeworks Publishing 2 | £80.00 |
| Calamus V1.9 | £129.00 |
| Calamus SL | £339.00 |
| OCR Software | £165.00 |
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| Cyber Studio | £25.00 |
| Cyber Control | £25.00 |
| Cyber Paint | £25.00 |
| True Point (for Falcon) | £39.95 |
| Human Design Disk | £10.00 |
| Future Design Disk | £10.00 |
| 3D Font 1 | £10.00 |
| CAD 3D | £10.00 |
| CAD 3D Developers Disk | £10.00 |
| Neo Desk 3 | £28.00 |
| That's Fun Face | £18.00 |
| Signs + Banners | £15.00 |
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| Greeting Cards | £15.00 |

Music Software

| | |
|-------------------------------------|---------|
| C-Lab Notator SL | £279.00 |
| C-Lab Notator Logic (for Falcon) | £450.00 |
| C-Lab Creator | £179.00 |
| Musicon (for Falcon) | £39.95 |
| Cubeat | £150.00 |
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REPAIR SERVICE

New service centre/repair for
most Atari computers. We offer a
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All Trademarks acknowledged.

Atari fight for lost ground

by John Butters

ATARI have set out to regain their position as one of the electronic entertainment industry's big boys announcing a major link with the world's largest media and entertainment company.

The firm have been given first refusal on electronic entertainment tie-ins with all Time Warner productions and video clips owned or licensed by the company.

The full motion clips are being made available to firms developing games for the Jaguar, and Atari say they will add reality to titles and allow for new heights in software experiences.

And a \$500 million deal has been struck between Atari and IBM, under which IBM will make Jaguars at their massive plant in the US state of North Carolina.

Responsibility has also been handed over to the computer giant for sourcing parts, quality control, packaging and distribution.

"The [Jaguar] system is clearly the wave of the future," enthused Atari president Sam Tramiel.

"We wanted to work with a premier company that we are confident can manufacture the quality product we have developed."

The news was well received by Wall Street, with Atari stock soaring to \$5 per share at one point – a jump of 500 per cent since the Jaguar was confirmed in June.



Video: Atari take first refusal on Time Warner tie-ins

Top firms plan August show

A GROUP of firms will be showing the latest professional products for the ST and Falcon at a mini Atari show to be held in London during August.

The event was organised just days before this issue of *Atari ST User* went to print, but several companies had already pledged their support.

Those attending include the four organisers CGS ComputerBild, Compo Software, Titan Designs and public domain library 16/32 PDL. Others have been invited.

All plan to show software and hardware not yet seen in Britain, including the first PC emulator for Falcon, rendering software and ST locking equipment.

A repair and upgrade service will be available for ST and Falcon owners and Midi/Club Cubase will be on hand to give advice to musicians.

Said CGS ComputerBild's Ray Cross: "Atari users have been crying out for a show of their own."

"This event will prove that there are people and companies dedicated to the professional aspect of Atari computers, and visitors will see some remarkable developments in the market."

He said it would be different from other shows because mail order firms and games software houses have not been invited, although all exhibitors will be selling their own products.

It takes place between 10am and 6pm on Saturday, August 14, at the Novotel Hotel, Hammersmith, London. For more information telephone CGS ComputerBild on 081-686 8121.

Accessory kills virus threat

ULTIMATE Virus Killer and text editor EdHak have just been given a range of improvements, their British distributor Douglas Communications have announced.

Version 5.9 of UVK can be used as a desk accessory as well as a stand-alone program, killing all known ST viruses and fixing many affected games.

The utility continues to be updated four times a year, with existing owners being offered a full year's updates for £4.99. It costs newcomers £9.99.

EdHak, meanwhile, has been made compatible with Falcon and MultiTOS and sees other all-round improvements.

They include changes to the horizontal scroll bar, expanded block handling functions and the ability to use any of the three system font sizes in most resolutions.

There is better scrolling to information outside the edit buffer and improvements to the text macro function. EdHak 3 comes with a new version of computer-based note taker Diary.

Until the middle of October, the £14.95 program will be sold for an introductory price of £9.99 by Douglas Communications, PO Box 199, Stockport, Cheshire. Telephone: 061-456 9587.

Features boost for multitasking

GENEVA is an alternative to Atari's multitasking system, MultiTOS, that will enable an unlimited number of GEM programs and accessories to be loaded into STs, TIs and Falcons.

It is under development by US-based Gribnif Software and is expected to be sold in Britain towards this year end by Compo Software (0480 891819).

Under Geneva, programs can be put to "sleep" – speeding up other applications – by temporary closing their windows.

MultiTOS software can be used with the system and it gives the machine a new look and feel, including 3D buttons and the ability to drag any drop-down menu into its own window.

Its makers claim that Geneva offers several advantages over Atari's system. They include higher speed, less memory needed, and better compatibility with old software.

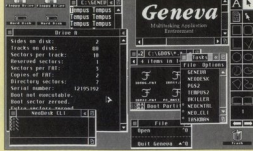
Although it is not compatible with the computer's built-in desktop, programs can be launched directly from the system's Task Manager.

But for convenience the firm recommend a replacement desktop, and Compo Software are expected to sell Geneva alongside a new version of Gribnif's NeoDesk.

They refused to give many details on NeoDesk 4, except to say that it will include new multitasking-oriented features, window menus and true colour support.

British prices remain to be fixed but in the United States Geneva will cost \$69.95 and a pack also containing NeoDesk 4 has been given a \$99.95 price tag.

Geneva:
Multitasking
for most Atari
computers



News briefs

Bigger Falcon storage

PRESTON-based Ladbrooke Computing (0772 203166) are now selling Falcons fitted with 120Mb hard drives for £999, the price recommended by Atari for 65Mb or 80Mb capacity models.

★ ★ ★

Calligrapher moves

WORKING Title, the UK distributor of document processors Calligrapher and Calligrapher Gold have just moved office. They can be telephoned on 0865 370175.

★ ★ ★

Support stays

THE British distributor of publishing programs from failed 3K ComputBild (see Euro News on page 10) have promised complete support for UK owners of their software.

But CGS ComputerBild say that under new ownership in Germany, Didot Professional and Retouche Professional have been renamed DA Layout and DA Repro.

★ ★ ★

More pixel pictures

SCREEN Blaster is a new device from Compo Software (0480 891819) that is claimed to increase the Falcon's resolution by up to 300 per cent.

The level of improvement depends on the type of monitor used with the computer and its makers say the device is compatible with all screens and software.

It plugs in to the Falcon's monitor port, and the screen adaptor required by the computer fits into the back of the Screen Blaster. Price: £79.

★ ★ ★

Another Falcon choice

ATARI have released another model in the Falcon 030 range. It comes with 4Mb of memory but without a hard drive and sells for £799. One megabyte machines were promised for early August.

Big Blue's cheaper on Atari

SPECIALIST Compo Software (0480 891819) have made emulation more affordable to ST owners and released the first 286 PC board for the Falcon.

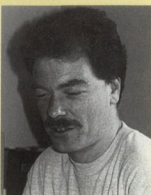
With a new £55 price, PC Speed works four times faster than original PCs and is claimed to be ideal for those bringing work home, studying an Open University course or learning DOS.

Compo boss Neal O'nions said the firm were able to bring the price down because of falling component costs.

Meanwhile, the company's new Falcon Speed using an 80286 processor running at 16MHz has just been launched for owners of Atari's top computer.

Sixteen colours can be shown under Windows at VGA resolution and the board has a Norton factor of around 12, depending on the screen mode. Price: £229.

Neither board is supplied with DOS, although the operating system will be available as an extra from Compo at a price that remains to be fixed.



Neal O'nions: Bringing emulation costs down

Calamus finds new home

THE Calamus range of desktop publishing software is now sold and supported in Britain through JCA Europe, a new firm set up by Riverdene public domain library and printing consultancy JCA.

The entire range of DMC products is available through the firm, including Calamus versions 1.09n, S and SL and new printer drivers for LaserJet 4 and DeskJet 550C owners.

According to the firm's Alastair Craig, JCA won the right to represent the German company in Britain because of their knowledge of the printing industry and ST market.

They promise existing users will be given full software support and offered updates to the programs for a small charge as they become available.

Customers' details should be sent to the firm at 30a School Road, Tilehurst, Reading RG3 5AN or telephoned on 0734 452416.

Rendering becomes Atari reality

LONDON-based CGS ComputerBild (081-686 8121) are set to bring rendering to Atari computers for users who need to design 3D objects for product designs or in motion for animations.

InShape will come as two parts - Modeller and Shader. Modeller will be used to edit 64 available objects, view a scene through up to 32 settings and set the lighting for the image.

Users will be able to make film sequences, with the object size and position, as well as the colours of the light sources animated.

The Shader will make pictures from the scenes available in the Modeller using over 16 million colours.

A Falcon version which needs 4Mb of memory and a maths co-processor will cost £120 and a TT version with extra features will cost £240.

MicroProse turbulence clears

FLIGHT simulator specialists MicroProse have merged with Spectrum Holobyte in a move which is promised to extend the range of software available to ST users.

Holobyte take a majority stake of 60 per cent in the firm and MicroProse gain funding of \$10 million just months after announcing a net loss of \$5.3 million for the year ended March 31.

Their loss was blamed on a late entry into the booming console market, an unsuccessful venture into arcades, delayed product launches and increased overheads dragging the firm down.

The company's spokesman Jason Dutton said: "Spectrum Holobyte have long been respected in the flight sim market.

"This merger will help us to extend our current range of outstanding products."

More memory for Falcon

ONE of the first Falcon memory expansion boards has just been added to CGS ComputerBild's (081-686 8121) range of Atari products.

The board replaces the computer's existing memory and accepts either 1Mb or 4Mb industry-standard SIMM chips to increase the machine's RAM to 14Mb.

The 1Mb Falcon's memory can be expanded to 4 or 16Mb, using a similar board that accepts only 1Mb chips.

Unpopulated each costs £76 and although no soldering is needed the firm are offering a fitting service for an extra £45 per carriage. Maths co-processors can be bought for £60.

On sale!

REMEMBER, the next issue of Atari ST User hits the news-stands on September 2. Don't miss it!

The most progressive Atari developers have combined to launch:-

Le'ST Get Serious Show!

If you are serious about your Atari then this is the show for you

This is not a show full of stand upon stand selling disk boxes, joysticks and plastic bags! It is a show where you can come and talk to Atari experts on Music, Video, DTP, PD, Word Processing, Sound Sampling, Midi and all matters Atari. Come and see a host of new hardware and software add-ons for your ST or Falcon, some of them not yet even reviewed in the Atari press.

Everything for the Atari will of course be on sale in, what will probably be, the widest range of Atari products ever seen at one time in the UK. From a mouse mat to a complete new Falcon system, from the latest version of NVDI, to a new hard disk, to a 12Mb memory upgrade for your MEGA ST, to a 14Mb upgrade to your Falcon, – we even hope to show the sensational new CuBase Audio. Find out what the Falcon030 is all about, and find everything at the sort of special prices you would expect at an exhibition.

What's more, if you bring your Atari with you then you can take advantage of our while you wait upgrade service.

So where is it?

Novotel Hammersmith

Salon Bourg Suite
London – Tel 081 741 1555

When and how much?

Saturday, 14th August, 1993

10am until 6pm
£3.00 (£1.50 after 2 pm)

If you own an ST, STe, ST F, ST FM, STacey, MEGA ST, MEGA STe, TT or Falcon we want to meet you. Join us at the Novotel and talk to the experts. See you there!

Everything will be on sale including the latest products from 16/32, AOC, Atari Corporation (UK) Ltd, Atari Workshop, Bella, CGS ComputerBild, Club CuBase, COMPO Software, Digital Arts, Eizo, Elco, Epson, Gribif, Harmon Audio, Hewlett Packard, Hisoft, InShape, Marpet, Migraph, Overscan, Prospero, Qume, Ricoh, Sack Electronics, ST Club, ST Review, System Solutions, Take Control, Titan Designs, Trade It!, UK Midi Association and many, many more!

Le'ST Get Serious shows are planned for London (26th September), Manchester and Birmingham. Call one of the organisers for more information. Ray Cross (081 686 8121), David Encil (021 414 1630) or Neal O'nions (0480 891819).

Euro News

Don Maple with the latest news and gossip from across the Channel



Illegal modem sales ban

A ban on unapproved modems in Europe is imminent, according to trade publication *Communications Week*.

The ban is already in force in many countries. But Germany and Britain – two of Europe's largest markets for "grey" modems – still allow sales of unapproved models, although their use is forbidden.

Under pressure from modem manufacturers, the

German Ministry of Posts and Telecommunications with this summer ban the sale of all unapproved telecommunication equipment.

In Britain, two-thirds of modem manufacturers have agreed to lobby the UK government to follow suit.

Their demand is either to enforce more stringently existing laws banning use of unapproved modems or to introduce an all-out ban.

More Falcon memory

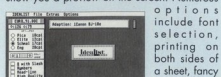
FalconWINGS, a memory card that replaces Falcon's own, is now available in a number of configurations. There are three models: 8Mb costing DM888 (£355), 12Mb for DM1,249 (£500) and 14Mb at DM1,549 (£620). The cards come from Heyer & Neumann, Hansmannstr 19, Aachen, Germany.

3K ComputerBild close down

3K ComputerBild, famous for programs such as Didot and Relouche, have ceased trading. However, their product line has been taken over by Digital Arts so support and development continues. Users of 3K's programs should therefore experience no inconvenience.

If you find that double-clicking on a text file and sending it to the printer just doesn't cut it, you ought to try Idealist. This comprehensive printing program will print even the most idealistic ideas ideally!

It can create superbly arranged output on any printer, send the output to a file, even show you a preview on the screen. Numerous



Idealist

Universal icons

Zoom!, a cut-down version of Interface 2.2 resource construction set containing only the powerful icon editor portion of this program, is available now at DM79 (£32).

Requiring a minimum of 1Mb of RAM, it runs both on the Falcon and under MultiTOS. Zoom! supports animated colour icons in two, four, 16 and 256 colours and up to 640 x 400 pixels in size.

It can edit icons in up to four resource sets simultaneously and imports/exports images in (X)IMM and ICN formats, and loads Windows and OS/2 colour icons.

The program comes with a library of 150 icons and is available from SHIFT GmbH, Kompagniestrasse 13, Flensburg, Germany.



Zoom!

headers and margin settings.

It is possible to print in multiple columns and even sideways. Two utility programs, IdeaForm and IdeaBook, can reformat the documents further.

Like virtually all German PD the program runs under MultiTOS and on big screen monitors. As a bonus there is an English resource file.

The current version, v3.302, can be had for a very reasonable DM20 (about £8 – I'd make it an even ten) from the author Christoph Bartholme, Etlinger Strasse 37, 76137 Karlsruhe, Germany.



The German Atari magazine market has just experienced a big shake-up.

There were three major ST publications: *ST Computer*, *ST Magazin* and *TOS*. However, the recession and shrinking advertising income have forced *TOS* to close its doors by merging with *ST Computer*, the largest of the three. *TOS* was the only mag in Germany to sport a monthly cover disk.

And this news was still hot as the rumours of *ST Magazin's* closure also started circulating, only to be confirmed by subscribers getting letters to that effect. In an amazing move it will also be merged with *ST Computer*.

All this occurred just as Atari Germany started advertising the Falcon. The ad is identical to the one seen in British magazines because Atari marketing is now done from France on a Europe-wide basis.

The "Now, all that communicates communicates" slogan was translated into the German equivalent of "Atari Falcon 030. And everything dialogues" (*sic*) while the tolerant Dutch just adopted the original English phrase.

EXCITING

But what is even more exciting is that Atari Germany have also started advertising through local radio stations, in spite of the fact that the demand for Falcons in Germany still outnumbers supply.

The reorganisation of Atari subsidiaries continues. Atari Germany have terminated all dealer contracts effective September 30 this year. In place of the old contract there is now a new one, the details of which are not yet entirely clear.

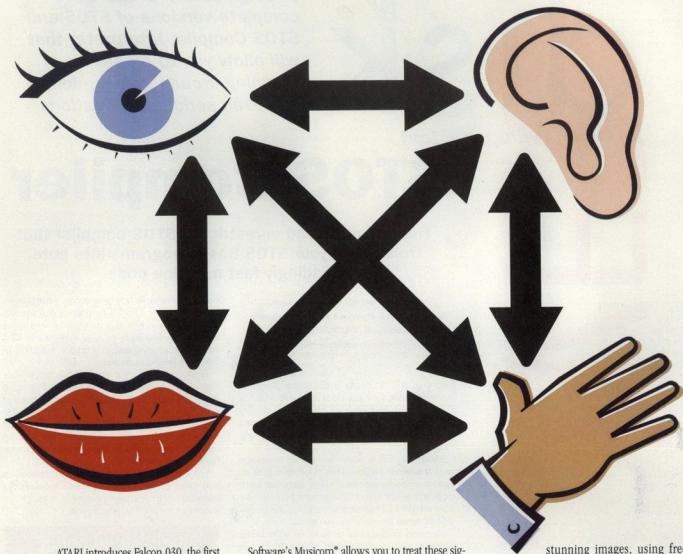
Atari appear to be making an effort to offer dealers better conditions than before but with some new restrictions. Store-front dealers are favoured and mail order cut-throat pricing seems to be frowned upon. This seems to follow a similar reorganisation happening in the USA.

The famous Maus network – a regular feature in this column – continues to buzz with excitement. The latest two topics focus on buying Atari stock and producing a CD-ROM of Atari software.

The letter is to contain all that wonderful PD software Germany is famous for in one single volume and is to be sold at cost. Stay tuned for availability.



If you understand this, you understand the Falcon.



ATARI introduces Falcon 030, the first ever micro computer which instantly communicates with all your current and future audio-video equipment. Now, TV, Monitor, HiFi, CD, CDV, R-DAT, DCC, VHS, telephone, synthesizer, photo CD, camcorder, printer, modem, ... communicate with each other, allowing you to get the most out of each piece of equipment. A true technological revolution, Falcon 030 is operated by a 68030 processor working in parallel with a DSP, which is able to treat digital data at a very high speed.

Falcon Audio, the universe of Direct to Disk: Falcon 030™ offers, as standard, "Direct-to-Disk" recording, from a microphone (voice or instrumentation), a Walkman or a HiFi, via a simple stereo plug and also through its MIDI interface. Compo

Software's Musicom® allows you to treat these signals at better than CD quality: equalizer, Digital Delay (echo), harmonizer, flanger or even karaoke.

Falcon Video, manipulating images: Falcon 030 can be connected to almost any

stunning images, using freehand drawing, lines, shapes, patterns, perspective, colours, and even create animations which can be stored on video. **Falcon Photo, a personal computer studio:** Thanks to Studio Photo* from

Euro-Soft, the Falcon 030 treats digital photos in all formats, including Kodak CD, allowing special effects and retouching. **Falcon Software:** Falcon 030 already benefits from a wide range of innovative software and now, using

video source. With OverScan's Overlay* and Genlock* you can add titles, animations, sound to your videos and generate presentations combining a slide show with sound. **Falcon Graphic, a choice of 65,536 colours per pixel:** With Hisoft's True Paint*, you can produce

Falcon Speed* from Sack Electronics you can run MS-DOS programs on your Falcon 030. For more information write to: ATARI Corp. Ltd, Railway Terrace SLOUGH - BERKSHIRE-ENGLAND SL2 5BZ. Software by Compo, Euro-Soft, OverScan Sack Tel.: 0480 891819, by Hisoft Tel.: 0525 718181.

FALCON 030
ATARI

Now, all that communicates communicates.

ATARI, ATARI logo, Falcon 030, Falcon Photo, Studio Photo, OverScan, Genlock, Overlay, True Paint, Sack Electronics, Compo, Euro-Soft, Hisoft, Sack, are trademarks registered by their respective owners.

COVERdisk

This month we have a double STOS giveaway with the complete versions of STOS and STOS Compiler Interpreter that will allow you to create stunning arcade games, demos and even serious applications

STOS Compiler

The complete and unrestricted STOS compiler that transforms your STOS Basic programs into pure, blindingly fast machine code

Programmed by: Francois Lionet
Configuration: Requires STOS Interpreter
Filenames: X_COMPIL.TOS -
Self-extracting archive

There can't be many ST users who have not heard of STOS. Being a Basic-like programming language, it provides the user with all the commands required to enable quality arcade games to be written without the need for experience in the intricacies of assembly language.

However, STOS is an interpreted language and therefore suffers from a certain lack of speed in performance. This is because each command in your program has to be converted into code which the computer understands every time it is encountered.

A good analogy is to think of your basic program as a page of text written in French and being read by a person with no knowledge of the French language whatsoever. The person can interpret each word as it is encountered, using a French dictionary, or, the entire document can be translated into English by someone who can speak French.

Of course the latter method is more efficient and preferable as, once translated into English, it can be immediately read without

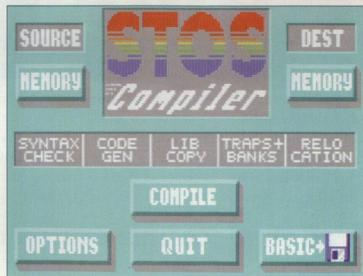
any intermediate interpretations whatsoever. Essentially, the STOS Compiler is the translator, turning the basic program into pure machine code ready to run. This results in a vast increase in speed due to the omission of the interpretation process.

Once installed, the compiler is accessible from within the STOS editor and is also extremely easy to use with the main features of the compiler being controlled through a collection of five buttons. It is possible to compile programs to or from memory or disk and an options menu allows you to configure the way the compiler behaves.

For a quick guide to getting the compiler up and running, turn to page 16 which details the installation procedure and runs through an example compilation procedure.

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.



Turn your STOS basic games into very fast machine code using the STOS Compiler.

STOS - The Games Creator

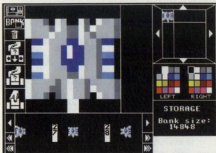
Programmed by: Francois Lianet
& Constantin Botiropoulos
Configuration: All STs (except TOS
v2.05/6) - all resolutions
Filename(s): X_STOS1.TOS, X_STOS2.TOS,
X_STOS3.TOS - Self-extracting archives

Together with the compiler, the STOS interpreter will allow you to easily create some pretty fast games and programs to complement with many commercial titles on the market.

Just take a look through much of the PD software available and you'll find that a large proportion is written in STOS, proving just how powerful and popular this programming language actually is.

Although there is a comprehensive list of commands (over 340) that make creating games easy, such as those for manipulating

Yes, that's right, we are giving you the fully working and latest version of the STOS interpreter to complement the compiler! Aren't we generous to a fault?



At the press of a couple of keys, you can bring up the sprite editor to create the sprites for your game

sprites, graphic screens, animation and much more. STOS also provides commands which make creating drop down menus, file selectors and windows extremely easy, enabling more serious applications such as wordprocessors or spreadsheets to be developed.

The three archived STOS files on our CoverDisk need to be copied to their own blank disk. X_STOS1.TOS contains the main STOS interpreter files and is auto-booting (label this disk STOS Interpreter), X_STOS2.TOS contains STOS accessories which can be loaded along with STOS and which provide useful features (label this disk STOS Accessories).

The last disk contains example games written with STOS (label this disk STOS Games).

The accessories make program development much easier and include such utilities as a sprite definer, map editor, music editor, character editor, icon editor and others (including the compiler). These accessories are available from within the STOS editor (subject to available memory) and are available by pressing the Help key.

Of particular interest to game designers are the sprite and map editors. These two utilities allow you to create, edit and save sprites and graphic blocks. Sprites are generally the things you see moving on the screen, such as a spaceship controlled by the player and even the bullets which are fired.

The map editor allows you to create "building blocks" which you can create a scrolling terrain or backdrop to your game which the sprites move over.

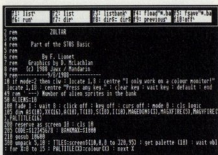
Because these utilities

are available from within the STOS editor, you can be writing a piece of code that controls a sprites movement, then switch to the sprite editor to actually draw the sprite which the code will manipulate, then, after saving the sprite, flick back to the editor to finish of the code or test it.

This level of integration means that development of a game is both quick and efficient and is a major reason behind the success of the STOS language.

Once you have copied each of the three files to a blank formatted disk, execute each one in order to extract them. As each archived program finishes extracting, be sure to delete the archived file from the blank disk as it is now obsolete and is just wasting space.

With all files successfully extracted, turn to page 16 for details on how to install the STOS compiler into the STOS interpreter



The STOS editor is where you enter your program code for the next blockbuster game

STOS Basic sprite commands

Take a look at the comprehensive range of sprite commands available which make manipulating sprites a real breeze

| | |
|--------------|---|
| SPRITE | Draw a sprite |
| MOVE | Start/stop movements |
| MOVE X | Move sprites left and right using interrupts |
| MOVE Y | Move sprites up and down using interrupts |
| ANIM | Animate a sprite |
| PUT SPRITE | Copy a sprite to the screen |
| GET SPRITE | Make a rectangular section of the screen into a sprite |
| UPDATE | Update sprites |
| AUTOBACK | Switch off link between sprite background and real screen |
| X SPRITE | Get X co-ordinate of sprite |
| Y SPRITE | Get Y co-ordinate of sprite |
| MOVON | Check if sprite is currently in motion |
| COLLIDE | Test for sprite collisions |
| LIMIT SPRITE | Limit sprite movements to a part of the screen |
| ZONE | Test if sprite enters a specified rectangular section of the screen |
| SET ZONE | Define up to 128 rectangular zones |
| RESET ZONE | Clear currently specified zones |
| REDRAW | Redraw a sprite |
| PRIORITY | Change sprite priority |
| DETECT | Detect pixel under sprite |
| SYNCHRO | Synchronise sprite with scrolling background |



Using the map editor, you can create detailed backdrops for a platform game or a vast terrain for a role playing game

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. Help is only available within the times specified, and no advice will be available outside these hours.

Pools Predictor v4.11

Odds against you winning millions on the pools?
Then lower them and improve your chances with
this excellent pools prediction program

Programmed by: Brian Campbell
of Bay Computers
Configuration: All STs - medium
or high resolution
Filenames: X.POOLS.TOB -
Self-extracting archive

We all dream of winning the jackpot on the pools, but the plain fact is that the odds of actually winning the damn thing are stacked against us.

Although using this program will not guarantee a win, it will certainly lower the odds a little and improve your chances of success.

Some of you may remember that this great program appeared on a previous Atari ST User CoverDisk (October '92) in demo form. The author was so impressed with the response from readers wanting to register that he has decided to allow the complete version to be given exclusively to our readers.

The Pools program is licensed shareware which means it is only available from authorised distributors, and to receive the manual and annual updates, you can register for a mere £15.

Many great programs are available as shareware and to ensure continued release and development of such programs, you should send the registration fee. This also ensures you get updates of the program.

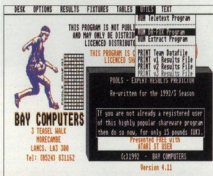
This new version has been improved and is much simpler to use than earlier versions. Added features include the ability to configure the program to accommodate almost any league in the world with little effort.

It can now accommodate the additional Scottish division commencing 1994/5; any results entered can be transferred to the Dr Fox Football Annual program (if present); an additional 390 teams have been added to the team database; the results database now contains over 35,000 results; and an automatic success rate and monitor facility on all predictions is available.

Also included is a demo of the Dr Fox Football Annual, a powerful statistical analysis program which can be used to analyse teams,

FOOTBALL EXCLUSIVE!

Included with the Pools Predictor and the Dr Fox program are the up-to-the-minute league fixtures for this season, so you won't have to enter the information yourself.



The ability to execute the Dr Fox Football Annual from within Pools Predictor makes for an extremely powerful combination

Pools memory requirements

Although Pools can be used with a 512k ST, 1Mb is recommended. The following functions are unavailable from within the program on machines with only 512k. However, they can be run as standalone programs:

- Reset League Tables
- Run Teletext Program
- Run Dr Fox Annual
- Run Extract program

fixtures and divisions with the option of creating graphs and printing the information.

What makes the Pools Predictor and Dr Fox's annual even more powerful is the fact that they can be used together as an integrated package (already set up for you on the CoverDisk) with the ability to run the Dr Fox program from within the Pools program (via the Utils menu) and the ability for data to be transferred between them.

Also, the author of the Dr Fox utility has a licence to publish the official fixtures of the major divisions, meaning users have the latest and up-to-date league data.

Leagues covered include the FA Premier League, Football League, Scottish Football League, GOM Vauxhall League, Northern Premier League Premier Division, Diadora League Premier Division and the Beazer Home League Premier Division.

The full version of the Dr Fox Football Annual is available for £7.99 and comes with all last season's results, all this season's fixtures and all results up to the date of dispatch. For further details on registering for both the Pools program and the Dr Fox program, refer to POOLS.TXT and READ_ME files respectively.



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 larger 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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Once you have extracted the three STOS archived files, you should have three disks labeled STOS Interpreter, STOS Accessories and STOS Games. If you haven't done this yet, turn to page 12 for instructions.

You must now copy the file X_COMPIL.TOS from the CoverDisk onto a blank disk labelled STOS Compiler. After you have done this, run the file X_COMPIL.TOS and the compiler will be extracted.

After the extraction has finished, delete the file X_COMPIL.TOS from the STOS Compiler disk. You are now ready to install the compiler onto your STOS Interpreter disk.

Turn off your ST for approximately 30 seconds (a good habit to adopt to avoid viruses), insert the STOS Interpreter disk and turn the ST back on.

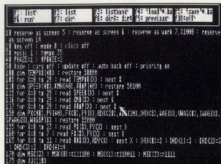
After a short time, you will see the STOS loading screen. Eventually, you will be presented with the STOS editor and the word OK, along with a flashing cursor, will appear indicating that STOS is ready for your commands.

COMMAND KEYS

This is where all the action takes place. You can enter your program instructions, load, save or edit basic programs and also call up the various accessories available, such as the sprite designer, map editor and, after we have finished here, the compiler too.

Remove the Interpreter disk and insert the Compiler disk into the drive. At the top of the screen you can see a selection commonly used commands with a function key number next to them. To load a STOS basic program, press the F4 key which brings up a box for selecting the file you wish to load.

Click on the file STOSV206.BAS and then Return. This loads the file into memory. To verify this, type the word LIST and press Return. You will see that lots of commands will scroll past (press Space to pause the listing if you wish). This is the program

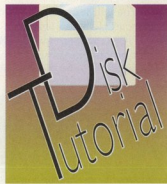


This is the STOS editor where you enter all the program code for your blockbuster game



Access resident accessories such as the sprite editor and compiler by pressing the Help key

Speedy Basic



A brief guide to using this month's double STOS giveaway, showing you how to inject some speed into your STOS Basic programs

which you have just loaded.

The actual program installs the compiler extension on to your STOS Interpreter disk and also updates your STOS version to v2.6. Don't worry if you already have v2.6 - nothing adverse will happen.

Type the command Run and press Return. The program will execute and you will be asked to insert your STOS Interpreter Language disk into the drive.

Other accessories available include this powerful sprite editor. Such utilities greatly simplify game development

Do this now, then press the G key. Your language disk will now be updated and the STOS Compiler extension installed.

After the process finishes, press the Space key to end the program and you will be taken back to the editor. Press the Undo key twice to clear the screen and type the word New and press Return to clear the program in memory.

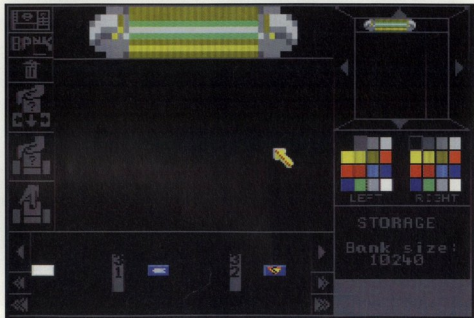
Your STOS Interpreter language disk has now been updated (if it was a early version) and also has the Compiler extension installed.

Accessing the Compiler from the STOS editor is achieved through the Compiler accessory. This, along with some others, can be found on the STOS Compiler disk and is called COMPILER.ACB. You should now go back to the ST's Desktop and copy the COMPILER.ACB accessory to the STOS Interpreter disk. Once done, load up STOS Interpreter again.

This time when the editor screen appears, you should see that the list of extensions installed includes the Compiler extension too.

There are two ways to load an accessory. One is to have an accessory automatically load when STOS Interpreter is run, the other is to load a accessory from the editor manually. The latter is achieved through the Acload command.

Insert the STOS Accessories disk and type DIR "A:*.*.ACB" and press Return. This will list all accessories (which by the way are identified by the last three characters ACB) on the disk. To load a



specific accessory, for instance the SPRITE.ACB accessory, simply type Acload "SPRITE.ACB". If you then press the HELP key, a box will appear and at the bottom of the box is a list of accessories currently loaded.

As you can see, the number one slot has the sprite accessory loaded. To execute the accessory, simply press the appropriate function key, in this case, F1.

To have the STOS Interpreter load up frequently used accessories at startup, you must run the configuration program. This program is, spookily enough, called CONFIG.BAS and is found on the STOS Interpreter disk. Load this now by typing Load "CONFIG.BAS" then typing Run and pressing Return.

Shortly you will be seen various parameters, such as default resolution and default language, which can be changed to your needs. For now, do not change anything, but simply click on the Next Page box at the bottom right of the screen.

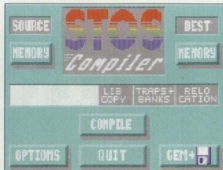
AUTO LOADING

The next screen allows you to edit the function activated by the function keys, and at the bottom of the screen, a list of loaded accessories can be seen. At the moment, this probably only contains the sprite accessory at slot number one.

To tell the editor to load an accessory automatically at startup, simply click on the blank space to the right of the required function number of your choice and then type in the filename of the accessory (including the ACB extender) which is to be loaded and then press Return. Try this now by entering COMPILER.ACB into slot number two. To save any changes made, be sure to click on the save On Disk button, otherwise all changes will be lost when you reboot.

If you now re-load the STOS Interpreter, when you are presented with the editor screen, you will see that the editor will automatically load the accessories you specified in the configuration program.

We will now run through a compilation process to show just how simple it is to use the STOS Compiler. What we will do is use one of the example games on the STOS Games disk and compile it into pure



Once installed, the STOS Compiler is extremely easy to use and allows compilation to either memory or disk



STOS can be configured to your own personal preferences with the ability to automatically load frequently used accessories

Hard drive owners

For those of you lucky enough to have a hard drive, you can copy the contents of the STOS Interpreter, Compiler and Accessories onto a partition so that disk swapping is avoided.

machine code, but first of all, we will see how fast the game is before compiling it. Insert the STOS Games disk and press the F4 key. A file selector box will appear showing three folders called Bullet, Orbit and Zoltar. Click on the Bullet folder and select BULLET.BAS, then press Return. This will load the Bullet basic program into memory.

When it has loaded, type Run to execute the game. Those of you with only 512k may have to clear any accessories which may be loaded to avoid any out of memory messages. To clear accessories, type ACCNEW before you run the game.

Play the game for a while and keep in mind the speed of animation. Now we will compile it and see how it compares. Press Control and the C key at the same time to exit the game and then press the Undo key twice to clear the screen.

Put your STOS Interpreter disk in the drive and load the compiler accessory by typing Acload "COMPILER.ACB". Now press Help and press the appropriate function key to execute the compiler.



You will probably be asked to insert the STOS Compiler disk at this point. Do so and eventually the compiler menu screen will appear. As you can see, there are a mere six buttons to cope with. Under words Source and Destination you can see two buttons marked Memory. These specify where the program to be compiled is [Source] and where it is to be compiled to [Destination].

Click on the button under the word Destination and it will change to Disk. This means we are going to compile the basic program and save it to a disk. Next, click on the button marked Basic and it will change to Gem. This changes the type of compiled file produced. A Basic compiled file needs to be loaded into STOS Interpreter and executed from there, whereas a GEM-type compiled program is a standalone executable file.

Now click on Compile and you will be asked to specify a filename for the compiled program, type in BULLET.PRG and click on Return. The compilation process will now begin with a white status bar indicating the progress.

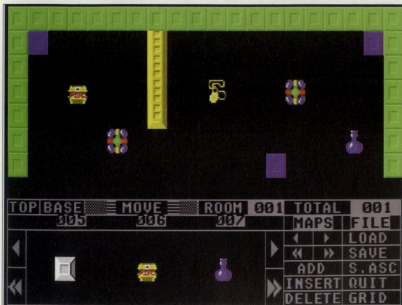
FINISHING OFF

After the compilation process is finished, the compiler prints the statistics regarding the size of the compiled file and the amount of time taken to compile it. Click the mouse button then click on Quit to exit.

Now type System to inform STOS Interpreter that you want to return to the ST's desktop and press the Y key to confirm. If you examine the disk in the drive, you will see that the file BULLET.PRG is present. This is the compiled version of the BULLET.BAS program file. You should now copy the BULLET.PRG file into the BULLET folder.

To run the program, double-click on the BULLET.PRG file. As you can see, there is a marked increase in speed over the uncompiled version and the whole compilation process is extremely easy.

To get the most out of the compiler it is best to use the manual which contains detailed information such as optimising the compiler to take advantage of RAM disks, a tutorial section, information on the compiler options available and much more. For information on how to obtain this manual, turn to page 18.

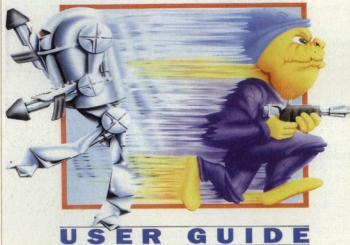


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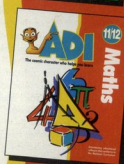
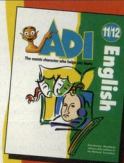
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The act of gaining unauthorised access to information held on a computer or computer-based system, whether that computer is connected to a modem, or similar communications device, or physically located in the same place as the hacker, is what we mean by "hacking".

Computer hacking has moved on since the phrase first came into common computer industry usage in the early 70s. Then, it was commonly applied to a computer nerd who spent most of his spare time playing around with electronics to produce a VHF radio from (seemingly) an empty cornflake packet, a tube of glue and some wire.

It took the arrival of modems on to the computing scene in the late 70s to change the image of the hacker from benign to slightly malevolent, with the nerd turning into a computer buff gaining unauthorised access to an online system, as seen in films such as *War Games* and, more recently, *Sneakers*.

PENNY WHISTLE

Computer hacking has its origins in phone phreaking, a hobby that also started in the US, when electronics enthusiasts of the 1960s and 70s discovered they could use special control tones over the phone network to switch calls all over the world - as operators do - without paying.

The first phone phreaker who shot to prominence in the 1970s was John Draper, who became known as Captain Crunch after the breakfast cereal in which he found a free penny whistle that generated the 2,600 cycles per second (hertz) signal that AT&T used to control its phone network at the time.

Using the whistle, which effectively did the same job as an electronic box of tricks costing thousands of dollars in the early 1970s, Draper was able to call around the world free of charge. His much-publicised activities (he got caught several times) prompted other electronics enthusiasts to build the electronic equivalent of a penny whistle and "phreak" calls around the world free of charge.

AT&T and other telecoms companies, BT included, gradually upgraded their networks to the point where any audio activity on the local loop (the name for the link between the phone exchange and the subscriber's phone) was carefully monitored for "unusual" tones, so putting the phone phreakers out of business.

It was natural then, when computers and modems arrived on the scene, that the phreakers should migrate to the online world and start applying their knowledge of the phone networks to the modem world.

Pretty soon, electronic bulletin board systems (BBSs) sprang up around the world, and one of the first topics of discussion was (you guessed) phone phreaking and related activities.

It was equally natural that information on phone numbers, IDs and passwords should be exchanged on these early BBSs. Back in 1984, this writer, having played with phones since the 1960s, decided to invest in a modem for my computer. I joined Micronet, a computing information

HACK

Across the world, so-called "secure" computer networks in banks, governments and businesses are continually host to a group of users who most definitely shouldn't be there. Steve Gold exposes the twilight world of the hacker...

provider for Prestel, the BT online video data network.

Micronet has several thousand pages of information online on Prestel. Prestel, which still operates as a business information service today, had around a quarter of million of teletext-style pages held on its databases, for which users needed a computer, modem, ID and password to access.

Unfortunately, because Prestel was then a trunk call away from my parents' house, the phone bills that arrived at the end of the quarter stretched into the hundreds of pounds. Yours truly was forced to improvise and start writing about computers on Micronet.

By the end of 1984, I had full editing rights on Prestel. Along with other editors, in the course of our electronic meanderings, we came across some pages that gave us some vital information about other, non-public Prestel access numbers.

By dialling these other numbers, I discovered one new Prestel computer that

had an ID and password on its welcome page. After keying in these details, I was welcomed as a system manager - in short, I have top level access to Prestel.

Along with a fellow computer enthusiast/contributor to Micronet, Robert Schifreen, I spent several days looking around Prestel, exploring the nooks and crannies that I had never before had access to.

LOOP HOLES

Then, being (reasonably) honest, if stupid, citizens, we told Micronet of our findings. Micronet told Prestel who, perhaps surprisingly, merely closed the loopholes we had found, thanking us into the bargain.

Six months later, in March 1985, after a lot of anti-hacker publicity in the national press, we were arrested by Scotland Yard's then fledgling computer crime squad, and charged with offences under the Forgery Act. It wasn't difficult to

KED!

see why – we didn't dispute that we had obtained unauthorised access, but we did dispute that it was illegal.

That's why Schifreen and I pleaded not guilty. Looking back, we had nothing to lose – we both lost our jobs, so what the hey? It took several court appearances spanning more than three years before we cleared our names once and for all. The courts then ruled that the application of the Forgery Act was a misapplication of the law.

Of course, had we been prosecuted under the Theft Act, charged with the tuppence-worth of electricity we had stolen in using Prestel illicitly, we would have been found guilty – and probably fined a hundred pounds or so.

But BT insisted on testing the law. As well as costing BT an estimated £1.8 million, the case of "The Crown vs Gold and Another" went into the statute books and presented The Crown with a need to change the law to take account of computer hacking – specifically, the gaining of unauthorised access to computer systems.

The result was The Computer Misuse Act, which passed in law in 1990.

PROSECUTION

While the British Government passed the Computer Misuse Act in the late summer of 1990, it took the first real prosecution under the legislation almost three years to percolate through the Magistrate's Court and up to the Crown Court.

In 1991, Paul Bedworth, a self-confessed computer hacker, was arrested at his mother's home in Ilkley, North Yorkshire, and charged with gaining unauthorised access to European Commission [EC] office computers in Luxembourg as well as around the world.

Two years later, in February of this year, when the case came up before a jury trial at Southwark Crown court, he admitted what he did, but claimed he did it for kicks. His defence? He claimed he was addicted to computer hacking.

In court, for the Crown, James Richardson, prosecuting, said that Bedworth was tapping into offices at the EC in Luxembourg and even the experts were worried.

"He caused havoc at universities all around the world so that the computer systems were inaccessible to anyone but him," Richardson told the Court.

According to Richardson, Bedworth started to become obsessed with comput-

ers at the age of 14. After associating with other network hackers, he called himself Olicano, the Roman name for his home town of Ilkley.

To Scotland Yard's computer crime squad, the case was cut and dried, despite the fact it was the first major case under the Computer Misuse Act, 1990.

In court, Bedworth admitted that he was scared when the police raided his mother's house and pinioned him to the bed late one evening in 1991. The result of the scare, he said, was that he realised that hacking was illegal and, by his own admission, stupid.

Alistair Kelman, his barrister, claimed that his client was addicted to computer hacking and, as such, could not have had the intent – the legal term is *mens rea* – to commit a crime under the Computer Misuse Act.

The defence seemed to persuade the jury to acquit Bedworth, although most now agree that the unnecessary violence displayed against Bedworth at the time of his arrest was the police's undoing in this case, as it set the jury against the police from the earliest stages in the case.

According to Peter Sommer, a computer security consultant and the author of the *Hacker's Handbook*, written under his pen name of Hugo Cornwall, said he was surprised at the not-guilty verdict, given the nature of the defence.

"I think it was successful because the jury is looking to let the guy off, due to the police's heavy-handed behaviour when they arrested him," he said.

The crown needed to change the law to take account of computer hacking

According to Sommer, although the defence of computer addiction was an unusual one, it was able to beat the charges involved.

"In law, to make a prosecution of this type work, you have to ensure that there is the *mens rea*, the reason of intent. To convince the jury otherwise, you have to demonstrate that the compulsion is sufficiently strong to overcome the intent, as has clearly happened in this case," Sommer said.

Despite the publicity surrounding the case, Sommer said that there are very few real hackers, such as those portrayed in *War Games* and *Sneakers*.

"These cases are always very interesting but a distraction from the more mundane," he said, adding that the bottom line for many companies was a massive build-up of defences against the perceived threat of computer hackers.

Barrister Kelman, meanwhile, said that the significance of the case was nothing to do with the wrongful acts its sought to punish, "but the realisation that maybe what is required is a little more understanding and a little less condemnation."

Kelman admitted that Bedworth was a second-generation "anorak", but pointed out there are now large numbers of third generation anoraks at large, all of whom are well versed in computers.

"The child, whose best friend is a computer rather than a person, is not going to function normally in society. We need to be able to predict how he will behave and what treatments will restore him to normal health. Parents must demand that proper research is done into this important problem," he said.

It took until three months later, in May of this year to come to court, along with two other computer hackers arrested in parallel with Bedworth. Their case was different as, unlike Bedworth, they had pleaded guilty to offence under the Computer Misuse Act.

Neil Woods, aged 24, a computer science graduate and later computer

What the law says

The Computer Misuse Act came into force on August 29, 1990. The legislation, introduced in a private member's Bill by Michael Colvin, the Conservative MP for Romsey and Waterside, introduced three offences to the statute books.

The first level offence of obtaining unauthorised access to programs or data held on a computer is prosecutable only summarily by magistrates and carries a maximum penalty of six months' imprisonment or a £2,000 fine – or both.

An offender is only guilty of this first level offence if he intended to gain access and knew at the time that such access was unauthorised, or where an "insider" knowingly exceeds the level of authorisation to which s/he is entitled.

Hackers face prosecution for a more serious, second level, offence if they obtain unauthorised access with intent to commit or to facilitate the commission of further offences, such as theft, fraud or blackmail.

This offence is prosecutable either by magistrates or in Crown Courts, where it is punishable with up to five years' jail or an unlimited fine.

The third level offence involves the unauthorised modification of computer data. This offence is/was aimed at virus program creators and/or propagators.

This offence is prosecutable by magistrates and in the Crown Court, where it carries a maximum penalty of five years' jail and an unlimited fine.

salesman, as well as University researcher Karl Strickland, aged 22, became the first hackers to be jailed under the Computer Misuse Act, 1990, in the UK.

During the brief trial, the court heard how the pair caused an estimated £123,000-worth of chaos while breaking into an estimated 10,000 on-line systems around the world.

The list of hacked system reads like a who's who in the on-line world, ranging from NASA through to a European cancer research organisation.

No country seemed safe from Woods and Stricklands' exploits. Systems in France, Germany, Italy, and Sweden were hacked in Europe, along with systems in the US and Canada, not forgetting Russia, India, Singapore and Australia. The prosecution said in court that the list read like an atlas, rather than a list of offences.

LIKE-MINDED

Woods and Strickland were charged with conspiring to obtain telephone services dishonestly over a two-year period, as well as publishing that information on BBSs for other like-minded individuals to read.

Presiding over the case, Judge Michael Harris said that, while he accepted their activities were not designed to cause damage, it was absolutely essential that computer systems, which he described as playing an essential role in 20th century life, be protected.

"If your passion had been cars rather than computers we would have called your conduct delinquent, and I don't shrink from the analogy of describing what you were doing as intellectual joyriding," he said.

"Computers now form a central role in our lives, containing personal details, financial details, confidential matters of companies and government departments and many business organisations.

"Some, providing emergency services, depend on their computers to deliver those services," he added.

Woods and Strickland are known to be members of a gang of four computer hackers known as the "eight-legged groovy machine". During my investigation, I have discovered that two other people were in the Bedworthy-Woods-Strickland team.

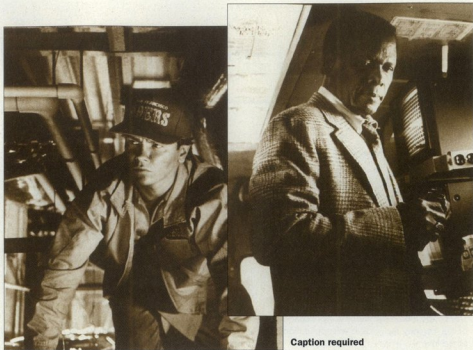
Scotland Yard are said to have known of their existence for some time but have not pursued them for a reason best known to themselves.

In the US, modems have been in widespread use since the early 1980s. In 1982, a typical US modem cost less than a quarter of the cost its UK equivalent, thanks to a more liberal telecommunications policy.

The result was that the US experienced its first widespread hacking problems in 1982, while UK computer users were more concerned with playing Mantic Miner on the then-new Sinclair Spectrum.

The US legislature is far more complex than in the UK, however, with petty interstate squabbles resulting in criminals being able to drive over the state line and escape in true James Cagney style.

In the late 1980s, several state legisla-



Caption required

tures, notably those of California and Texas, passed specific anti-hacking laws. It took the case of Robert Morris in 1988 to bring the US powers that be round to the fact that specific anti-computer crime legislation simply does not work on its own, just as anti-drug legislation does not work on its own.

Merely making something illegal does not eradicate the problem. In many cases it can actually make the problem worse.

Robert Morris Junior (his father was a retired figure in the US National Security Agency) created a worm program that masqueraded as a message file that whizzed from user to user on the Arpanet educational network.

The Arpanet is a world-wide network of computer systems. The idea behind the network is that users can communicate with each other with simple notes and programs. The Arpanet is really a free-form notice-board.

As Morris' worm program was read by its recipients, so it duplicated itself and posted copies to other users. In addition, the program sat on the computer it was read on, running program loops, effectively paralysing the computer system.

The Morris worm paralysed more than 8,000 Arpanet-linked mainframes around the world. Faced with the million-dollar clean-up operation, and with red faces all round, the US government acted swiftly to form CERT - the Computer Emergency Resource Team - to act as a SWAT-style team to move in, analyse and, hopefully, solve computer crimes as they occurred.

CERT was set up in December of 1988. The group, assembled from more than 100 experts in several fields of computer expertise, is available around the clock, and operates under the control of the Pentagon and the Software Engineering Institute at Pittsburgh's Carnegie Mellon University, where a six-member core team

of CERT staff are based.

Today, CERT's operations are shrouded in secrecy. Ultimate control of the team is, presumably, the task of the US President. CERT staff reportedly have no legal powers.

CERT's original brief was to amass a central resource of information, based around an expert computer system program, that any citizen in the US can call upon.

The concept is that of a Thunderbirds-style international rescue team, able to answer questions on computer crime and able to respond to serious events at the drop of a hat.

Today, CERT is called into action whenever a serious hack occurs. Its actions are never reported. CERT is thought to have been involved in the banking industry's first full-scale ATM fraud a few months ago.

Shoppers visiting the Buckland Hills shopping mall in Connecticut one weekend in mid-May of this year were not surprised to discover one

of the mall's two ATMs out of action. They were pleasantly surprised, however, to find that the bank had spotted the problem and thoughtfully installed a temporary machine - on castors - to help them withdraw cash.

Sadly, after they inserted their cards and tapped in their PINs, they discovered that it had run out cash. The machine disappeared shortly afterwards. Within days, cardholders found that "their" cards had been used to withdraw \$50,000 worth of cash from across the US.

According to the police, the whole affair was a scam. After stealing a second-hand ATM, fraudsters reprogrammed the machine to accept cards and PINs, but not give any money out. The hackers who completed the fraud have not been caught, nor is there any likelihood of their being caught.

The authorities in the US have ascribed the fraud to a group of super hackers. The

I describe what you were doing as intellectual joyriding - Judge Harris to Woods and Strickland

New England ATM case in the US proves that hackers have moved on from accessing unauthorised systems. They are moving to crime as they progress. So, can we look forward to a gloomy future with superhackers draining the money from our accounts?

While bank ATMs can be compromised, there is little evidence to suggest that hackers are posing a major threat to civilisation as we know it.

When asked about the problem of computer hacking, Barrister Kelman said that hacking – as portrayed in the film *Sneakers* – is wildly overplayed.

"The hacker has been the whipping boy for problems in companies since the current recession started. It's vital that people realise that teenage hackers are not responsible for all the ills of the computer society," he said.

STATIC NUMBERS

Peter Sommer (Hugo Cornwall) agrees with Kelman. He said that he monitors all hacking activity through the media, as his job as a computer consultant entails. He told me that the incidence of hackers causing problems for the authorities is remaining static in terms of numbers.

"This means that, as a percentage, such cases are actually falling, when once realises that the numbers of viruses and other similar incidents is rising. There is absolutely no sign of growth at all," he said.

Sources in the US intelligence agencies are quoted as saying that they suspect a crime syndicate is involved in the New England ATM hack, but that they must have had considerable assistance from technically aware computer users.

This problem is bound to grow as the teenage hackers of the 1980s group up to become technically aware computer users. The US ATM scam has caused consternation among banking officials, who are now scrambling to create new technology card protection systems, ranging from the use of etched photocards (as seen on the N&P Visa and Royal Bank of Scotland plastic cards in the UK) through biometric scanning technology.

Biometrics involves the use of electronic images of the cardholder, his/her fingerprints and even retinal scans, to ensure that the card user is the cardholder. Sources in the hacking community suggest that the banks' actions are being carefully observed by technology hackers generally.

This use of technology by hackers to track the anti-hacking technologists is something that the authorities cannot stop. It requires them to continually seek out new anti-hacking technology, in order to stay one step ahead.

The ironic thing is that, as technology generally progresses, so the anti-hacking technologists will have to work ever harder to beat the hackers, whose arsenal of technology to attack electronic systems is improving all the time.

Where the film *War Games* portrayed a teenage hacker (Matthew Broderick), *Sneakers* a decade later shows a group of grown-up hackers strutting their stuff. Although *Sneakers* was less than technically correct in its approach to portraying hackers, it shows where the future lies.

A history of hacking

- | | | | |
|------------------|--|-----------------|---|
| Sept 1970 | John Draper, aka Captain Crunch, discovers that the penny whistle offered in boxes of Cap'n Crunch cereal perfectly duplicates the 2,600 frequency controlling the AT&T phone network. He starts to make free calls. | Feb 1989 | Kevin Mitnick, US superhacker, arrested for hacking Leeds University. Plea bargains, gets a year in jail. |
| Aug 1974 | Kevin Mitnick, a legend among hackers, begins his career of hacking into a variety of computer systems, including entering banking networks and destroying data, altering credit reports of his enemies, and disconnecting the phone lines of celebrities. His most famous exploit - hacking into the North American Defence Command in Colorado Springs - inspired <i>War Games</i> , the 1983 movie. | Jun 1989 | West German Chaos Computer Club member, Karl Koch, "commits suicide" after admitting sale of secrets to the Russians. |
| Jul 1981 | Ian Murphy, a 23-year-old known as Captain Zap on the networks, gains instant notoriety when he hacks into the White House, the Pentagon, Bellsouth's computer network and the TRW credit reference agency. He gets caught when he leaves his resume behind. | Aug 1989 | Three West Germans charged with selling hacking secrets to the KGB. Karl Koch involved. |
| Sep 1987 | German Chaos Computer Club hacks Nasa network. | Sep 1989 | West German phone voting system hacked. |
| Oct 1987 | US hackers invade national Aids hotline system. | Oct 1989 | Fifteen-year-old hacker cracks US defence computer |
| Dec 1987 | Bill Landreth - super hacker - jailed again (best known for hacking exploits in 1984). Fred Deneffe III (world's third most wanted hacker) jailed for three years. IBM international network paralysed by hacker's Christmas message. | Jan 1990 | US Govt report revealed multiple NASA hacks |
| Feb 1988 | US Security Association reports phone fraud topping \$500 million a year mark. "Holy Hacker" invades, blocks Playboy Channel. | Feb 1990 | US hacker obtains credit card by hacking. |
| Mar 1988 | Steve Wernery, German Chaos Computer Club member arrested at French Securicom conference - deported. | Mar 1990 | First US-Australian hackers arrested down under. |
| May 1988 | Kevin Anderson convicted of selling hacking information to the Russians. | Apr 1990 | Two dozen hackers rounded up in US. Twelve-year-old hacker cracks credit files. |
| Jun 1988 | NASA network hacked - again. Third time in a year. | Jun 1990 | "Legion of Doom" hackers plead guilty in US. |
| Jul 1988 | Union Bank of Switzerland "almost" loses £32 million to hacker-criminals. Nicholas Whitely arrested in connection with virus propagation. | Aug 1990 | "Baker's Dozen" hackers arrested in US. |
| Oct 1988 | Belgian Prime Minister announces Bistel government computer hacked. | Sep 1990 | First satellite hacking case in US. |
| Nov 1988 | Robert Morris Junior paralyses US Arpanet network with virus. | Nov 1990 | Hong Kong intros anti-hacking legislation. |
| Dec 1988 | "Star Wars" computer in US hacked - cost \$100,000. | Feb 1991 | "Scorpion" hacker arrested in New York. |
| Jan 1989 | Chaos Computer club releases DES encryption system for PCs - NSA and CIA "very worried." | Mar 1991 | Operation Sun Devil nets dozens of US hackers. |
| | | Jun 1991 | West Germany foils hacking attempt on President Marcos's computer banking files. |
| | | Aug 1991 | Israeli arrest 18-year-old for hacking foreign banking and credit card networks. |
| | | Jul 1992 | In New York, five teenage hackers are charged with breaking into computer systems at several regional phone companies, large firms such as Martin Marietta, universities and credit-reporting concerns such as TRW, which reportedly had 176 consumer credit records stolen. The case marks the US government's first investigative use of court-authorized wiretaps to obtain the conversation and data transmission of hackers. |
| | | Dec 1992 | Kevin Poulsen, an infamous hacker known as "Dark Dante" on the networks, is charged with stealing tasking orders relating to an Air Force military exercise. He is accused of theft of US national secrets and faces up to ten years in jail. |

It's one thing to read about the Falcon's amazing list of technical specifications, but what we really want to know is what sort of clever programs they will allow the software boys to produce.

For the musician, the most exciting of all the Falcon's features is its ability to handle direct-to-disk recording. Even the non-musician can mess around with sound on the Falcon using affordable software because the hardware part of a d-t-d system is part and parcel of the Falcon's design.

Direct-to-disk recording is a very simple concept and anyone who has used a sampler such as Replay will be familiar with it. In a sampler, sound is converted into a series of numbers using an analogue-to-digital (AD) converter and stored in RAM.

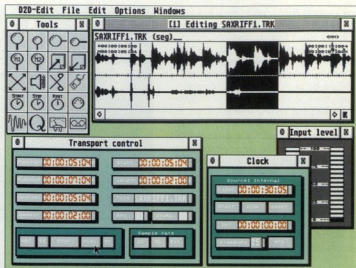
Because the data is in numeric form, it is very easy to edit using a computer. It can then be transmitted either to the Atari's speaker or through the sampler's cartridge using a digital-to-analogue (DA) converter.

Direct-to-disk recording works in exactly the same way except the data is saved directly to a hard disk instead of to the computer's RAM. Hard disks are cheaper per megabyte of space than RAM chips so it's much more economical to record to disk than to RAM.

So why all the fuss over d-t-d recording? There are four main reasons:

1. Security. As digital data is simply a series of numbers, it cannot degenerate or deteriorate, something which can happen to audio recordings on tape if stored too long in the wrong environment. Numeric data can, of course become corrupt if the storage medium is damaged.
2. Quality. Digital audio offers higher quality recordings. A small amount of noise and frequency loss is inevitable when working with tape. Good AD and DA converters can make d-t-d recording virtually noise-free.
3. Perfect backups. Being numbers, digital data can be backed up with 100 per cent accuracy without the quality loss which results when a tape is copied.
4. Ease and accuracy of editing. Again, numbers are easier to edit than audio data. You can home in on and edit the smallest section of

D2D Edit's operation is based around several windows which you can resize and position anywhere on the Desktop



Music of the future

Soon, magnetic tape will be a thing of the past as musicians switch to ultra-modern direct-to-disk recording methods. Ian Waugh checks out one of the first such programs for the Falcon...

digital data in ways which would be impossible with audio tape. Sections can be cut, copied and pasted and tracks can be bounced without any quality loss.

You can take one vocal chorus, for example, and paste it into all subsequent choruses. And you can always revert to your original recording which will still be of the same quality. A d-t-d system requires a small buffer between the disk and RAM to keep the data flowing smoothly and this needs some processing power.

Many d-t-d systems also offer digital signal processing - which is, after all,

nothing more than the clever manipulation of numbers - and this requires some heavy processing, too.

DEDICATED CHIPS

This is where the Falcon's DSP (Digital Signal Processor) chip comes in. Such dedicated chips are used in synthesizers and other musical equipment. They can manipulate data such as digital audio very quickly, leaving the main processor to concentrate on other tasks such as updating the screen.

The Falcon has built-in 16-bit AD and DA converters although they reach the outside world via stereo mini-jack sockets which are decidedly "home user". The Mic input makes it more difficult to get a good line level signal into the machine and as all musicians know, when you're dealing with sound, quality is everything.

Why oh why did Atari not give the machine a pair of stereo phono line level In and Out sockets? If you monitor a signal running through the Falcon's In to the Falcon's Out, you'll notice a loss of high frequencies. Developers D2D believe there may be some sort of feedback caused by the hardware configuration in the Falcon and this is currently

The competition

4T/FX is the first major direct-to-disk recording package for the Falcon available in the UK although there are other programs which use the Falcon's d-t-d ability.

Musicom (reviewed in our June issue) is a budget-priced d-t-d system. It has no edit facilities but you can apply a large number of effects to the recording in real-time or to a signal being passed through the system. It costs £49.45 from Compo Software. Tel: 0480 891819.

Digitape offers eight tracks of d-t-d recording

with DSP effects. Digitape currently has no UK distributor but is distributed in Germany by Trade It. Tel: 010 37 6154 9037.

Anyone wanting to integrate audio with a sequencer should check out Cubase Audio by Steinberg and Notator Logic Audio by Emagic. Both systems should be coming on-line very soon.

Steinberg is distributed by Harman UK. Tel: 0753 576911, while Emagic is distributed by Sound Technology. Tel: 0462 480000.

under investigation. You can alleviate some of the problem by reducing the gain in the Sound Control panel although I believe Atari are considering line sockets for the Falcon. This will certainly please the pros and make better quality possible for home users too.

Until then, users who want better recordings will have to rely on hardware add-ons such as the 4I/4O from D2D which has its own converters and which will bypass the Falcon's audio sockets.

AFFORDABLE

The Falcon brings the tempting prospect of affordable direct-to-disk recording within the reach of many home musicians. However, there are hidden costs:

1. Unless you are recording very short songs, the Falcon's 65Mb or 80Mb disk drives may be just too small. For serious work you may have to invest in a larger drive. And even if they are sufficient, will there be room on the disk for any other applications?
2. Four megabytes of RAM may not be enough if you are running a d-d program alongside a sequencer so you may have to add more memory.
3. What do you do when you've filled the hard disk with a recording? You must either scrap the recording to make way for another piece or back it up. Backing up to floppies is time-consuming and inconvenient and you'd need almost 50 high density disks.

You would also need a hard disk backup utility which can split the large audio files into floppy-sized sections. The alternative is a tape streamer or DAT backup device, both of which are quite expensive.

Direct-to-disk recording has many uses. The most obvious is in a music studio – home or professional – where a d-d system would run alongside a sequencer. The sequencer would hold the backing in Midi format and you could record vocals, acoustic guitar, saxophone and any other acoustic sounds on the disk. In order for this to work successfully, it is essential that the d-d software can sync to the sequencer.

With such facilities you could turn your three minute single into a ten-minute mega mix and create Watergate-type conversation recordings. Not that anyone would want to, of course...

Other uses include the application of digital effects to sounds and d-d can be used in multimedia presentations (see the feature on multimedia in our July issue). If the d-d system supports SMPTE, it could be used in the creation of soundtracks to accompany videos.

The Falcon has a DSP port which offers direct access to the DSP chip. Hardware add-ons such as D2D's 4I/4O will give better quality record-

How to use it all...



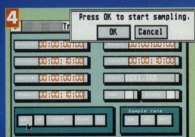
D2D Edit launches with the Tools window open. Select the Input Levels window and adjust the volume of the source signal so it is as loud as possible without hitting the top of the meter



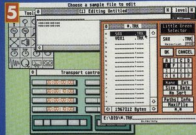
Open the Tape Control window and select the sample rate – 50 or 32kHz. Click on the File box and enter a name for the track in the file dialogue box



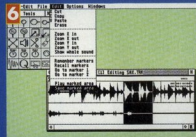
Enter the length of the track in the Length box. If you don't have the disk space available. You can overestimate and recover unused disk space later



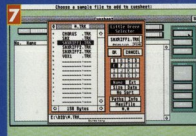
Click on Record. A dialogue box appears. Click on OK when you're ready to record. You can stop the recording by clicking on Stop or pressing both Shift keys. Record however many tracks you wish – disk space permitting



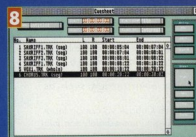
To edit a file, select Open in the File menu and select the track name from the files on disk



The Edit window shows the recording as a waveform. You can listen to sections of it by "scrubbing" across it with the mouse. Highlight a section and save it to disk.



In the Cuesheet window, click on Add and select the section you want to insert in the cue list from the dialogue box



Continue adding sections to the list. You can create a totally new recording from your original one without destroying the original. This is known as non-destructive editing

ings and offer more tracks. As we've already seen, some sort of external hardware will be essential in order to get the very best out of the system.

D2D's SPDIO is a digital interface which allows direct connection to devices with digital outputs such as DATs, CD players and samplers.

Both the 4I/4O and SPDIO are currently undergoing beta testing and their prices have yet to be determined. It

can't be very long before someone produces a digital portastudio. Akai has already launched the DR4d, a four-track hard disk recorder although at £1,599 it's rather more expensive than tape-based portastudios. But that's just the beginning.

Direct-to-disk is definitely the recording medium of the future. We have it

now on the Falcon and it's affordable.

On to the programs proper. 4T/FX is a four-track direct-to-disk recording program with built-in effects (now you know where the name comes from). The package actually contains two programs - 4T/FX which is the recording section and D2D Edit which lets you edit the recordings.

The program is protected by a dongle which plugs into the Falcon's parallel port but it has a thru socket so you can still connect a printer or other dongles.

VISUAL INPUT

The program can record at four fixed sample rates - 50, 32, 24 and 12kHz - and uses a 16-bit resolution. However, it lacks a visual input meter so it's not easy to check the level of the incoming signal.

The Falcon's 65Mb internal hard disk comes partitioned into four drives, each about 16Mb in size. You can record different tracks on different partitions of your hard disk although if you use the highest recording rate of 50kHz, each one will only be able to hold about 1min 20 secs.

Tracks one and two are "hard wired" to the Falcon's left and right inputs. The software lets you record on all four tracks at the same time but you need the 4I/4O to do this. In its absence you have to assign tracks one and two to tracks three and four and record on tracks one and two again.

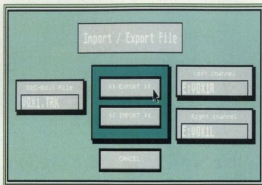
You can mix tracks together by bouncing them onto another track in a similar way to bouncing tracks on audio tape.

The built-in effects include delay, flanging, chorus, ring modulation and reverb. You can only apply one at a time (which is reasonable) and they each have up to four variable parameters. 4T/FX can run as a desk accessory simply by changing its extension from .PRG to .ACC. The blurb on the box says it can run in sync with a sequencer such as Steinberg's Cubase and Emagic's Notator Logic without using a multitasking environment such as MultiTOS.

It works with Cubase v3 but on loading Notator Logic I immediately ran into memory problems even though the Falcon 1 was using had 4Mb RAM. Logic would only load one song at a



The 4T/FX program has only one window which is arranged like a four-track recorder. You can use it as four independent tracks or as two stereo pairs



You have to use a **Transfer File function in D2D Edit to swap files between 4T/FX and D2D Edit**

time and some songs, even very short ones, wouldn't load at all.

And 4T/FX will not sync with Logic although D2D are aware of this and are trying to correct it. The program will sync to any external sequencer using MTC so if you still have a sequencer which runs on your ST, don't throw it away yet!

D2D Edit is bundled with 4T/FX but can be bought separately. In either case it requires the dongle to run. It's a stereo d-t-d recorder and editor. The stereo track cannot be split into two separate channels and is recorded on one hard disk partition.

EXTERNAL CLOCK

It has two sample rates - 50 and 32kHz - although you can change the rate of a recorded sample. The Falcon's clock can't generate a 44.1kHz or 48kHz sample rate (the usual CD and DAT sample rates) but you can use an external clock to sample at these rates using a device such as D2D's SPDIO or Singular Solution's A/D64x.

The program consists of several windows which can be resized and placed anywhere on the Desktop. There's a Toolbox window from which you can access other windows and control parts of the program.

Unlike 4T/FX, D2D Edit has a visual input level meter. However, this kept fluctuating and producing a slight noise, even without anything plugged into the ST!

Recordings are made in the Transport window. You can set the length of the recording you wish to make, or else the program will use the largest amount of free space in the disk partition. You can set punch in and out times and stamp a recording with MTC (Midi Time Code) so you can sync it to other devices.

Up to eight markers can be placed in the Markers window either by entering the positions manually or in real-time by playing a track and tapping the spacebar. You can also set them using the mouse. A scrub function plays the track as you move the mouse over it.

You can edit the sound files although edit functions are restricted to cut, copy, paste and saving marked sections. There are zoom functions which let you home in on a marked area or on the start and end points so you can position markers accurately.

The Cuesheet lets you construct a list of segments from recordings which can be played in any order. These

segments have to be named separately and saved to disk. The saving process merely saves pointer positions so it doesn't take up valuable disk space. You can't save to the Cuesheet directly from the edit window, however.

The Cuesheet can be triggered via MTC or SMPTE. You can check that the Falcon is receiving MTC using the Clock Control window.

SIDE BY SIDE

D2D Edit has many more edit facilities than 4T/FX and many users will want to use the two programs side by side. However, their file format is slightly different and to edit a 4T/FX track you have to convert it to D2D Edit format using Edit's Transfer file option.

Although the programs are easy to use, the manual omits to explain some functions and it is extremely poorly presented even for a first manual. It has no contents page, no index and not one diagram.

However, D2D are still dotting and crossing a few Is and Ts and promise that a new manual plus intermediate software updates will be sent to all registered users free of charge.

D2D Edit is a good budget program if you only want stereo recording. 4T/FX costs more but it lets you play with four tracks and it includes a range of digital effects.

The system doesn't quite produce the CD quality some people may be expecting and you'll have to try D2D's 4I/4O hardware input device to really test the Falcon's d-t-d capabilities.

The programs would benefit from the addition of a few more bells and whistles, but D2D are the first to exploit the Falcon's d-t-d capabilities and no doubt refinements will be made as the software develops. Falcons are already being used in studios and will no doubt attract many more users.

BOTTOM LINE

FEATURES

Excellent
Good
Average
Bad
Spelling

Contains the essential facilities you need for d-t-d recording.

EASE OF USE

Excellent
Good
Average
Bad
Spelling

Very easy to use - in spite of the manual - editing could be more comprehensive.

VALUE FOR MONEY

Excellent
Good
Average
Bad
Spelling

Cheaper than a quality four-track poststudio.

Product: 4T/FX (including D2D Edit)

Price: £299

Product: D2D Edit

Price: £150

Supplier: D2D Systems, St John's

Innovation Centre,

Cowley Road, Cambridge

CB4 4WB

Telephone: 05223 420252

Configuration: Falcon with hard disk, 4Mb RAM minimum

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The GEM desktop was one of the earliest graphical user interfaces around and it has made the ST one of the easiest computers in the world to use. These GUIs (pronounced "goeys"), as they are known, are now being used by everything from top-end Unix workstations with environments like X-Windows to humble 286 PCs running Microsoft Windows 3.1.

Indeed, the ST is one of the few computing platforms to have the graphical part of the operating system built in to ROM so you can be up and running within seconds of switching on. Even the Apple Mac still has to load much of its operating system from disk!

The only problem is that the GEM environment is pretty featureless – even TOS 2.06 wasn't as big an improvement as it could have been. To provide the "missing" features, several programmers have come up with alternatives.

They all work in much the same way – they are run like any other standard GEM program but they remain in memory enabling you to work with files and disks in the same way as you would on the GEM desktop.

When you run another program, they remain in memory and when you quit that program, the replacement desktop is reloaded. You can, of course, quit at any time and return to

Enhance your desktop

Tired of the old GEM icons? Andrew Wright looks at bright new replacements

the standard GEM desktop, if you need to.

On the plus side, you get many more accessible features and on the negative side, you use up more RAM and spend longer waiting for your working environment to appear. To help you weigh up the pros and cons, take a look at the list of features and decide which you need and which you don't.

Then look at the comparative table and make your choice. Whether

you really need a replacement desktop will depend on how much time you spend on the desktop and how much time you spend running programs.

If you move files around frequently and have a large disk collection, a replacement desktop might be just what you need – the extra features make file management much easier and can speed up the way you work considerably, particularly if you're a hard drive owner.

Increase your desktop's power

Memory

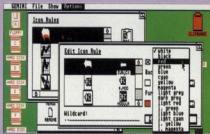
The desktops take up varying amounts of the ST's RAM but the better ones like NeoDesk and KAOSDesk have a switchable facility whereby you can unload almost the entire desktop program when another program is run. Of course, it all has to be loaded in again when you quit the program and that can take time but if you're short of RAM, these two are ideal.



NeoDesk's Unload for Execute feature is accessed from the Set Preferences dialogue

Colour

Colour support depends on whether you need it. There's little point in running a desktop in low resolution as you simply can't see enough to work properly – but in medium resolution Gemini lets you change the colours of your icons. Obviously there are only four colours to choose from – green, red, black and white – but it can make life that bit more fun.



Colouring Icons with Gemini

Display

The more windows you can open, the easier life is, especially if you have a hard drive with several partitions. You can then swap files around from one or two floppy disks and up to five separate partitions or folders.

Some desktops let you use a smaller screen font which means you can display more files in text mode in a window while



Editing Icons with NeoDesk

Gemini even lets you chose a smaller icon mode as well as using various monospaced GDOS fonts.

Icon editors are another handy feature – they let you customise the icons for your own purposes. A supplied editor is handy but all the program share a common icon file format (they're contained in the resource files) so with a dedicated resource file editor you could add your own anyway.

Menu delete

To delete a file with TOS 1.x, you have to drag the file into the bin. If you can't see the bin, it makes it a little awkward. TOS 2.0x and some replacement desktops include a menu command to delete files when the bin is hidden under half a dozen windows.

Select all

If you've ever tried copying 100 small files from one folder to another in one go, you'll understand why this feature is so useful. TOS 1.x allows you to select multiple files but it won't let you select a file if it's not in the window – choose Select All and every file in the directory or folder is selected, whether or not you can see it.

Teradesk

Teradesk is the newest of the replacements and it has proved very popular despite a relative lack of features. It's also free!

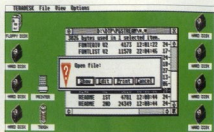
Version 1.24 (1.32 is rumoured to be out there somewhere) comes with comprehensive English documentation and looks reasonably good although the icons are somewhat chunky, as well as ugly, and only four can be arranged top to bottom in medium resolution, as opposed to five in the others. Teradesk will work with icons in other formats, including the TOS 2.Ox and TOS 3.Ox resource files.

Teradesk loads relatively quickly, due to its small size, which makes it useful for floppy owners or the more impatient hard drive users. It can't be unloaded from memory when a program is running, though, making it less attractive if you've got a basic 520ST/STE.

One particularly good feature is the



Program icons on the Teradesk desktop – it saves hunting in folders



Teradesk Show/edit/print option when a data or text file is double clicked

ability to install the text editor of your choice – Tempus 2 for example – so that when you double-click on a file from the desktop, you're presented with the option to show, edit or print.

You can also display hidden or system files, set a file mask with wild cards and cycle between open windows. If you don't want to spend much money but need the most significant features of a replacement desktop such select all files, more than four windows and running program icons directly from the desktop, Teradesk is the ideal starting point.

KAOSdesk

KAOSdesk is an attractive shareware replacement desktop that was designed to run with KAOS 1.4.1, a German replacement for TOS 1.4 with all the bugs ironed out, though it runs quite happily on any TOS 1.2/1.4 system.

Although intended for mono monitors, it will run in almost any resolution and it has a choice of five desktop icons, including separate ones for floppy drives, hard drives, printer and RAM disk. Up to 20 program or data files can be mounted on the desktop.

Window icons can be designed from scratch or edited using the supplied program and over 30 icons are supplied with the program, each of which is assigned to a particular program, file or extender using an Ascii configuration file. In text mode, filenames are displayed in one of three sizes, includ-

ing small which lets you view 22 filenames in medium resolution as opposed to 17 with the normal text size.

Interestingly, the author has disabled the horizontal scroll bars on the drive windows – instead you have the ability to see the amount of free disk space instantly, using fast custom routines, simply by clicking anywhere on the scroll bar. Another useful feature is the ability to display Wordplus format documents from the desktop simply by double-clicking on them.

Various options are possible, chosen from the Settings dialogue. KAOSdesk can display the time in the top right corner, show hidden or system files, or pause after a TOS program is executed.

It takes up the least memory of any of the four desktops reviewed here and is highly recommended for users of standard or 1Mb STs as it can be unloaded from memory when another program is run, leaving only a 10k overhead. Its main limitation is that only four windows are permitted at once.

Gemini

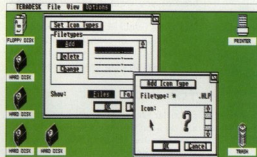
Gemini is another PD replacement desktop – free to private users, according to the documentation, though not to businesses – and a very interesting one it is too.

The icons and dialogues are very attractive and the program uses GDOS for the display, if they're installed, or the system font otherwise. If you do use GDOS, an attractive monospaced font is provided.

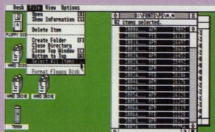
Gemini's strong points are its ease of use and the neat interface – icons are provided for a clipboard (an area set aside on the hard disk) and there are two dustbins – one permanent and one recoverable.

It is also unique in having a small icon mode which means you can use icons and still see a large number of files in each window on a normal screen.

Gemini has its own command line



Teradesk is free and not as memory hungry as the others



Selecting all 82 items would take a lot longer without that menu entry...

File search

This is really only of use to hard drive users – if you can't remember where you stored a particular file, you can use the search facility, with wild cards if necessary, to search through every drive or folder.

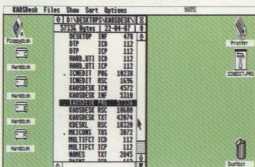
Run from desktop

Have you noticed that the programs you want to use often seem to be the little utilities that are tucked away in folders in folders in folders? All the replacement desktops and later versions of TOS let you drag the program icon onto the desktop where it will remain even when its folder and drive window are closed.

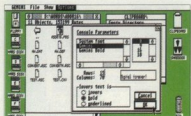
It will even be there next time you boot up, as long as you save the desktop first. Once on the desktop, your favourite utilities are just a click away.



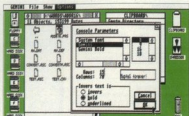
The Settings dialogue adds a few more features to the GEM environment



KAOSdesk – a fast, attractive shareware replacement



Gemini can use GDOS fonts instead of the system font



Gemini has its own CLI too

interface too, which pops up in a window in the centre of the screen. It can be repositioned and resized using the dedicated dialogue box.

There are over 50 different commands that can be entered, including those for operations like create and remove folders and list and rename files. This "console" window is also used to display text files.

Sadly, it has its weaknesses too, particularly in the amount of memory it takes up. It can't be used on 520s as it takes up a whopping great 338k of RAM, none of which is unloaded when another program is run. Even a 1Mb machine behaves like a 520 when Gemini is installed.

Other negatives include the lack of certain features like file masking and searching and menu delete.

NeoDesk

NeoDesk is still the standard against which all the other replacement ST desktops have to be judged. As its fast

been upgraded to v3, with plenty of extra features, its continuing popularity seems assured.

It is far more comprehensive than any of the others with features such as a recoverable dustbin or trashcan, custom control panel and printer buffer.

It supports full colour icons in any resolution and works on both the TT and



NeoDesk has the most flexible display options - each window can be different



There's a choice of six different desktop icons - all of which can be edited

Falcon in virtually any screen resolution. It's the only commercial desktop replacement and it comes with support from GST and an informative, printed manual in contrast to the text files usually provided with the shareware or PD types.

The main features of the desktop include up to seven windows open at once, each of which can be displaying files in either text or icon view, plus command icons in the windows themselves. There's also a clipboard and while it's basically an area of hard disk, it makes copying and moving files that little bit easier.

Other features of note include options like screensaver, corner clock, status displays while copying or moving, desktop macros and the ability to print a directory straight to disk.

Another excellent feature is the ability to display Degas files of any resolution virtually instantaneously by double clicking on the file itself.

Just about everything can be configured as you want it, from the desktop background (it can be a Degas pic if you like) to the colour of the icons themselves, using a series of configuration screens. Put simply, NeoDesk is still the best replacement desktop by a long way.

TOS 2.06

The other choice, if a replacement desktop isn't for you, is to upgrade to TOS 2.06, the newest ST/STE TOS. Loading in a replacement desktop takes time and memory and floppy drive users, especially, will find themselves waiting some time for the desktop to appear.

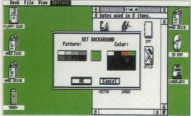
With TOS 2.06 in ROM, you have a super new desktop as soon as you switch on; rather than waiting for it to load and unload all the time.

The main features are the ability to display up to seven open windows at once and place program and file icons on the desktop.

Most functions can now be accessed by simple keyboard short-cuts - S for Show Information and F for Create Folder, for example. All items in an open directory are selected from a menu command (there's no keyboard short-cut unfortunately) and there's a Size To Fit entry that enables icons to be displayed more efficiently in windows.

Other features include a user definable file search facility, including a mask, and a wider range of better icons, including the option of having a printer icon to replace the Show/Print facility, although there's no support for coloured icons.

High density disk support is also built-in. You can have different colours for the window and desktop backgrounds, too.



TOS 2.06 - it took its time getting to the user but it's well worth the effort

Replacement desktops

| Name | KAOSdesk | NeoDesk | Teradesk | Gemini | TOS 2.06 |
|-----------------------|-----------|-----------|------------|--------|----------|
| Price | shareware | £40 | PD | PD | £70 |
| Min RAM (Mb) | 0.5 | 0.5 | 0.5 | 1 | 0.5 |
| Basic RAM used | 130 | 212 | 97 | 338 | none |
| Background RAM | 10 | 46 | 97 | 338 | none |
| Resolutions | all | all | not ST low | all | all |
| Icon colours | no | yes | yes | yes | no |
| Desktop icons | 5 | 6 | 35 | 12 | 20 |
| Window icons | Unlimited | Unlimited | 35 | 40 | 20 |
| Close window | yes | yes | yes | yes | yes |
| Small text | yes | yes | no | yes | no |
| Recoverable trashcan | no | yes | no | yes | no |
| Clipboard | no | yes | yes | yes | yes |
| Keyboard short-cuts | yes | yes | yes | yes | yes |
| Macros | no | yes | no | no | no |
| Icon editor | yes | yes | no | no | no |
| Extended disk formats | yes | yes | no | yes | no |
| Select all | yes | yes | yes | no | yes |
| Multiple windows | 4 | 7 | 7 | 7 | 7 |
| File masking | yes | yes | yes | no | yes |
| Search for file | no | yes | no | no | yes |
| Menu delete | yes | yes | no | no | yes |
| Run from desktop | yes | yes | yes | yes | yes |

Notes: Basic RAM is the total RAM used when the desktop is running while background RAM is the amount of memory reserved when another program is running (see other box for a more detailed explanation). Number of icons down refers to the number of icons that can be placed along one side of the screen.

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The shop front of a typical high street stationery and photocopying business, with no outward signs of an Atari presence

Who says the ST is only for games and music? Günter Minnerup visited two companies in the printing and publishing trade who could not survive without their Atari computers

Doing the

Express (now sadly out of business).

This was not only a lot cheaper than the Mac, but also ran a program called Fleet Street Publisher which appealed to Mike's partner John Dukes, a printer of the old school, through its close adherence to the standards of accuracy and the work metaphors – text to galley, galley to page – of the traditional compositor's craft.

The firm has upgraded its hardware to a Mega ST4, located at the print shop in Birmingham, and a TT030 at the Henley premises. Fleet Street Publisher however, now in v3, is still the favoured software for most jobs, even though it is now unsupported following the demise of Mirrorsoft.

The famed solidity of FSP makes the lack of support less of a problem than one would assume – but how do they overcome the shortage of commercially available fonts in the program's UltraScript format?

The answer is sitting right next to the TT in the shape of a QMS-PS-810 PostScript laser. Since downloaded PostScript fonts are used for output, the nearest available approximation in screen appearance will do as far as Fleet Street Publisher is concerned – especially given the fairly undemanding nature of the vast bulk of their day-to-day work.

The business stationery that makes up the bulk of the company's business does not require any complex graphics, either. A large collection of clip art covers most requirements, and existing logos are scanned in with a cheap

To the casual visitor, Henley-in-Arden and New Basford appear to have little in common. One is a picturesque market town in green and pleasant Warwickshire – "Shakespeare's County", with Stratford only a few miles down the A34 – and the other a slightly seedy quarter in industrial Nottingham, just outside the city centre along the Mansfield Road.

In Henley, strict planning controls have made the well-stocked shops almost invisible among the well-preserved 17th and 18th century facades, while in New Basford they tend to be more garish but empty as monuments to the recession.

Yet both these very different Midlands locations harbour examples of Atari ST/TT computers doing the business in the demanding environment of the publishing and printing trade.

Henley may be a small town but it is very obviously a prosperous, middle-class one. The ideal environment for the small jobbing printer, ready to do menus for the many restaurants, pubs and cafes, letterheads and invoices for the small businesses, posters and invitations for social events.

Nothing in the big publishing league, but a central cog in the well-oiled wheels of local society. The outward appearance of John Dukes Printing and Stationery in the High Street, right opposite Barclays Bank, is in keeping with this role; respectable but unassuming, well-maintained but

hardly flashy.

As you enter the shop, the black beams and low ceilings of this remnant of the 17th century make a strange contrast to the metal, cardboard and plastic wares that are sold here.

Until fairly recently, the technology employed by the jobbing printer had remained as essentially unchanged as this building in Henley High Street. The letterpress, as its name suggests, requires the manual assembly of metal letters on the printer's plate, which is inked and mechanically pressed against the sheets of paper.

EASY EDITING

It's a simple but labour-intensive method of producing printed output – high-quality but rather inflexible. Modern typesetting technology as developed for the high-volume rotation presses passed this trade by as the short print-runs never justified the investment in new machinery.

Then along came desktop publishing and the ability to preview and edit the final output simply and conveniently on a computer screen.

Like everybody else, Mark Ormiston was drawn towards the Apple Macintosh, then heavily promoted on the strength of its PageMaker software as the only small computer capable of on-screen page layout.

The Apple deal was nearly signed when Mike was introduced to the Atari ST by Birmingham dealers Software

Mark Ormiston,
a former
Shakespeare scholar and schoolteacher, working on the company TT





David Hayes in front of the Eizo true-colour A3 monitor used for the more demanding illustration and page make-up work

A modest sign is the only indication of the high-tech world behind the redbrick exterior



business

Golden Image 400 dots per inch hand scanner. Reliable backups, however, are as crucial to a small business as they are to a large one, especially as the Atari machines also serve as general workhorses on the administrative and accountancy side of the business, using K-Spread 4 and Superbase Professional. Hence the need for the 155Mb ICD tape streamer alongside the two large hard disks.

Since John Dukas is such a small business and the investment in computers so small, Mark can afford to be philosophical about the future of their commitment to Atari.

He made no secret of his disillusionment with the generally ramshackle nature of the Atari scene, with its poor support for commercial and professional users. Sooner or later, Mike reckons, they will have to fall in with the general trend towards PC platforms, if only because their customers expect them to be able to "do something" with their PC-generated disks.

However, even the acquisition of a Windows clone would not mean the abandonment of Atari for quite a while as they have simply put too much into their ST and TT, and, most importantly, "it works". So perhaps a small local

network will link TT and PC, enabling both to share common access to hard disks and printer. CY Services in Nottingham are in a different league altogether. The door is opened by a receptionist who makes a quick call on the internal phone system to establish that David Hayes is indeed expecting me: "Would you like to take a seat, he'll be downstairs in a minute."

I sit down opposite a Mega 4, the first of many items of Atari hardware I am going to see on this visit. Having expected a small back room operation of an imagesetter bureau, I found much more - a book shop, offices, a fully-equipped print shop, meeting rooms and, in an outbuilding across the back-yard, a roomy typesetting and design centre.

PUBLISHING ARM

It soon becomes clear to me that this is not just a service operation for Atari desktop publishers, or indeed a purely commercial operation at all. CY Services are the publishing arm of a small religious community that calls itself The Congregation of Yahweh.

If you have never heard of the Congregation of Yahweh, nor had I. Judging from the issue of their magazine which I was given, its beliefs appear to be some sort of synthesis of Christian and Jewish teachings, with an emphasis on the Old Testament.

Nobody attempted to ram these beliefs down my throat, though, while I was there, and the conversation with David Hayes, who is in charge of the computer and typesetting side of the business while also an ex-teacher of chemistry and part-time preacher, centred around computers and the Atari scene in general.

This is one of the rare imagesetter bureaux and DTP operations where the word PostScript is never mentioned. CY Services' Linotronic 300 imagesetter does not even have a PostScript RIP (raster image processor), and their favoured software packages are Didot Professional, Calamus and Retouch

Professional. The heavyweights of the Atari DTP market, these programs eschew the industry-standard page description language for their own technique of what is known as softRIPping - translating the vector files created by the software into bit-image output at the printer's resolution inside the computer itself.

Didot Professional appears to have taken over from Calamus as the company's main workhorse for their own publications, although Calamus files are, of course, still the mainstay of the imagesetter bureau business.

I was struck by David's refusal to join in the Atari bashing so prevalent these days among the followers of the sign of the Fuji. He has never had reason to deal with Atari directly, and is full of praise for the general reliability and efficiency of the hardware.

This does not mean that he is uncritical of some aspects of the scene, though, such as the poor support offered by many British software houses for their customers.

Running an imagesetter bureau can be a real headache. The naive assumption that it is just a question of handing the files over to the hardware and watch it spit out beautiful bromides or films couldn't be further off the mark.

For a start, this "spitting out" can be a rather lengthy process when graphics or rotated pages are involved. Compared to the practice of other bureaux, CY Services are being quite generous at not charging extra for graphics-intensive files, but rotated pages attract a flat rate surcharge of £3.

Another headache is fonts: "Quite often, customers forget to include the odd font used in their files," David sighs. There is, after all, something to be said for everybody using Times and Helvetica!

The power which software like Didot and Calamus puts into user's hands can often exceed their understanding of the skills and techniques involved.

This is true of typography, a much underrated craft, but even more so of the reproduction of photographic material. Scanners are a doddle to use in terms of their mechanics, but raster screens remain a mystery to many of



Making plates: a Mitsubishi CP-404

their casual users. David tells of complaints from customers who do not realise that the coarse dot patterns disfiguring their photographs are the result of ill-chosen scanner resolutions and raster screens rather than the fault of the output bureau.

CY Services have their own Epson GT-6000 colour scanner and will happily deal with any photographic illustrations in an expert manner, but obviously at



David Hayes in front of an array of Atari hardware

an extra charge for the scanning service itself and for the editing of the DTP files.

The big advantage of dealing with someone like CY Services is that you can always count on their knowledge of the software used, and ask them – even if it costs you extra – to check for any obvious faults in the output and correct them.

Sending a PostScript disk to a Mac or PC-based bureau doesn't offer this option, as you'll always get back whatever you sent them – garbage in, garbage out.

The range of jobs which CY Services can handle is almost unlimited, due to the impressive range of hardware on their premises.

I counted nine Atari computers, from a 520STFM connected to a modem to receive files through the telephone network to a couple of high-speed TT030s with large-screen colour and mono monitors.

A Mega STE is plugged into the DMC interface connecting it to the Linotronic 300 imagesetter. Downstairs, in the print shop, there is an impressive-looking Mitsubishi SilverMaster for making the plates and two printing machines, an A2 Solna 125 and an A3 Ryobi 3302. Needless to say, all trimming and binding is also done in-house.

The association with Atari goes back many years to when David first bought an 8-bit Atari XL for video tiling. Video tiling? This is part of the Congregation's educational activities, sending out videos as part of their theological correspondence courses. Since then, STs were bought for almost everything: word processing, stock control (one of the Mega 4's has a bar code reader attached to it) and accounts

(using VIP Professional). I asked if there were any plans to follow the general trend towards IBM clones and Windows, but I should have known what the answer would be: there is only one PC in the house, and switching everything to another platform would just be too expensive not only in terms of the new investment in hardware and software required, but also in terms of skills and training.

"Everybody here finds the STs easy to use and knows how to get the best out of the software," David replied, "so why change?" If it ain't broke, don't fix it...

Back on the Motorway from my day in Henley and Nottingham, I reflected on what I had seen. Two very different companies in the printing and publishing trade, with Atari computers at the heart of their daily activities.

From neither of them had I heard one single adverse comment on the reliability and efficiency of the hardware: the TT030, in particular, was highly regarded for its speed and power.

The range of add-ons and peripherals used at both premises – scanners, hard disks, removable cartridge drives, tape streamers, high-resolution colour monitors, modems, bar code readers, laser printers and imagesetters – proved that there are no compatibility and connectivity problems in equipping an Atari-based business to high professional standards.

The problems, as related to me by



David Hayes in his well-appointed print shop

Mark Ormiston and David Hayes, of putting a system better known for its hobby and games uses at the centre of your livelihood tend to be found on the software side.

To maintain compatibility with the dominant world of PostScript, Mark soldiers on Fleet Street Publisher, a program no longer sold and supported, while David has encountered difficulties with inadequate documentation and support for the imported software packages used.

Indeed, if both decided to collaborate on some project and exchange files, they would be unable to do so easily because of the entirely different font formats and output systems used.

Such difficulties, of course, are the result of the small size of the professional Atari market. Software houses will only put more resources into support and development if more companies follow the example of John Dukes and CY Services and discover that there is an alternative to Apple and IBM.

DTP, imagesetters and printers

There is a widespread misconception that desktop publishing is the ruin of small commercial printers. Nothing could be further from the truth: if many small printing businesses have gone to the wall in recent years, it is the recession rather than DTP that causes these bankruptcies.

Many small printers have, in fact, benefited from the DTP revolution because it has introduced a whole new group of clients to them.

This is because DTP is desktop publishing, not desktop printing. It enables you to design professionally-looking page layouts but not to produce printed copies in any real quantities.

For anything more than the very smallest print runs – which can be handled on a laser printer or photocopier – you still have to go to a printer. He takes your computer-generated artwork and turns it into plates for his printing machine through a photographic process, which is why you are often asked for "camera-ready copy".

For low-cost jobs, laser-printed artwork can be quite acceptable, but for the true profes-

sional look the much higher resolution of the imagesetter makes all the difference. Imagesetters, which generate artwork at up to 2500dpi (compared to a laser's 300dpi) on photographic paper (bromides) or film, are absolutely essential where photographs or quality colour images are involved.

But what do you do if, like most of us, you don't have even a laser printer, let alone an imagesetter? This is where the typesetting bureau comes in.

You save your work to disk and send the disk to a company which, for a small fee, will put your work through their laser or imagesetter. Most bureaux are Mac or PC-based and will never have heard of ST desktop publishing software, so you need to be able to generate files in the industry-standard PostScript page description language, or find one of the very few Atari-oriented companies that can print Calamus or Didot Professional output. There are, to the best of my knowledge, only four Atari imagesetting bureaux in the UK:

John Dukes Stationery and Print, 110 High Street, Henley-in-Arden Tel 0564 792398, fax 0564 794980

CY Services, 52 Beech Avenue, New Basford, Nottingham NG7 7LQ Tel 0602 605377, fax 0602 623715

Sumner Type, Unit 19, 80 Sumner Road, London SE15 6LA Tel 071-703 4189, fax 071-708 5754

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Developers have been beta testing MultiTOS for well over a year now – Don Maple took a long hard look at a beta test version as far back as last year's October issue.

There were a lot of ifs and buts floating around back then and the ball was fairly and squarely in Atari's court, but most of the wrinkles seem to have gone and we're finally looking at the brand new, shrink-wrapped product – the first official multitasking operating system for Atari computers.

MultiTOS was originally destined to be shipped with the Falcon but despite the fact that those who bought one were treated to five tantalisingly vague pages in the manual, the MultiTOS disk was conspicuous by its absence.

The release version of MultiTOS is v1.01 and is being distributed in the UK by HiSoft. It has evolved a long way from its ancestral code, Eric Smith's oddly named MINT, which was originally short for MINT is Not TOS. The MINT that is now TOS comes in attractive HiSoft packaging and the program is provided on one double sided disk with a rather brief 16-page manual.

DISK BASED

MultiTOS is loaded from disk – no ROM-based version is likely – and it replaces some parts of the Atari's operating system such as the AES and GEM. Installation is via an effective little utility that takes over the task of copying the MiNT kernel into your AUTO folder (it's still called MiNT, despite having become part of MultiTOS) and placing various other utilities and system files into a dedicated folder on the boot drive.

The new flagship operating system needs a minimum of 2Mb of RAM to run (it won't run at all on a 1Mb machine as it takes up around 600k of RAM). Even with 2Mb, you're unlikely to be able to run more than one or two smallish programs. In fact, it is only really practical on systems with 4Mb or more, the minimum memory configuration I'd recommend.

One thing has to be made even clearer – MultiTOS is slow, particularly on 8MHz machines like the ST. The reason for the drop in speed is understandable – MultiTOS uses a process called pre-emptive multitasking where the CPU allocates a millisecond there and a millisecond there to any program that's up and running.

If three programs are running at once,

Andrew Wright delivers his verdict on the release version of Atari's new multitasking operating system, MultiTOS

Taken

each gets a third of the CPU's overall time. It's a case of doing three different things quickly in succession rather than actually doing three things at once.

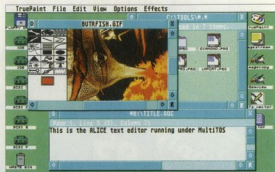
MultiTOS is a far better multitasking environment than many others like Microsoft Windows as it has the ability to dynamically prioritise system resources. This means it can allocate more resources like CPU time to programs that are actually being used.

The easiest way to see this pre-emptive multitasking in action is to set up an archiving program such as STZIP to archive a few megabytes of files and then run a wordprocessor.

Although the keyboard and screen scrolling is slightly slower, whenever you type a word, scroll through the document or access a menu, the background process stops and control is handed over to the wordprocessor. Whenever you do nothing, the background process starts up again at more or less full speed.

With MultiTOS up and running, there's very little difference to the normal Desktop (though ST users will notice new TOS 4.0x-style icons) until you look under the Desk menu.

There's an extra group of menu options under the desk accessories that relate to the programs currently running. On loading you will see just DESKTOP with a tick mark next to it. However if



MultiTOS running in full colour. TruePaint is the "topped" application with a text editor in the background. Note the GEM desktop is accessible too

you load another program, its name will appear underneath.

MultiTOS can run as many different programs as can fit into memory, including GEM programs, TOS/TPP programs in windows and, of course, desk accessories too.

You can move between them easily enough, using either the Desk menu list or by "topping" its window. Topping means making a window current by clicking inside the window itself. When you do this the program's own menu bar appears along the top.

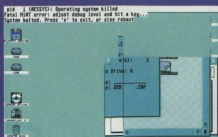
In MultiTOS you can actually resize or close windows without topping them, simply by using the corner gadgets, something you can't do in ordinary versions of TOS.

Only one application can be topped at any time (it's known as the foreground program) but as many as you like can be untopped or running in the background.

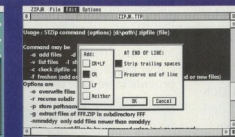
In theory there's no limit on the number of accessories you can install either but it will depend on the amount of memory available. I managed ten but I dare say I could have squeezed a few more in.

ADVANTAGES

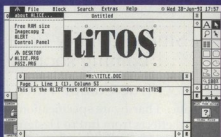
Whether you can make use of MultiTOS will depend on your setup and



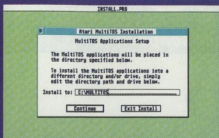
Crrrash! I was only deleting a file, honest! And incompatibility is a big problem as only "correctly written" programs will run



With TOS programs running in windows you can actually cut and paste using the Atari clipboard (if your target application supports it)



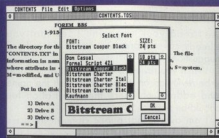
PageStream works well with MultiTOS (though printing is very slow) – the extra menu option under the Fujii symbol shows that a text editor is in use, with PageStream in the background



Installing MultiTOS



A TOS program called Contents is running in a background GEM window along with some other GEM programs



SpeedoGDOS and MultiTOS go well together – here we can use Speedo fonts to display output from TOS programs

to task

the way you work. There are two main advantages in having a multitasking operating system. The first is that you can relegate time-consuming processes to the background, to be carried out at your leisure while you do something else.

Just how many time-consuming processes you carry out only you can tell, but examples include recalculating spreadsheets, processing images, archiving files, converting fonts and even downloading information via modem. The second advantage is that you can swap between tasks much more conveniently.

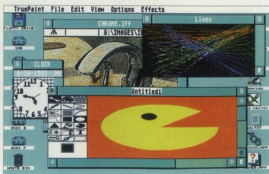
PROBLEMS

Incompatibility is a big problem as only "correctly written" programs will run. Programs misbehave with MultiTOS for several reasons, not least the fact that some, like First Word Plus, grab all the free RAM they can find, leaving perhaps 30k or so for the rest of the system to use.

Others, particularly TOS programs, don't understand that they haven't got the whole screen to themselves so they have to be displayed in a special window. Other programs crash or hang for unknown reasons – usually they have used "illegal" programming techniques and haven't followed the GEM programming guidelines.

Some programs crash due to memory protection conflicts and this facility can be switched off by renaming MINT.PRG to MINTNP.PRG or disabling it via the CPX. This certainly improved compatibility in general on my Falcon but some

TruePaint with a few more also-rans – GEMVIEW, the MultiTOS clock and the demo program LINES. The clock's second hand moves continuously as do the coloured "psychedelic" lines



programs were then much more liable to crash during operation.

Another way of improving compatibility is to use the CHPROT program supplied on the disk to alter certain programs, especially ones that use interrupts. It isn't ideal but it can bring some rogue programs to heel.

The list of programs that run without any problems at all is fairly short. TruePoint, Calamus SL and PageStream work perfectly as do many of the development versions of programs that are due to be launched soon, reinforcing HiSoft's view that most new software will be MultiTOS-compatible.

Almost every older GEM program I tried had problems of one sort or another even if they were perfectly usable. The problems were particularly acute on my Falcon, which also crashed occasionally when deleting and copying files despite having the latest Atari hard drive software.

Whether this was due to the bug-ridden TOS 4.01 or MultiTOS I couldn't say but it didn't happen when I switched to an ST.

The interface can be awkward. Programs that take up the whole screen like Silhouette prevent access to the desktop behind it – let's face it, you need to be able to resize windows in order to get at the icons and drive windows.

Task switching is a pain too – either you resize a window to get at another

one or navigate through the Desk menu. A simple key combination to cycle through already running programs would have been a much better idea.

At the end of the day, it's hard to recommend MultiTOS on 8MHz machine like the ST as it is just too slow, even if you're only task switching and not actually multitasking. You'll certainly need to install NVDI as it improves the slow screen redraws considerably.

MultiTOS is equally pointless on machines with only 2Mb of RAM as there's only room for one decent sized program and an utility or two.

On bigger, more powerful machines like accelerated STs, TTs and Falcons, MultiTOS's prioritised multitasking works very well indeed although it's overhead does slow the system down a little and it takes away a fair amount of memory into the bargain.

Unfortunately the most obvious things can't be done in the background, such as formatting or copying a disk, for example. Even background file copying has had to be disabled in this version of MultiTOS as it caused too many problems.

MultiTOS isn't an essential upgrade by any means, and there is still plenty of room for improvement in speed and stability. Atari are still working on it and HiSoft are confident there will be many more upgrades in future. The Atari market has taken its first big step along the multitasking road – let's hope it's the right one.

BOTTOM LINE

FEATURES

An innovative and well-designed but rather slow operating system.

Excellent
Good
Average
Bad
Appalling

EASE OF USE

Very simple to install but that's only the start of it!

Excellent
Good
Average
Bad
Appalling

VALUE FOR MONEY

Good value but only if you need it.

Excellent
Good
Average
Bad
Appalling

Product: MultiTOS 1.01
Price: £49.95
Supplier: HiSoft, The Old School, Greenfield, Bedford MK45 5DE
Telephone: 0525 718181
Configuration: All Ataris with 2Mb or more RAM

Shareware suggestion

As I read your magazine I see that you already cover shareware, but can I make a suggestion?

When you review a piece of software could it be reviewed on its own, and with the name and address of where the registration fee should be sent?

I am aware that public domain libraries already distribute these on their disks but if a reader likes the sound of a program they would be better to register with the author straight away.

When I want to register for shareware I first have to buy a disk from a PD library in order to obtain the registration details. The method I suggest would cut a lot of waiting time.

A Hamer, Wirral

Shareware has traditionally been distributed by public domain libraries, with users then sending money to the program's author if they intend to use the software.

The idea is that you can try before you buy, and the minor wait between getting a PD version and the full copy is a small price to pay for this privilege.

But I can see the advantage of your suggestion and will consider publishing author's details next to reviews of shareware programs.

Piracy closer to home

Your article in the May issue of *Atari ST User* is yet another of similar articles appearing at regular intervals in the computer media generally.

While I certainly do not agree with, nor condone, such theft I feel strongly that a few software houses need to get their own house in order before condemning others.

After all, as the saying goes, people who live in glass houses should not throw stones.

Over the last four to five years I have encountered a number of software houses during the course of my work.

We bought software from, or had programs developed by, relatively small software houses.

On one occasion, the supplier – not longer trading – included with their own programs illegal copies of WordStar, MS-DOS and

**Got anything to say to the ST community?
Then this is your soapbox**

Write Now

others. Our company had to pay again for products we thought we had already obtained quite legitimately.

Employees from at least three different software houses offered to provide some games. These were certainly not legitimate copies, but pirated.

One particular game, *Prince of Persia* I think, even had a proud boast from the perpetrator congratulating himself for having broken into the code.

So come on, as soon as software houses get their own houses in order and start practising what they preach, perhaps then they can more justifiably condemn those other practitioners of crime.

D A Green, Hampshire

Nobody at Atari ST User can recall hearing of a situation like this ever happening within the ST market, and I presume it is not commonplace among PC developers.

The vast majority of companies who continue to trade within the Atari market have a very good reputation, which is why they are still around in today's difficult conditions.

But, of course, there will always be cowboys who come in and out of the market trying any devious way of earning a quick buck.

If you're given illegal software telephone the Federation Against Software Theft (FAST) on 0628 660377.

Falcon flies low

After recently receiving a reply to a letter I sent to the author of an excellent ST utility called *Mega Depacker*, I decided to buy a Falcon.

I rang a number of firms but none were able to meet the criteria that I laid down – they must have Falcons plus SCSI to SCSI II leads so that I could connect my existing hard drive.

All of them told me the same thing. They had no Falcons at the moment but were expecting to take delivery in a matter of days.

As far as the lead was concerned, I could not even get a quote for a price.

Coincidentally, I was also in the market for a new printer. I telephoned a local dealer to place an order and asked if he knew what was going on with the Falcon.

He made a few calls and rang back to say that he had been given the same information as I had, but he had found someone who was willing to make up a lead.

I told him to order all the items and that I would collect them at the same time.

He rang the next day to tell me that my printer had arrived but that there was a problem with the Falcon. His information was that Atari had put back the delivery to the main distributors.

And, after two weeks, there is still no word on when delivery will be.

Believing that I would soon be the owner of a Falcon, I rang Floppyshop to order some

Too much power in the latest computers

Congratulations on an excellent magazine, well laid out and covering a very large variety of subjects. I am especially impressed by your business section. I find it full of helpful hints and the spreadsheet layout in your June issue was very handy.

I have now had my STFM for four years. It has never been serviced and the only upgrade it has had is a memory board with an extra half meg fitted to this.

I initially used it for games playing but now completely run my small business from it. If I had any advice for anyone looking for a computer I would say forget the STEs, the Megs and the Falcon, you would be in a very high percentage of cases be overbuying.

My wholehearted vote would be for the STFM, especially at the prices they are now being sold at. Both new and second-hand these computers are a bargain and are great little workhorses.

At the risk of rambling on I have a favour to ask yourselves and your readers.

I am an adventure buff – any type from pure text through to all-singing, all-dancing graphic/role-playing types. The problem I have is that I cannot find any kind of adventure helpline anywhere. I have

decided to begin one of my own, and I am looking for any help, cheats and full or partial solutions I can lay my hands on.

The games I am particularly interested in are *Beyond Zark* from Infocom, *Sierra's Leisure Suit Larry* and *Gold Rush* plus Corporation.

I Lindsay, 6 Almond Road,
Blackburn, West Lothian EH47 7HE

Quite a few people buy the latest computers with high operating speeds and superb graphics and use the machine for little more than wordprocessing.

What you say about the STFM is quite right, if indeed the buyer is unlikely to ever want to use the latest computer technology to the full.

Good luck with the helpline. I know many of our readers love adventure games so you should get a reasonable level of support.

**£25
Prize
Letter**

public domain software. They were very helpful and informative but completely taken aback when I mentioned my problems in actually getting hold of a machine.

The disks I ordered arrived the next day. Unfortunately, I am still unable to try them out. But there is even more.

My wife has just returned from a long weekend in Holland. She made enquiries about buying a Falcon there, only to be told that none of the shops she visited had any.

They would order one but could not say how long it would take to get it.

She brought back the latest copy of Atari ST Nieuws, in which one of the adverts had a headline "Atari Falcon030 at long last! Available from 15 May 1993".

My wife range the firm at the end of June and was told that they actually have three machines in stock. They had heard of the problems in the UK but were unable to understand why.

I have been an Atari user for many years. I would like to have a Falcon. How about it Atari?

J Smith, Durham

At the time of writing we are still awaiting full Falcon availability, but there are several places where you can get hold of a machine.

I think your difficulties arise from the SCSI to SCSI II lead. Obviously buying it from the same place as the computer is convenient but under the circumstances can you be choosy?

Among the companies known to be stocking machines are Compo Software, HiSoft and Silica Systems. In fact, I am told, there are almost 100 British suppliers.

Astounding capabilities

Further to Simon Townsend's letter, I would concur with some of what he says.

Having bought an STE last March I have been astounded at the machine's capabilities and the sheer diversification that can be enjoyed for £300.

All right, the Family Curriculum pack is a bit naff, and a lot of what was in the bundle gathers dust as we speak, but I had no idea I could pursue so many activities so quickly.

The point is that maybe Atari have it wrong. The relaunch of the 520STFM was close, but no cigar. Say goodbye to half-meg, even if we are talking an intro into the world of ST.

It must be pretty frustrating to buy your first computer to find you cannot use some of the games and applications - particularly if they are thrown on to an ST magazine's cover disk.

Pitch in at the one meg level, it saves disappointment later. Gather together an attractive bundle and throw in a manual that enhances rather than detracts the user's initial enthusiasm.

Also chop £50 off the present bundle cost and - this is the fantasy bit - market the product at the people who are going to consider

buying a computer either for themselves or their kids.

Have you ever seen an ST in an Argos catalogue? Does your local electrical store push the product? No.

If you are blissfully unaware of STs, as I was, you are hardly likely to pick up a copy of Atari ST User from your newsgagent and order a 1040STE from Silica.

The only place I have seen an ST actively being sold is in my wife's clothes catalogue and that was at £30 over the odds.

Stuart Mills, Isle of Man

It would appear that the days of ST advertising have long gone, although the price cut to which you refer is a real possibility - I wouldn't be surprised to see cheaper STEs before Christmas.

Atari have already started spending money to promote the Falcon and we are told Nyn will also be given a push before this year end.

On the other side of the Pond, New York is targeted for a huge Jaguar promotion in autumn and this can be expected in Britain towards the end of next year.

Pricey power

I read with great interest the article Packing in the Power in your May issue. I am sure that the performance of an ST with Turbo 30 and NVDI is quite phenomenal.

You would probably have to strap the thing down to your desk to keep it steady. But what is the use of teasing the average ST user with such goodies if he/she cannot afford them?

If I had £1,000+ to spend, I would certainly not buy a Turbo 30. I am sure I can find a decent 80486-based PC for that money.

Now, if the price came down a bit, say in the region of £200 or less that would be a little more enticing and more affordable to the average user. I think that would help sales quite a bit too.

I guess that my dream will never materialise and that I will have to make do with my ancient ST chugging along at 8MHz.

On a lighter note, may I suggest an easier way of decompressing self-extracting files without copying the packed file?

I use a RAM disk, but you can also use a second disk drive or perhaps even a hard disk. Proceed as follows:

1. Open a window containing the compressed file.
2. Open another window for the RAM disk
3. Make sure this last window is the top window and that the first window remains visible.
4. While pressing the right mouse button, double-click on the self-extracting file.

P Scerri, Malta

Although not many owners can afford to spend more than £1,000 on increasing the speed of their ST, we think most readers are interested in the capabilities of their computer.

The ST is all too often considered an underpowered games machine but accelerator boards such as Turbo 30 show the computer can be built into something much more powerful.

Those people using their ST for professional desktop publishing - and there are quite a few - are targeted for the expensive accelerators.

ATARI ST USER

It's not what you know - it's who you know!

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We are happy to answer your technical problems in our Advice Service section. Send your letters to **Advice Service** at the address below.

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If you have a news story, send it to **John Butters** at the address below. If your story is URGENT call him on **0625 878888** during office hours.

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We are always on the look-out for good ST art. Send your work to **ST Gallery** at the address below.

WRITE NOW!

Got something to tell other ST User readers? Send your general letters to **Write Now!** at the address below.

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Enter competitions using the details on the form. If you have any enquiries connected with our competitions, contact **Lucy Oliver** on **0625 878888**.

PUBLIC DOMAIN SUBMISSIONS

PD libraries are welcome to submit their latest releases. Submissions should include a detailed list of what each disk contains. Jiffy bags to **Jonathan Maddock**.

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Our Aspects authors can be contacted via Atari ST User. Please mark any correspondence clearly and send it to the address below.

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TELEPHONE CALLS

Except in the situations listed above we **cannot accept telephone enquiries**. Please write in to one of the departments listed in this panel.

SAVE THOSE SAES!

Please don't send us SAES, we can't promise to reply to every letter so it really is a waste of your stamp. Sorry!

ATARI ST USER
EUROPA HOUSE
ADLINGTON PARK
MACCLESFIELD
SK10 4NP

Waiting to hear from you...

To join the ST chat show drop a line to The Editor, Write Now, Atari ST User, Europa House, Adlington Park, Macclesfield, SK10 4NP

The sequential vector graphic PAD program by Heiko Gemmel has grown in facilities and ease of handling since it was first introduced to the PD world in 1989.

Updates have appeared regularly and the current 1993 version is truly a model of power and precision with many extra features. The product is shareware, at £16 for the full manual.

When one considers the extent of documentation on disk, plus all the help features available within a program which is not restricted in any way, then the user must surely appreciate the true virtues of shareware – particularly in a program which is highly professional and easy to handle.

All documentation has been translated to English, including the main screen. Bearing in mind the purpose of shareware, the author Herr Gemmel is most certainly due the small sum requested. Moreover the next update (Pad III) will be commercial and registered users will benefit therefrom.

ANIMATION

Pad v2.4 works with all TOS versions and is also STE-compatible. The program runs in hi-res (100 per cent compatible with the Modulator) and requires a minimum of 1Mb of memory. With 1Mb, eight pics may be held in RAM, while a 4Mb ST will store 40 pics. Such facilities are important for animation sequences.

On loading, the main screen offers all the options shown. The new additions are listed in full in the documentation from v2.0 onwards.

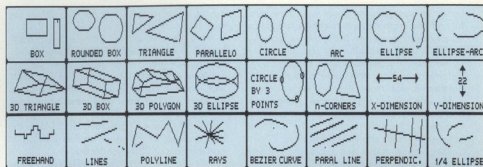
Simply mouse click with the left button on any one option required and a right click will take you to the main work screen – x/y co-ordinates are shown while work is in progress.

With reference to 3D triangles, rectangles, polygons and cylinders, click on the requisite icon, create the planar shape, fix with a left click, then use the right button to activate the rotation and designing of the 3D object.

The Erase icon will clear the working screen completely while Undo clears the last action as is generally the case.

The best way to get around this program is to experiment fully with all the icons on display – the possibility of a crash is remote, having tested all thoroughly. Spline drawing may be taken to as many points as you care!

Try out the circle with three points, Bezier curves and their tangent points, and so on. When you come to the lasso option, you will find yourself in the Block Menu with all its associated functions, which will be discussed later.



Magnified top half of main screen

Pass the drawing

Evelyn Mills looks at a powerful and professional vector graphics program which, incredibly, is also a shareware release

There are some 38 .IMG pictures on this disk which you should load to try out all the effects you can find. There are also six GEM fonts available for text. Having finished your voyage of exploration, it is time now to investigate the more advanced features of Pad.

Before so doing it is essential to investigate the Parameters icon at the bottom right-hand corner of the screen. The individual functions here are translated in the Sub_Menu notes should there be any problems. Left click on the bar of choice and right click to exit when settings have been made.

Here you will find a wealth of adjustments – a screen full of fill patterns, text font (type, size, degrees of rotation, font selection), spray can adjustments, line and brush selections, polygon side selection, drawing colour (black, white) and much more.

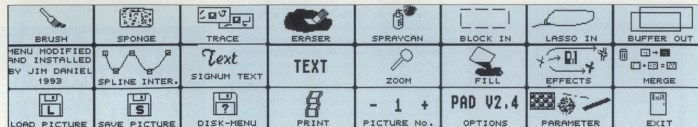
When filling a shape or combination of shapes, clicking with the left button gives a block fill – now click with the right button to change this to a pattern

fill or a shaded fill if required. There appears to be a small error here where, if an attempt is made to pattern fill one block area adjacent to another block area, both are pattern filled.

SUBTLE VARIATIONS

This is the only bug evident in the program. Shadow gradings are obtained from the greyscale mode in the Parameter listings. This is a delight to use so play around with the cursor-controlled settings to obtain subtle variations of graded grey fills inclusive of direction. Editing facilities for fills, and brushes are also available.

Text features are defined here with respect to size, type, mode and degree of rotation. The built-in fonts are four in number (choose "laden" to load). A small screen shows the size and type of text – simply right click to exit and type in text as required, move to requisite location and press Return to fix. A new feature within Pad v2.4 is to load



Magnified bottom half of main screen

| | | | | | | | |
|----------------------------|--------------------------|-----------------------------|---|------------------------------|------------------------------|---------------------------|----------------------------|
| J PAD → INVERT | U PAD → UNFILL | R PAD → OUTLINE | A PAD → SHADOW | - PAD → LIGHTER NE | + PAD → DARKER | M PAD → MASK | T PAD → MERGE |
| N PAD → 90° ROTATE | D PAD → ROTATE | H PAD → MIRROR HOR. | U PAD → MIRROR VER. | Z PAD → DISTORT HOR. | O PAD → DISTORT VER. | B PAD → BEND HOR. | E PAD → BEND VERT. |
| L PAD → BLK LOAD | S PAD → BLK SAVE | G PAD → CHANGE SIZE | MENU MODIFIED AND INSTALLED BY JIM DANIEL 1993 | | K PAD → COPY | P PAD → MOVE | F PAD → BUFFER IN |

The Block Menu

Signum fonts and install for 9 and 24-pin printers.

There are many graphic features available which are listed in the Ascii saga. Again, many of these are available from the Parameters, but the greatest percentage of features is found under Special Effects on the main screen.

Here, again, please refer to the Sub_Menu for translation of these individual features. Let us assume that you have created a simple 3D polygon. The Special Effects total some 16 features for altering the drawing to thin, thick or double outline. Shadowing may be selected here in

(the latter is a close approximation of a circle).

Ellipses and quarter ellipses are most useful as is the Zoom tool. There are ten drawing screens available as well as the facility to merge drawings. Save as you go is recommended. Assuming that sufficient memory is available, animation can be extended to can be extended to 100 screens.

Block functions are a necessary feature of all good art packages. To enter this mode an object is required to manipulate around the screen.

A good entry point is via the lasso on the main screen - this is yet another fine tool and shapes may be cut from any required area in freehand - make it small, make it large...

Once a screen area is captured, the Block menu will appear automatically. Note the number of options available here; skewing, distorting, shadow effects... the accompanying diagram shows them all.

The virtue of the lasso feature is that blocks, when cut, will not be surrounded by the white area generally associated with standard blocks. To lasso, simply do a freehand drawing of the area required after selecting a starting point.

and saving, adjusting fill patterns, brushes, the spray can and so forth.

Before concluding, there are a few generalities which are well worth mentioning. Printing Press, IFF, TIFF, PCX, BMP, MAC, IMG and many more "exotic" graphics can be loaded. Large pictures may be loaded and stored with scrolling for viewing.

SIGNUM FONTS

Linewrap will now cover the complete monitor for Signum text lines. Text framing of Signum fonts is expressed in both height and width. All text may be placed exactly in the middle of the screen.

A Stamp function has been added to give several lines of the same length and width. Loading and saving is standard via the disk icons. Ten STAD screens may be stored at any one time, while graphics may be stored as BITBLK for RSC files.

I am sure some function or other has been missed in this review - the number of options available is incredible for a public domain program. It

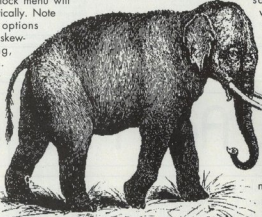
is programmed in a manner which invites the newcomer to vector graphics to get going with confidence, while the expert has more than enough to explore.

PAD!

differing shades of grey, while the outline can be patterned (select from pattern screen). Reverse screen is also located here.

The process of altering any drawing is painless - simply click on the chosen bar, go back to the main drawing screen and the selected option has already completed the command. Pad v2.4 is a pleasure to use - experiment with all features to get the visual effects.

New features from v2.0 include a sponge which can be sized as required - this softens all shades. The parallel function solves the problem of drawing parallel lines, while an angle option allows symmetrical figures to be drawn within the range of three to 13 sides



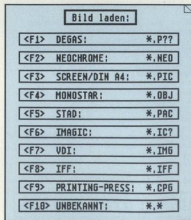
SOPHISTICATED

Pasting is well controlled and a return to the main menu is handled via the mouse. The interchange of facilities is sophisticated and the user can rummage back and forward at will.

Printing is set up from a separate screen where all the usual facilities are available with respect to paging, draft or NI/Q, positioning of the graphic and so forth. If no printer driver is loaded, an error message results.

Panasonic printers are now accepted as well as HP-Deskjet and laser jets. The humble 9-pin is not forgotten nor is hard copy with alternate-help. The standard printer settings are set for EPSON 850 - 24-pin, HP-Laser, NEC-PG 24-pin, Star LC20 9-pin and Star NL 10 9-pin.

All functions are now duplicated from the keyboard - a list of same is given in the documentation where, for example the + and - keys may be used to darken or lighten any picture. Full use is made of the function keys for loading



Picture loader using Function Keys

BOTTOM LINE

| | |
|---|--|
| FEATURES | Excellent Good Average Bad Appalling |
| Everything you could need, and all in a public domain program tool | |
| EASE OF USE | Excellent Good Average Bad Appalling |
| Full keyboard short-cuts and decent on-disk documentation make using it easy. | |
| VALUE FOR MONEY | Excellent Good Average Bad Appalling |
| As a commercial program this would be a good buy - as PD it's a steal. | |

Product: Pad v2.4
 Supplier: Caledonia PD, 250
 Clifton Milton, Inverness
 IV2 4PT
 Telephone: 0463 225736
 Price: £18 for full manual
 Configuration: All STs and TT

Atari ST User's Software Buyers' Guide

compiled by Darren Evans

Sooner or later you will almost certainly find yourself needing a certain software package to meet your needs.

Maybe you will need financial software to help manage your home or business accounts, or a desktop publishing package for creating a magazine for your local club.

The ST is an extremely versatile computer and as such there are many products to choose from. Such a wealth of software poses a problem, especially for the inexperienced, when it

comes to finding the right package.

The following pages contain a comprehensive list of software applications, along with the retail price - correct at the time of writing - supplier's name, address and telephone number.

We have included a brief comment on each program and its features, and given details on minimum memory and monitor requirements.

So, in the words of a certain advert for a sickly yellow and well-known publication, "Let your fingers do the walking"...

Desktop publishing

| product | price | supplier | RAM | mode | comments |
|---------------------------|---------|-----------------|-----|------|--|
| Calamus 1.09N | £99 | JCA Europe Ltd. | 1Mb | m | Attractive buy at its reduced price. This was the first DTP package aimed at the professional. Lots of features and good wysiwyg |
| Calamus 5 | £335 | JCA Europe Ltd. | 1Mb | hc/m | An intermediate DTP option to fill the large gap in price and features between 1.09N and SL. Hard disk strongly recommended |
| Calamus SL | £575 | JCA Europe Ltd. | 2Mb | hc/m | The colour version of the above. Masses of features. Provides colour separation facility. Hard disk is strongly recommended |
| Fleet Street Pub 3 | £79 | Silica Systems | 1Mb | c/m | Powerful typesetting-oriented package and easy to use. Uses Imagen's Ultrascript PostScript emulator routines for print quality |
| Timeworks Pub 2 | £129.25 | Electric Dist. | 1Mb | c/m | Features include text runaround of user-defined outlines. Has relatively fast screen update compared to other packages |

Wordprocessing

| product | price | supplier | RAM | mode | comments |
|------------------------------|--------|-----------------------|------|------|--|
| Protex v5.5 | £80 | Arnor | 1Mb | c/m | Very powerful and fast with many features including mail merge, spell checker, index and contents generator |
| Protex v4.3 | £49.94 | Arnor | 1Mb | c/m | Less sophisticated version of the above |
| Redacteur v3.15 | £99 | ST Club | 1Mb | c/m | A challenger to Protex in terms of speed and power. It is GEM-driven and is able to import pictures in many formats. |
| Redacteur Lite | £69 | ST Club | 1Mb | c/m | A lower priced version with less trimmings for those who don't need them. Upgradeable to full 3.15 version |
| Redacteur Junior | £39 | ST Club | 1Mb | c/m | The bare bones of Redacteur with no dictionary and you are limited to printing out in whatever typeface your printer can manage. |
| That's Write 2 | £129 | Compo | 1Mb | c/m | Versatile and fast wordprocessor, packed with features such as the ability to scale Calamus outline fonts on the fly |
| Timeworks Word Writer | £51.03 | Electric Distribution | 512k | c/m | Very easy to use and competent package. Features include a thesaurus and outliner |
| Write On | £49 | Compo | 512k | c/m | Value for money wordprocessor. Also has limited DTP-type features |

Utilities - disk

| product | price | supplier | RAM | mode | comments |
|---------------------------|--------|----------|------|------|--|
| DataLite 2 | £49.95 | HiSoft | 512k | c/m | Excellent utility that can effectively save up to 50% of space on your drive. |
| Diamond Back II | £39.95 | HiSoft | 512k | c/m | Powerful and fast hard disk backup utility. Featured packed with support for Spectre GCR partitions and 1.44Mb drives. |
| Diamond Edge | £49.95 | HiSoft | 512k | c/m | Disk management utility which allows file recovery and drive maintenance features such as de-fragmentation |
| KnifeST | £24.95 | HiSoft | 512k | c/m | Powerful disk editor with all the features needed to maintain/repair and recover files. Falcon-compatible |
| Uni' Item Selector | £14.95 | ST Club | 512k | c/m | A replacement file selector with improved file handling features and multiple drive buttons |

While every care has been taken to ensure product descriptions and prices are accurate, software is continually being re-priced and updated.

We rely upon software houses and suppliers to keep us up to date with any changes and as of going to

press, the information contained within the guide is correct.

NOTE: Screen mode entries are: m - mono, c - colour and hc - high resolution colour (graphics cards, Falcon030 modes and so on)

Art and graphics packages

| product | price | supplier | RAM | mode | comments |
|---------------------------|--------|-----------------|------|--------|--|
| Arabesque Prof. | £129 | Compo Soft. | 1Mb | m | A graphics drawing program combining bitmap and vector capabilities. Ideal for the DTP user |
| Convector Prof. | £99 | Compo Soft. | 1Mb | c/m | A powerful autotracer program which transforms bitmap images into vector images which can then be scaled and rotated |
| DA's Vector | £149 | CGS | 2Mb | hc/m | Very powerful colour vector graphics program. Masses of features and extremely versatile. |
| Degas Elite | £25.99 | Electronic Arts | 512k | c/m | The one-time standard art package. Still very versatile and feature packed |
| Imagecopy | £9.95 | ST Club | 512k | c/m | Versatile image utility with features such as image conversion, screen grabbing |
| Imagecopy Colour | £14.95 | ST Club | 512k | c/m | Enhanced colour version of the above with more features |
| Imagecopy 2 | £19.95 | ST Club | 512k | c/hc/m | Excellent and powerful image utility with features such as image conversion, screen grabbing from all resolutions |
| MegaPaint II | £49 | Silica Systems | 1Mb | m | Good for use with scanned images. With its symbols library and high degree of accuracy, it is useful for technical drawing too |
| MegaPaint Prof. | £219 | Silica Systems | 1Mb | m | The professional alternative to MegaPaint II. Packed with more features |
| Scanlite | £20 | Ladbroke | 512k | c/hc/m | A useful scanning accessory. Supports Golden Image, Migraph Geniscan and Datascan hand scanners |
| Silhouette | £60 | Ladbroke | 1Mb | m | Autotracing program for converting bitmap images into vector images. Supports direct scanning with Scanlite accessory |
| Techno Box Drafter | £149 | Silica Systems | 1Mb | m | Reasonably fast CAD package with good quality output. Good range of features but is fairly complicated |
| The Dream Team | £499 | CGS | 2Mb | hc/m | Combination of Didot and Retouche professional. Didot is a vector graphics package with Retouche being a retouching program. |
| The Dream Team | £299 | CGS | 2Mb | hc/m | Same as above but for mono work |
| TruePaint | £39.95 | HiSoft | ? | c/hc/m | Multi resolution art package for all Ataris. Includes Falcon030 enhancements and multi-picture format support and conversion |
| Video Master | £49.95 | HiSoft/AVR | 512k | c | Low cost video digitiser and audio sampler. Great value for money. Falcon compatible |

Document processors/editors

| product | price | supplier | RAM | mode | comments |
|------------------------|---------|---------------|------|------|---|
| EdHak | £11.95 | Douglas Comms | 512k | c/m | Versatile and fast and can also be used as an accessory. Ideal for use with communications packages |
| Steno | £17.99 | CompoSoft. | 512k | c/m | Excellent text editor which also interfaces with the Stalker comms package |
| Tempus 2 | £24.95 | HiSoft | 512k | c/m | Very fast and versatile text editor |
| Microsoft Write | £129.99 | Atari UK | 512k | c/m | Easy-to-use GDOS document processor. Very reminiscent of the Macintosh in places |

Spreadsheets

| product | price | supplier | RAM | mode | comments |
|------------------|---------|---------------|------|--------|--|
| DGCalc | £39.99 | Digita Inter. | 512k | c/m | Budget spreadsheet with a good list of features. Allows for menu or command line operation, Ascii export and multi-window mode |
| K-Spread3 | £59.95 | HiSoft | 512k | c/hc/m | Full featured spreadsheet. Falcon compatible |
| LDW Power | £129.99 | Atari UK | 1Mb | c/m | Fast with Lotus 123 compatibility. Up to four worksheet windows. for sideways printing |

Business, finance and presentation graphics

| product | price | supplier | RAM | mode | comments |
|----------------------------|--------|---------------|------|--------|--|
| Atari Works | £129 | HiSoft | 1Mb | c/hc/m | Integrated spreadsheet/database/editor. Falcon compatible |
| Cashbook Combo | £79.99 | Digita Inter. | 512k | c/m | A combination package which includes Cashbook Controller and Final Accounts saving you £30 |
| Cashbook Controller | £59.99 | Digita Inter. | 412k | c/m | Replaces cash and petty cash books and also lets you enter credit sales and purchases |
| Final Accounts | £39.99 | Digita Inter. | 512k | c/m | This package takes information prepared by Cashbook Controller and produces reports and profit and loss accounts |
| Home Accounts | £29.99 | Digita Inter. | 512k | c/m | A low cost, easy to use home finance manager |
| Home Accounts 2 | £54.99 | Digita Inter. | 512k | c/m | An advanced version of Home Accounts. Features include sophisticated reporting function with graphics. 1Mb recommended |
| K-Data | £39.95 | HiSoft | 512k | c/m | Easy to use and flexible database |
| K-Graph 3 | £49.95 | HiSoft | 512k | c/hc/m | Easy to use presentation graphics program. Falcon compatible |
| K-Spread 4 | £99.95 | HiSoft | 1Mb | c/hc/m | Enhanced spreadsheet with graphics. Falcon compatible |
| Mailshot Plus | £49.99 | Digita Inter. | 512k | c/m | A good label printing package with lots of features. Has good wysiwyg label display |
| Superbase Prof. | £99.95 | HiSoft | 1Mb | c/hc/m | Fully relational database. Powerful and versatile. Falcon compatible |
| System 3 | £59.99 | Digita Inter. | 512k | c/m | Three business tools make up this versatile package. Features include give graph types (pie, bar and line etc) |
| System 3E | £79.99 | Digita Inter. | 512k | c/m | Extended version of System 3 providing doubled capacity for customer accounts and stock items |

Programming

| product | price | supplier | RAM | mode | comments |
|--------------------------|--------|-------------|------|--------|--|
| DevpacST 3 | £79.95 | HiSoft | 512k | c/hc/m | The best assembler for the Atari range of computers. Also supports the Falcon030. Excellent |
| FTL Modula-2 Dev. | £99.95 | HiSoft | 1Mb | c/hc/m | A fast compiler language. Features include library manager, menu creator and 68881 maths co-processor support. Falcon compatible |
| HiSoft Basic 2 | £79.95 | HiSoft | 512k | c/hc/m | Probably the most powerful Basic programming language for the ST at the moment. Outstanding documentation. Falcon compatible |
| HiSoft FORTH | £39.95 | HiSoft | 512k | c/m | Multi-standard FORTH compiler |
| High Speed Pascal | £99.95 | HiSoft | 512k | c/hc/m | Designed to be compatible with Turbo Pascal on the PC. GEM-based interface, integrated editor. Falcon compatible |
| Lattice C 5.5 | £149 | HiSoft | 512k | c/hc/m | A powerful C programming language with a comprehensive library of routines. 1Mb recommended. Falcon compatible |
| NeoDesk CLI | £17.99 | Compo Soft. | 512k | c/m | A versatile command line interface |
| Nevada COBOL | £49.95 | HiSoft | 512k | c/m | A ANSI 74 COBOL compiler. Runs under CP/M |
| Power Basic | £29.95 | HiSoft | 512k | c/hc/m | An excellent low cost basic compiler. Very fast. Falcon compatible |
| X-Debug | £24.95 | ST Club | 512k | c/m | Advanced debugging aid for programmers. 1Mb is recommended |

Comms

| product | price | supplier | RAM | mode | comments |
|------------------|--------|-------------|------|------|--|
| Stalker 2 | £39.99 | Compo Soft. | 512k | c/m | Excellent communications package with lots of features |

Utilities - general

| product | price | supplier | RAM | mode | comments |
|------------------------|--------|--------------|------|--------|--|
| Address | £12.95 | ST Club | 512k | c/m | Useful address database program. Fully GEM driven and easy to use |
| CalAssistant | £19.95 | ST Club | 1Mb | c/m | Provides an online help system for Calamus |
| CalAssistant SL | £29.95 | ST Club | 1Mb | c/hc/m | Provides an online help system for Calamus SL |
| CompoScript | £234 | Compo Soft. | 1Mb | c/m | A PostScript emulator which takes PostScript fonts and prints them on virtually any printer |
| FastCopy Pro | £24.95 | ST Club | 512k | c/m | Fast disk copier which supports hard drives and 1.44Mb drives. Lots of features |
| Harlekin | £19.95 | HiSoft | 512k | c/m | A suite of accessories that no ST user should be without |
| Harlekin2 | £39.95 | HiSoft | 512k | c/hc/m | Version 2 of this versatile and powerful suite of accessories. Falcon compatible |
| Key Master | £6.95 | ST Club | 512k | c/m | Macro processor type utility which allows you to assign lengthy key sequences to a single key |
| Molgraph | £24.95 | ST Club | 512k | c/m | A molecular modelling program which allows you to view, rotate and scale molecular models |
| Mouse Master | £9.95 | ST Club | 512k | c/m | Macro-like utility which records mouse operations and commands which can be assigned to a single key press |
| Mouse Tricks | £9.50 | ST Club | 512k | c/m | A desk accessory mouse utility which allows versatile configuration of mouse movement. Also includes screen saver |
| Multiprint | £9.95 | ST Club | | c/m | An intelligent printer buffer utility which records data sent to the printer |
| MULTOS | £49.95 | HiSoft | 2Mb | c/hc/m | Atari's multitasking operating system. Falcon compatible |
| NeoDesk 3 | £40.81 | Electric Dis | 512k | c/m | A replacement desktop packed with features such as the ability to place "reminder" notes on the desktop |
| NeoDesk CLI | £17.99 | Compo Soft | 512k | c/m | A command line interface to complement NeoDesk 3 |
| NVDI 2.5x | £49.95 | System Sol. | 512k | c/m | The fastest software accelerator available yet. Massive increases in screen output speed and Falcon030 compatibility too |
| PageAssistant | £29.95 | ST Club | 1Mb | c/hc/m | A utility which provides online information for the PageStream colour DTP program |
| Saved! | £19.95 | HiSoft | 512k | c/hc/m | A set of utilities including a reset-proof RAMdisk. Falcon compatible |
| SpeedoGDOS | £39.95 | HiSoft | 512k | c/hc/m | Atari's graphics device operating system. Handles outline fonts and is compatible with most existing GDOS applications. Includes 14 fonts. Falcon compatible |
| TurboST | £24.95 | HiSoft | 512k | c/m | A software blitter to speed up screen output |
| Warp 9 | £24.95 | ST Club | 512k | c/m | A software accelerator which increases the speed of all screen output. Most programs which use GEM will perform much faster |
| WERCS | £24.95 | HiSoft | 512k | c/hc/m | Construction kit used by programmers to create GEM objects such as dialogue boxes, alerts and menus. Falcon compatible |
| XBoot 3 | £34.95 | HiSoft | 512k | c/hc/m | Excellent boot management system. Falcon compatible |

Font and type

| product | price | supplier | RAM | mode | comments |
|-----------------------|--------|-----------|------|------|---|
| C-Font 2 | £9.99 | CompoSoft | 512k | c/m | A conversion utility to convert Calamus fonts to GEM bitmap format |
| Fontkit Plus 4 | £24.95 | ST Club | 512k | c/m | Probably the best font designer/editor for the ST. Lots of features including support for Calamus |
| Fonty | £11.95 | ST Club | 512k | c/m | A font editor for Calamus |
| Trimfont | £9.95 | ST Club | 512k | c/m | A GEM font manager. Features include font compression, change and list font with ID number |

Audio sampling

| product | price | supplier | RAM | mode | comments |
|----------------------|--------|------------|------|------|---|
| Mastersound 2 | £19.95 | HiSoft/AVR | 512k | c | 8-bit mono sampling software and hardware. Very good editing facilities |
| StereoMaster | £39.95 | HiSoft/AVR | 512k | c | 8-bit stereo sampling software and hardware with real-time special effects facility |
| Replay 16 | £129 | HiSoft/AVR | 512k | c/m | 16-bit mono sound sampler with Midi support |

Education

| product | price | supplier | RAM | mode | comments |
|-----------------------------|--------|-----------------|------|------|---|
| ADI Maths (11-15s) | £25.99 | Europress Soft. | 512k | c | Wonderfully animated extra-terrestrial teaches basic maths |
| ADI English (11-15s) | £25.99 | Europress Soft. | 512k | c | Learn the principles of the English language with the alien tutor |
| ADI French (11-15s) | £25.99 | Europress Soft. | 512k | c | Learning French takes on a whole new dimension with a terrestrial for a tutor |
| Fun School 3 (u5s) | £19.99 | Europress Sof. | 512k | c | Six games teaching counting, letter matching, shape matching and reading |
| Fun School 3 (5-7s) | £19.99 | Europress Soft. | 512k | c | Games include time telling tutor, Funtext, Collect (guide the frog across the logs to solve puzzles) and Journey (teaches directions) |
| Fun School 3 (7-11s) | £19.99 | Europress Soft. | 512k | c | Features Treasure Search (follow compass directions to find buried jewels), Word Search and Sentences |
| Fun School 4 (u5s) | £24.99 | Europress Soft. | 512k | c | All the Fun School 4 series feature six games. The under 5s package features games such as Teddy Paint |
| Fun School 4 (5-7s) | £24.99 | Europress Soft. | 512k | c | Six more fun games including Opposites (learn new words by matching opposites), Shopkeeper (teaches the value of money) |
| Fun School 4 (7-11s) | £24.99 | Europress Soft. | 512k | c | Six more games for the older kids |

Databases

| product | price | supplier | version | RAM | mode | features | comments |
|----------------|--------|--------------|---------|------|------|-------------|---|
| DGBase | £49.99 | Digita Inter | - | 512k | c/m | ● ● ● ● ● ● | - |
| NameNet | £49.95 | System Sol. | v2.71 | 512k | c/m | ● ● ● ● | Excellent and fast address database with lots of features |
| Prodata | £40 | Arnor | - | 512k | c/m | ● ● ● ● | - |

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record display/print filter
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Contacts

Arnor, 611 Lincoln Road, Peterborough POE1 3HA.
Tel: 0733 68909

CGS-ComputerBild, 19 Ledbury Place, Croydon CR0 1ET.
Tel: 081 686 8121

Compo Software, Digita International Ltd, Black Horse House EX8 1JL.
Tel: 0395 270273

Electric Distribution, Meadow Lane, St Ives, Huntingdon PE17 4LG.
Tel: 0480 496666

HiSoft, The Old School, Greenfield, Bedford MK45 5DE.
Tel: 0525 718181

JCA Europe, 30a School Road, Tilehurst, Reading RG3 5AN.
Tel: 0734 452416

Ladbroke Computing, 33 Ormskirk Road, Preston PR1 2QP.
Tel: 0772 203166

Silica Systems, 1-4 The Mews, Hatherley Road, Sidcup DA14 4DX.
Tel: 081-309 1111

System Solutions, The Desktop Centre, 17-19 Blackwater Street, East Dulwich SE22 8RS. Tel: 081-693 1919

The ST Club, 2 Broadway, Nottingham NG1 1PS.
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- GAM-28 Queen of Spades/Frogger + 1 TD
- GAM-34 X-wind/Bugs/Warrior + 2 more TD
- GAM-36 Klavon/Combed/Maze + 2 TD
- GAM-38 Claves of Ript/Freeze/Harris TD
- GAM-45 Die Alien Blob (very addictive) S
- GAM-51 Battleships (with speech) + 2 more TD
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- GAM-84 Tetra/Duane + 4 (MONO) games TD
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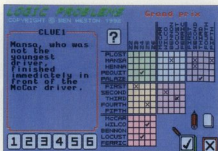
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Clicking on the grid with ticks and crosses will eventually produce a solution to the problem, all you need now is a brain...

Logic Problems

Programmed by: Ben Weston
Available From: LAPD • Disk No L.19

Shoot-'em-ups and platformers are all well and good, but most of them tend to be very straightforward leading to tedious and boring gameplay.

What you lot need is something mentally challenging, something to really test your brains – something called Logic Problems. Now don't start groaning, just defer that immediate opinion and read on – you might learn something...

A logic problem consists of a series of clues, bits of information, and a collection of subjects which must all be matched correctly with each other.

When the subjects are correctly matched, the problem is solved. This is achieved by working systematically through the clues, and applying logical eliminations and deductions to the problem. Yes, er well that's what I was told and I didn't understand it either, so I booted up the program and tried it for myself.

Logic Problems actually converts the logic problem format found in puzzle magazines onto a reusable and easy-to-use grid system.

In theory, a logic problem can be solved totally in your head, but unless your name is Albert Einstein you're going to be better off with a grid.

The grid is where everything happens. It matches every subject with every other subject, giving a box for each. The box is there to enter either a cross (to rule out a match) or a tick (to make a match).

Eventually, with patient appliance of the logic with which we were all blessed, the whole grid will be filled with ticks and crosses. You will then be able to find out if you got the logic problem right via a click from the mouse.

The problems vary, but they all use the same sort of logical thinking to work them out. Logic Problems doesn't look fancy and the sound doesn't exactly excite your ears, but it does work and make you actually use your brain.

For those more intelligent ST users and those who fancy a challenge, Logic Problems is ideal.



Here is the main menu where you choose between six different logical problems

PUBLIC

Sick of not having enough money for decent programs? Well, come inside to the PD clinic. Jonathan Maddock will see you now in room four...



The arcade shoot-'em-up section which supposedly entices kids to try out the education part of the program

The Spitting Fish

Programmed by: Stein Arne Jensen
Available From: STUG Norway PDL • By name

Best piece of educational software award this month goes to Stein Jensen for his utterly bizarre The Spitting Fish. Stein apparently wanted to make a "normal" educational product, but he needed some sort of incentive to entice kids to use it.

He came up with the idea of splitting the program in half. The first is a pure game which hopefully will be so addictive that the child is willing to spend some time on the educational part later, so that s/he can have another go on the game section afterwards.

The game is an out-and-out shoot-'em-up featuring the star of the program, the Spitting Fish. The Spitter, which is a "real" species, originates from South East Asia, and its job in life is to feed its children. It does this by taking

in water, rising to the surface and spitting it out at passing insects. The insects then fall into the water and are happily eaten by the fish's young.

Once the person using the program has spat at and killed 20 insects, s/he moves on to the educational section. This consists of a lesson in multiplication using dice.

The two dice roll onto the screen and a "times" symbol appears in-between. The child then has to work out the answer to the sum. A happy, smiley face will appear if the child gets the answer correct, a wrong answer soliciting a lonely, sad and dejected variant.

Once the child has correctly answered a certain amount of questions, s/he will return to the game and thus the process repeats itself once more.

The Spitting Fish forms a good bond between education and entertainment and is nicely presented and well thought out. It comes highly recommended.



The dice form part of the multiplication section where the child has to get so many questions right

Polyfilm

Programmed by: H Tilley
Available From: Floppystop • Disk No ART.3734C

As a rule, ray-tracing packages are outrageously expensive and are not much cop unless you've got loads of memory and a super-fast ST.

About to break that rule is Polyfilm which is just about one of the most impressive and comprehensive PD packages I have seen in a long time.

The program looks and behaves very much like a program called Real 3D on the Amiga which I saw while wandering around the office of our sister magazine, *Amiga Computing*. It lets you create light-shaded objects and display them as still pictures or – ten times better – as a complete animation. Obviously the bigger the animation, the more memory it's going to need and the longer it's going to take to do.

The examples included on the disk are fantastic. Unfortunately they are not very long, but they have been made so that they can be easily looped, thus creating an illusion of a

sector



Hunchback, a classic computer game brought to the ST thanks to the wonderful world of PD...

Hunchy 1066

Programmed by: Powerlist
Available From: LAPD • Disk No L.45

Once in a while it's quite interesting to see a new game come along and watch people drool all over it. Words such as "original" and "exciting" fill the air from enthusiastic gamers.

This is all well and good and I'm not knocking the new games, but there is something about a classic, a golden great, a blast from the past, a rage from the ages... (yes we get the idea - Ed)

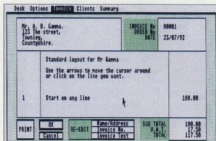
Asteroids, Stars and Missile Command are unmistakable and unchallenged classics and I can sigh and almost smell the nostalgia even as I write this.

One of my favourite games of all time just has to be Hunchback. OK, it was so basic that it was almost laughable, but it had that addictive quality to it.

How happy do you think I was when I saw a PD disk with Hunchy scribbled on it? Hmm, quite happy, but not ecstatic because I have seen classic computer games completely ruined by inadequate PD programmers. Fingers crossed, I booted up the disk.

Hunchy 1066 is not half bad. The graphics aren't exactly wonderful, but the gameplay and addiction are still there in force and that, my friends, is what counts.

The story is that Ed, the hero, has to rescue



Invoice Master - An accomplished and very comprehensive piece of PD

his wife-to-be, Ezzy. In true Hunchback style you must guide Ed over the perils of 1066 to rescue his beautiful intended.

You've got to watch out for pits, though. Falling down anything or into water will kill you instantly. Also flaming arrows, low flying meteors, bombs, hedgehogs and any low flying birds must be jumped over like an Olympic hurdler.

When you complete a screen, a bell will appear at the bottom. Collect five of these and you'll get yourself a new life. If you lose a life you lose all your bells.

The game is very close to the original, but isn't quite that good. It is still one of the best Hunchback games I've seen on the ST PD scene, though, and this will keep you nostalgic junksies happy for quite a while.

Hunchy jumps, hops and skips his way past level two with the help of a barrel



continuous aim.

The editor is one of the most integral parts of the package and this is where the user will create all of the objects for use in a film as well as the preferences file for the film (the file which holds all the palettes, patterns and light source shadings).

Every single feature would take at least a couple of pages to write about, so to give you a general feel I'll tell you about the editor part.

The editor screen consists of four windows in the left two-thirds of the screen, and a menu of options and three bars in the right third. The windows each hold a projection of the current object.

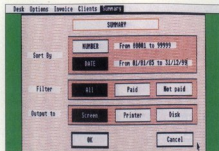
The top left window holds the front projection of the object and the top right window holds the end projection. The bottom left window holds its plan projection and finally the bottom right window holds a 3D wireframe projection. The orientation is displayed by the three bars in the lower right corner of the screen.

The final element of the editor is the menu. Clicking on a menu item (or pressing the indicated key) will activate the corresponding function. Many menu items bring up further menus to control the action of the function.

For instance, the first menu item, Add, brings up a further menu whose items consist of Point, Line, Triangle, Quad, Sphere, Detail, Colour and Menu.

Choosing Point or Line from here will immediately put you into Creation mode, in which you can create new shapes inside the object's definition.

After creating your objects, you then ray-trace the whole thing and Bob is indeed your uncle. I only wish there was the space to enthuse further about Polyfilm, but as there isn't, you should go and buy it, because it is quite simply an astounding piece of ST software.



Getting a summary of your clients is very easy to do thanks to the program's uncomplicated point and click system

Invoice Master

Programmed by: Mick Austin
Available From: LAPD • Disk No M.148

Invoices can be a right pain in the behind at the best of times and trying to do them without the help of a computer is a laborious and complicated task.

There might be some ST owners out there who have to do invoices this way and haven't quite got the cash to buy a fully comprehensive invoicing program, because for a good one you could pay at least £50.

This is where the public domain is a godsend because most people, especially these days, find spare cash a rare commodity and thus have to do without.

Most businesses have invoicing set-ups, but for those who are self-employed or run their own small business, a PD solution is the ideal one to turn to.

Invoice Master is one such program that is more than adequate for a small business or for the self-employed. The software is very simple to utilise. Everything is all controlled via drop-down menus, keyboard short-cuts and GEM forms.

It is possible to build up a client/customer database. From the invoice and client information that you collect and type in, various summaries can be accessed and quickly made.

This program can be used by anyone wanting to produce an invoice but will be most useful to small businesses producing invoices which can be grouped together or who have a set of clients whom they deal with on a regular basis.

Invoice Master can be run from a hard or floppy drive in high or medium resolution. Printed output can be configured to suit your printer and the layout can be arranged to fit pre-printed invoices. Summary output can be directed to the screen, printer or disk.

The disk file may be saved as Ascii, which can then be loaded into a wordprocessor, or alternatively saved in a format suitable for loading into a spreadsheet such as Vip.

Getting the correct invoice layout to meet your requirements will take some trial and error and, of course, plenty of patience. Once everything is configured, the day-to-day operation is quick and simple and will run like a dream.

I would heartily recommend Invoice Master. It's nicely set out and extremely easy to use and anyone who runs a small business or is self-employed would be a complete mug not to at least take a good look at it.

Strategy

Programmed by: H. Tilley
Available From: LAPD • Disk No G.298

This is yet another "thinking" game, billed as the strategy game that's a tragedy. Quite why I don't quite know, but it does lend it the name Strategy, for starters.

The program is totally mouse-controlled. The basic idea is to capture as many of the enemy's counters as possible. This is achieved by placing one of your counters above and below the enemy counter, or to the left and right of it.

In other words you must "trap" it – by doing this you will capture it. This must be done a specific number of times as indicated by the target number which is displayed on the game screen.

You can only place one counter at a time. By simply clicking on any of the grid squares, and as long as it's empty and you have some counters left, you will place a green counter there.

The program is fairly comprehensive and contains three game modes. The first mode is entitled contest. This is the normal fight mode and the one you will probably use the most. You basically have to try and defeat all the computer opponents.

The second is where you will need the help of a chum and is called double. This is, of course, the two-player mode where you and



Here is the main board where all the strategy takes place either against the computer or a friend

another human player can compete against and test each other's strategy skills.

Unfortunately there is only one level, but it may be completed any number of times allowing you to hold a "best of three" contest.

In this mode, the game can be controlled using a mouse for each player; if you don't have two mice you can always use a joystick instead.

The last mode is called trial. This is the practice mode. Here you can compete against an easy foe and practise your skills.

H. Tilley, Strategy's Creator, has found that on some monitors the screen is noticeably dark. To attempt to remedy this s/he has made a routine to brighten it. All you have to do is press the + and - keys to change the screen brightness; there are four settings in all. This, however, is simply a palette change and raises the intensity of the RGB output by one increment.

Strategy is a fine little game and works very well. The graphics are adequate, but the emphasis is on gameplay and luckily it has bags of it.

If you like this sort of thing then you'll be very impressed. Non-strategy fans might want to take more than a passing glance at it, too.

Attention all PD libraries

If you wish to feature in **Atari ST User**, just send any of your titles which you feel worthy of review to: **Public Sector, Atari ST User, Europress Enterprise, Europa House, Adling-ton Park, Macclesfield SK10 4NP**

Please include a list of the contents of each disk detailing the program name/s and what they are. This ensures quick assessment and inclusion into the magazine.

If you are a shareware author, send in your latest creation along with a list of libraries who will be distributing your program/s thereby achieving maximum publicity.

Grandad 2

Programmed by: Ian Scott
Available From: Caledonia PDL • Disk No. GM-184 & GM-185

By far the best game this month is the sequel to Grandad, aptly titled Grandad 2 – The Search for Sandwiches. I never saw the original game, so all this Grandad lark is new to me, but I was suitably impressed.

For starters, the graphics are just exquisite, and put many full-priced commercial games to shame. The backdrops and character sprite are really well drawn and the game has that fresh and exciting look to it.

For once I have found a game that is actually funny. Some PD has tried humour and it hasn't worked, but Grandad 2 is quite simply hilarious.

From the starting sequence where there is a skit on the Terminator 2 logo (Grandad 2, gedd'it) to the in-game humour, some of which contains the odd tame swear word, it probably isn't recommendable for small children, but most of the gags are just double entendres.

It is best described as an adventure using a menu system which can be brought up at any time via a quick stab of the Fire button. The star is Grandad who rides a three-wheeled motorbike while searching for his sandwiches.

The other characters are just as good and range from the gay bloke in the men's toilets in the park to the dangerous foreigner who has a fondness for the odd Monty Python sketch.

Great graphics, wonderful playability, copious amounts of humour – the ideal ingredients for a totally brilliant ST PD wease. It's just as good as any commercial budget game, if not better. It comes on two double-sided disks and will cost you £4. You'll need 1Mb of RAM to run it.



I wouldn't be lying if I said that Grandad 2 is packed full of toilet humour!

Rebound

Programmed by: Dave Cobbleddick
Available From: All major PD outlets • By name

Rebound is a bat and ball game, which is very similar in style to the golden oldie Breakout, except it doesn't have any bricks, and has three paddles.

One paddle is at the top of the screen while the other two are placed on either side. The game requires determination, skill, stamina and a great deal of patience.

It is played over three difficulty levels and nine rounds and as it goes on it gets progressively faster and harder. You begin with three balls and the game is over when you either run out of balls or complete all nine rounds.

All control is via the mouse with only a few additional functions available from the keyboard. Your bat is located at the bottom of the arena and can move left and right; there is a limited amount of vertical play which, if handled carefully, can be used to great advantage.

There are four "hot spots" on your bat and where the ball strikes will determine the rebound speed and angle of deflection.

As previously mentioned you begin with three balls and your objective is to keep each ball in play until the time out for each round has elapsed.

You lose a ball by allowing it to fall out of the play arena and the game will finish after you lose your last ball or if complete all nine rounds.

Losing a ball also has the annoying effect of shrinking your bat in size thus making your objectives more difficult to achieve.

There is a minimum size to which your bat will shrink and it will stay at the diminished size until the end of the round. At the start of each new round your bat is replaced and restored to its full size.

Rebound might run on some 512k machines, but the game's creator says that it's much better with 1Mb of RAM.

Dave Cobbleddick is making quite a name for himself in the world of PD games and his products seem to be getting better and better. Rebound is just about his best effort to date – it's highly addictive and gives the stale theme of "bat and ball" a new lease of life.

Grandad mounts his motorbike and sets out in search of his sandwiches...



Where to get 'em

- Caledonia PDL, 250 Oldtown Road, Hilton, Inverness IV2 4PT
Tel: 0463 225736
- Floppyshop, PO Box 273, Aberdeen AB9 8SJ Tel: general/technical queries 0224 586 208; Credit card orders only 0224 312756
- LAPD, PO Box No. 2, Heanor DE75 7YP Tel: 0773 605010 or 761944
- STUG Norway PDL, c/o SA Jensen, 3630 Rodberg, Norway.
Tel: Mon-Fri, 9 'til 2, (+47) 32 74 173
Fax: (+47) 32 74 1700

System Solutions

News

Coming Soon...

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NEW

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FLY LIKE THE WIND...

NVDI replaces the Atari display routines. Screen updates with NVDI are 3-10 times faster. Works with all TOS versions on all Atari ST, MegaST, TT and for the Falcon.

"Scrolling through a long text file in 1st Word Plus took half the time ... Calamus, Calligrapher and Wordflair also showed a marked improvement ... Compatibility is remarkable and we have yet to find a program that is not compatible with NVDI. ... a must for all ST and Falcon owners"

ST Review Issue 16, August 1993.

NVDI Version 2.5 - £49.95

Hard Drives

"Extremely nice looking..." Professional Quality SCSI Hard Drives Systems, 40-2600 Megabytes from £299. "This is the fastest of the drives reviewed and is superbly engineered, not to mention great value for money" ST User, Issue 90, August 1993.



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(August only) Fitted price: £89.95

High Res Monitors

The SM14s is a perfect replacement for the Atari SM124/5 monochrome monitors, exceeding the original specifications. The 14" Philips high resolution paperwhite FST gives a perfectly centred, crisp and sharp image without blurring at the edges.

On/Off switch, Volume and Brightness at the front; Vertical Size, Horizontal Phase, Contrast and Focus at the back. The tilt and swivel base and a monitor cable with the correct connector are standard.

An amazing 40% extra workspace can be gained with OverScan ST. The SM14 is a totally plug-in-and-go unit.

"Essential Buy, 90%" ST Review, May 93

without audio
SM14 £149.95

with audio
SM14s £169.95

Special Price
 when bought with
 OverScan ST. See Below

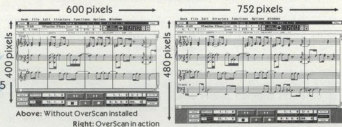


Crossing the Border

EVER fancied the idea of a larger monitor, but not the price that goes with it?? Well now you can, with OverScan ST. This little board fits inside your Atari ST(FM) or Mega ST (not STe's) allowing you to use the black borders as an extended working area. In practice this means that you will get up to 40% extra screen in high resolution, and up to 60% in colour.

OverScan ST
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System Solutions

Windsor Business Centre, Vansittart Road,
 Windsor, SL4 1SE Fax: 0753-830344

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0753-832212

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17-19 Blackwater Street, London, SE22 8RS

Tel: 081-693 3355 Fax: 081-693 6936

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Windsor Service Centre:

Windsor Business Centre, Vansittart Estate, Windsor, SL4 1SE. Tel: 0753-818816

London Service Centre:

The Desktop Centre, 17-19 Blackwater Street, East Dulwich, SE22 8RS. Tel: 081-693 1919

ATARI WORKSHOP

Hard times ahead

First let me say thanks for all the very useful hints and tips you've published over the years. I've bought *ST User* right from the start and look forward to it every month, even though it costs Hfl 15 (about £5.75 or so) over here.

I'm looking around for a hard disk and keep seeing incredibly cheap PC hard disks in the second-hand columns, and since most of my hard-earned cash seems to go into buying expensive but interesting computer mags, a low cost path in my search for a hard drive is paramount.

It seems that the best way to go about this would be to buy The Link and then look around for a good hard disk, but I have a few questions first:

1. I gather there are different types of hard disk (IDE/ICD). How do I know which is compatible to an ST/Link setup?
2. Is it true that hard disks can have sector damage? I've heard of a PC virus which can cause repeated head crashes, ruining the disk altogether. Is this true, and if so, do you know of any software which can analyse a disk for bad sectors?
3. With regards to capacity, is it true that more is always better? I'll be using the hard disk with Cubase and Calamus and have a nasty feeling that 20Mb may not be enough. I have seen a second-hand 171Mb Connor drive in the paper for approximately £180. Can a 2.5Mb STM access all of this space, or is this just a bit silly?

I hope you can help me with some, if not all of these questions, as I'm getting very tired of swapping font disks when using Calamus.

Steve Wellock, Holland

Glad to hear you are pleased with the mag, Mr Wellock, and thank you very much for supporting us all these years.

There are indeed differing types of hard disks but the main types you should be looking at for use with The Link are SCSI (pronounced scuzzy) drives. SCSI drives are the most widespread and are generally a little faster than IDE drives. Buying The Link is a very good idea as this will allow you to use almost any drive which has a SCSI port on the back.

This port is a 50-pin socket which The Link can be plugged into. This means that drives with such a port, even those made for Apple Macs, PCs and other computers, can be used on your ST.

Of course you will have to reformat the drive, using the excellent ICD utilities that are supplied with The Link. Another bonus point about The Link is that you can also attach such exotic SCSI devices as Optical and CD-ROM drives too.

Yes, hard disks can have damaged sectors. One of the routine functions of hard disk formatting utilities is to search the newly formatted drive for such sectors.

Once found, the software makes a note of the number of sectors and where they are and effectively tells the drive that they are not to be used.

A virus can be the cause of a bad sector but regular use of a good virus checker, such as Ultimate Virus Killer or UVK, will help keep most types of virus at bay. UVK is available from Douglas Communications, PO Box 119,

Stockport SK2 6HW. Another indispensable piece of software that all hard drive owners should have is a disk analyser, such as Diamond Edge or Cleanup, from HiSoft and ICD respectively. These allow you to maintain your disk files and also repair certain types of problem. Cleanup is available from System Solutions (Tel. 081-693 1919) and HiSoft are available on 0525 718181.

Generally, more is always better. You certainly would use up 20Mb rather quickly with Cubase and Calamus so this is not an ideal size. All space on a hard drive is available no matter how much memory you have in your ST.

Super format

I have quite a large PD collection and have recently started using special formatting utilities that allow extended formats. Some of these utilities allow you to format up to 84 tracks with 11 sectors.

This results in a substantial increase in disk space but a friend tells me that it is unwise to

technical letters • problems • suggestions

ADVICE

format to this specification because of the danger of data loss. Is this true and if so, what is the safest specification to which I can format my disks?

G Malone, Avon

Your friend is quite right. Formatting to 84 tracks with 11 sectors is very unwise and data loss is likely. The safest parameters to use with a formatting utility are 80 tracks and ten sectors, which gives approximately 807k free space. It is also possible to use 81 or 82 tracks with ten sectors safely, but this depends on the drive mechanism which you have.

Some cheaper mechanisms have difficulty reading past track 80, which caused a few loading problems with some commercial games whose copy protection scheme involved accessing tracks beyond 80, so if you are unsure of your drives abilities, only format

to 80 tracks and you should have no problems, in fact, we often use an 80-track, ten-sector format for our very own CoverDisk.

68882 boost

I have recently gained an interest in 3D modelling and rendering applications. As many people may be aware, such a pastime is extremely time intensive due to the complex mathematics involved. At the moment, I have a Mega ST with 4Mb and the complete Cyber series of graphics applications.

I soon hope to replace my ageing Mega ST with a Falcon030 and I was wondering how easy it is to fit the Falcon030 with a 68882 maths co-processor, where can I get one from and how much do they cost?

H Peel, Southampton

Fitting a 68882 couldn't be easier, at least on the Falcon030 I have in the office from Silica Systems. There is an empty socket directly under the power supply. Just remove the power supply and plug the 68882 straight in.

Of course you should always take extreme care when handling such sensitive electronic components as they are very prone to damage from static electricity. Either buy a anti-static wrist band, from most electronic shops, or make sure to touch something earthed.

I usually touch the central heating radiator in my bedroom. As for price and where to get one from, System Solutions have them in stock for £69.95.

Got any tips, guv?

If you have any words of wisdom or know some hot tips that will make the universe a nicer place to exist in with an Atari computer, send them in and gain instant fame among fellow Atarians for being a thoroughly clever Homo sapiens.

I'll even send the best tipster a neat piece of software from the Atari ST User version of Fort Knox, aka the goodie cupboard. So get scribbling and send your tips to the Advice Service address shown on these very pages.

on030's language

you know of any other languages that have been written with the Falcon030 in mind?

T Marston, Sheffield

HiSoft have recently updated their range of programming languages (Devpac 3, HiSoft Basic 2 and Lattice C 5). Enhancements include extra Falcon030 specific libraries, improved debugger and a handbook which explains how to get the most out of using the new package on a Falcon030.

The extra libraries include routines which allow access to the Falcon030's enhanced video and sound hardware (including the DSP) as well as MultiTOS and Speedo GDOS. HiSoft can be contacted on 0525 718181.

technical knowledge and special diagnostic equipment. The ideal solution is to send it off to a specialist repair centre. Ladbroke Computers offer a good quotation and repair service and are also based in Preston, so I suggest you contact them on 0772 203166.

Automatic solution

After visiting my friend last week, I noticed that during a hard disk cleanup session in which he was deleting obsolete files and folders, he renamed a folder by clicking on the folder name, selecting Show Information from the File menu and just erasing the folder name and typing a new one in.

Last week, I was organising my hard disk and mistyped a folder name during the session. I tried to do the same thing my friend did to rename it but I can't delete the old name or type anything in. What's wrong with my ST?

W Warwick, Suffolk

Boot busted

Some of my games seem to have been damaged by a virus and I am told that the boot sectors are where the damage has occurred. The games in question are Cadaver and BSS Jane Seymour. Can you recommend a good virus utility that will prevent this from happening again?

K Mills, Scarborough

The best virus killer available is Ultimate Virus Killer from Douglas Communications, PO Box 119, Stockport SK2 6HW. Not only will this utility help protect you from viruses, it will most probably get your damaged Cadaver and BSS Jane Seymour games working again.

This is made possible by the fact that UVK has a comprehensive collection of boot sector data which it can duplicate to your original disks and will hopefully fully repair them as long as only the boot sector has been damaged.

Something to bear in mind nowadays is that some commercial games seem to be packaged with the disks write enabled (the little square hole in the top corner is closed). This means that a disk drive can actually write to the disk.

If a game doesn't require that a disk be write enabled, be sure to immediately write protect the disks before you put it in the disk drive.

SERVICE

Darren Evans, Advice Service, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP

RIP ST?

My ST has recently decided to stop working. Every time I turn it on, the Desktop appears but as soon as the mouse pointer is moved to the menu bar, the ST just resets.

I got the ST second-hand and the chap I bought it off said he had installed a socket for the 68000 and also added a 16MHz accelerator. Could this be the cause of the problem?

V Clarkson, Preston

Unfortunately, problems like this can be due to a number of reasons, most of which cannot easily be repaired by someone without

It is only possible to rename folders on TOS versions 1.4 or higher. I would guess that your computer probably has TOS version 1.2 which does not have this feature. I suggest that you check out the advertisers in this month's magazine for TOS upgrade offers.

At the moment, TOS version 2.06 is the latest and is a lot more friendly and versatile than the previous versions. If you want to upgrade to TOS 2.06, I suggest you get a switchable version so that you can revert to an earlier TOS due to some programs not being compatible with TOS 2.06.

Funny files

I have had some trouble with the CoverDisk files that come with the magazine. Every time I try and run one of them, I get a "Write Error". Is there something wrong with my ST or am I doing something wrong?

S Derbyshire, Essex

The majority of files on our CoverDisk are archived. This means that a program, which sometimes consists of a number of files, has been "squashed" down into one file to save space on the disk.

This allows us to put more programs than is normally possible onto our CoverDisk, thereby giving greater value for money.

All archived files begin with X_ and each must be copied onto their own disk and run from that. All the files within the archived file will then be copied onto the disk.

A "Write Error" occurs if there is not enough space on the disk, so make sure you use a clean disk.

New machine causes dump dilemma

I am about to produce a newsletter for my local ST club with features such as basic desktop techniques, using accessories, using archiving programs and many other topics being covered.

I will be using CalamusSL to produce the newsletter and I wish to include screen grabs for illustration. There are various PD screen grabbers around but they seem to be unable to cope with the enhanced screen modes of the Falcon030, which needs to be covered as many of our members actually own one. Can you suggest a package, either PD or commercial, which is up to the job?

L Curtis, Shropshire

You need look no further than Imagecopy 2 for your needs. This excellent accessory program, written by the very talented Jeremy Hughes, can adapt itself to all ST/TT/Falcon030 screen modes. Once installed,

simply press Alt-Help and you can select either the whole or part of the screen via a "rubber banding" feature and save it out in a number of formats.

Its features don't end at simply grabbing either. It can convert images to a number of different formats including Targa, TIFF, IMG, extended IMG (XIMG), Degas, Neochrome and others, it is a versatile picture viewer, allowing multiple images to be loaded in GEM windows or full screen with colour mapping and dithering being used in video modes containing fewer colours.

It's also ideal for those wanting to print images in either black and white or colour on a wide range of printers including 9 and 24-pin dot matrix, Bubblejet, Deskjet and Laserjet.

And best of all, it only costs £19.95 from The ST Club who can be contacted on 0602 410241.

GDOS - Atari's font handling system - has been around since the early days of the ST but it has caused more people more trouble than any other program I can think of!

Most of the problems are due to the ASSIGN.SYS file, the text file from which GDOS gets all its information about where the font files are located, which ones have been installed and which printer font matches which screen font. FONTGDOS was a big leap forward but it was still only capable of dealing with bitmap fonts.

With the release of SpeedoGDOS, things are really looking up. First of all it is much easier to use than GDOS as you never need to edit ASSIGN.SYS files or keep different versions available for different programs.

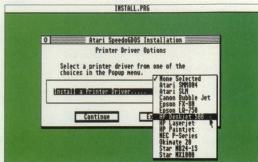
All font cache alterations can

be carried out using the utilities supplied, too, making it even easier than FONTGDOS to get up and running properly.

Secondly, and even more importantly, SpeedoGDOS offers scalable fonts of very high quality. This means that in a fully Speedo-aware application, you can choose which point size you want to use from within the application, without having to worry about whether you've got the right font files listed in your ASSIGN.SYS file.

It's also possible to choose odd sizes like 17 or 49 point text, something that would be highly unlikely with standard GDOS where font sizes tend to come in commonly used point sizes such as 10, 12, 18 or 36 points.

And thirdly, there are now more fonts available for use than there ever were for the old GDOS. The starter



Installing SpeedoGDOS

Andrew Wright gets to grips with SpeedoGDOS, the ST's first scalable type handler

Speed-o-fonts

Bitmap v outline fonts

Broadly speaking there are two types of font available on the ST, relating entirely to the way the font information is stored. The difference is much the same as that between bitmap and vector graphics and, indeed, outline fonts are often called vector (or scalable) fonts.

Bitmap fonts consist of "pictures" of each character made up of dots, just like a bitmap image. Separate files are required for each output device (usually one for the screen and one for the printer) and each point size and they can get very large, taking up an inordinate amount of disk space.

Examples of bitmap fonts include Harlekin's replacement system fonts, Signum fonts, That's Write fonts and the old style GDOS *.FNT fonts.

Outline fonts, on the other hand, are stored as mathematical descriptions. When an application demands a screen font for display or a printer font for output, the font scaling routines generate a suitable bitmap at precisely the right size. Examples include PostScript and Calamus fonts.

The Speedo outline format was developed by Bitstream to rival PostScript and while it is better in some respects (it supports a wider range of characters and many people argue that the quality is better), it has nonetheless lost the lion's share of the market to PostScript and TrueType, another outline format used on the PC and Mac.

pack from HiSoft includes eight typefaces in 14 fonts and there are other packs available that will allow you to expand your type collection with quality typefaces at a very reasonable cost.

The phrase "Speedo-aware", though, is crucial. Before you get too excited, it's important to point out that while SpeedoGDOS should work with most GDOS applications, it won't always provide the full benefits such as scalable type "on the fly".

Instead you may have to decide on the point sizes you need before you actually run the program. But first, let's look at what you get for your money.

SpeedoGDOS is sold by HiSoft and the packaging certainly reflects the fact. For your money you get a smart, glossy coated box, 50-page spiral bound manual and three disks in a plastic wallet.

Installation is simple enough using the utility provided and it will even make certain decisions based on the amount of memory you have available. For instance, on 1Mb machines the configuration utilities are copied onto your boot



Changing the printer driver using the Drivers utility

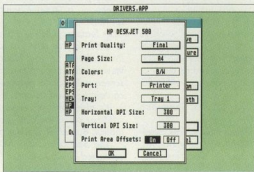
directory as programs but if you have more memory, they are copied as accessories. It even recognises existing GDOS installations and backs up the all-important ASSIGN.SYS files.

The fonts, printer drivers and various configuration files are copied on to your boot drive as well and the SpeedoGDOS program goes in the AUTO folder.

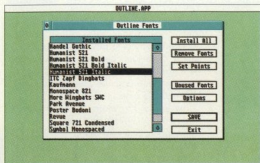
The manual covers installation in plenty of detail and there is a complete section devoted to floppy disk installation for those without the benefit of a hard drive. A quick reboot is then all that's required to get SpeedoGDOS installed in your system.

There are two configuration utilities supplied with the program, Outline and Drivers. Outline takes care of the cache size, installed fonts, point size and width tables while Drivers is mainly for selecting output devices, generally the printer.

SpeedoGDOS has three different caches that have to be tailored for your particular system. Although the default values are perfectly adequate, users with less RAM, and perhaps more AUTO programs or accessories, might have to reduce the size of the

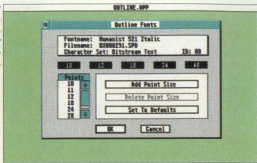


Changing the printer settings



Adding new fonts from the Outline utility

Adding new point sizes – note that this is irrelevant for Speedo-aware applications



caches to free memory for the programs, while those with plenty of free memory can afford to increase them to boost performance.

The first is the character cache – this holds the actual character data for the font currently in use. Whenever you type a character, SpeedoGDOS generates a bitmap representation of the character. It then saves it in the cache so that next time you type that character, the bitmap is already ready and waiting.

The second cache is a miscellaneous cache for the program's internal use but the size depends on things like the point size required and the number of fonts installed.

Finally there is a bitmap font cache for old-style GDOS fonts which SpeedoGDOS can handle just as well as the original GDOS, but if you aren't using them you can set its size to zero, using the supplied outline utility or accessory, thus saving memory.

If you need to use bitmap fonts, this cache has to be larger than the largest bitmap font you're likely to use and that can be quite sizeable if you're using a 300 dots per inch printer.

The program itself takes up about 110k of RAM without any caches. The default sizes for the caches are 50k and the program makes some recommendations based on current usage though it is simply a matter of experimenting with your own system to get the right balance between scaling performance and memory use.

The miscellaneous cache can be reduced to around 11k on a 1Mb STFM and the character cache to just 1k but rasterising fonts does take significantly longer than with the default settings.

On a 4Mb Falcon, setting the caches to 100k each made SpeedoGDOS's scaling practically invisible with almost no delay in rasterising fonts.

If there are problems loading fonts in small caches, error messages appear but the program seemed very stable and has so far always allowed me to save my document before quitting to resize the cache. The caches aren't dynamic, incidentally, and you have to reboot after changing the size of any of the caches.

Once you've got Speedo installed, it's time to get to grips with installing the fonts and printer drivers you need. The default installation makes all the fonts active but as they don't take much

memory until you start using them, this shouldn't be a problem.

You can install a printer during installation but if you have more than one, you can change the printer driver at any time using the Drivers utility/accessory.

Twelve drivers are supplied for the most popular printers – Atari laser, Deskjet, Paintjet, Laserjet, Canon bubblejet, Epson FX80, Epson LQ570, NEC P series, Okimate 20, and the Star 9 and 24 pins.

There are also a number of user definable settings for each printer such as print quality, page size, number of colours, port to which attached, printing offsets and resolution.

All the Speedo fonts are kept in one folder and they can be installed or uninstalled very quickly and extra point sizes from 1 to 999 added using the Outline utility.

Programs fall into three categories as for as SpeedoGDOS is concerned. Firstly there are a small number of Speedo-aware programs that can

actually scale fonts on the fly and let you choose whatever size you like. The list includes HiSoft's TruePoint, Wordflair 2 and, perhaps surprisingly, the budget bitmap/vector art package Silhouette.

The second category contains the programs that refuse to work with SpeedoGDOS at all. Unfortunately it includes the single most significant GDOS program that has ever been seen on the ST – Timeworks Publisher.

Timeworks is a slightly non-standard GDOS program so perhaps it's not surprising but let's hope GST can produce a fix before long.

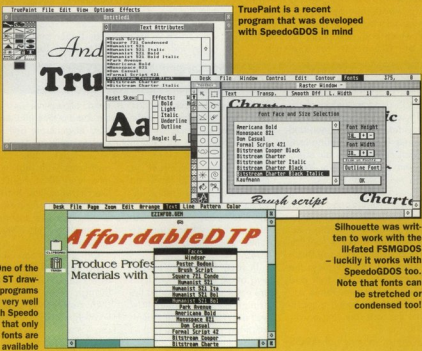
Others I've come across include Migraph's Touchup (which uses non-standard fonts) and Wordup. The latter two programs make a brave attempt but eventually get utterly confused.

The remainder fall into the third category – programs that work well with SpeedoGDOS but can't create fonts on

SpeedoGDOS at work

SpeedoGDOS looks different in every application because there's no standard way of selecting fonts. What remains the same however, is

the quality of the fonts, the speed of output and the extra flexibility that this font handler provides.



One of the oldest ST drawing programs works very well with Speedo – note that only a few fonts are available

Silhouette was written to work with the ill-fated FSMGDOS – luckily it works with SpeedoGDOS too. Note that fonts can be stretched or condensed too!

Fonts, fonts and more fonts...

the fly. Instead they have to use the preset point sizes that SpeedoGDOS makes available.

The following appear to work correctly - Easydraw 2/3, Hyperdraw, Hyperpaint, Degas Elite, Arabesque, Prism Paint, Fastbase, Microsoft Write and K-Spread 4.19.

In addition there are a few that work but have slight problems. Easytext Professional works to some extent but has trouble with the font widths and printing [Zsoft are currently working on a fix].

Several of the programs don't see more than a handful of fonts, though, so it's important to find out how many and ensure you have no more than that installed or you won't be able to access the ones you want.

The latter category require you to choose the point sizes you need before you run the program, otherwise you have to exit and then restart after you've created additional point sizes. It's inconvenient but when weighed against the benefits of being able to use any type size you like, it pales into insignificance.

Adding this relatively small utility to your ST turns a humble paint or drawing package into a powerful and much more flexible tool for design and illustration. Silhouette, for example, is transformed from a fairly mundane graphics package into a very capable tool for illustration, design and even the production of posters and leaflets.

TruePaint lets you do all kinds of things with text and in full colour too. Even the programs that don't use Speedo's power to the full are greatly improved, not least by the sheer range of fonts available.

SpeedoGDOS isn't perfect, though. Only whole numbered point sizes can be selected which restricts its use in DTP where body text might need to be set at 10.5 points for example. It

Three faces from HISoft's Designer's Pack

Poster Bodoni
Revue Regular
Formal Script

Bitstream Charter, *Charter Italic*
Charter Black, *Black Italic*
Cloister Black

Go Direct's Starter Pack includes four different styles of Bitstream Charter while the Decorative Pack includes faces such as Cloister Black

Dutch 801 Roman, *Italic, Bold, Bold Italic*
Swiss 721 Roman, *Italic, Bold, Bold Italic*
Cooper Black Monospace 821
Park Avenue VAG Rounded

HISoft supply these faces with SpeedoGDOS along with a "Dingbat"-style typeface and a monospaced symbol typeface

There are more than 250 Speedo format fonts available in total but the most economic way is to buy them in a pack. HISoft have launched two packs to go with the SpeedoGDOS bundle, the Writer's Pack and the Designer's Pack, both with 25 fonts in each.

The former has more body text faces, including Garamond and Zapf Calligraphic (the equivalent of Palatino), while the latter has a number of display and script faces.

Go Direct have also launched five packs, including Starter, Decorative, Headlines, Newsletter and Style Packs. The Starter Pack includes SpeedoGDOS and four styles of the excellent Bitstream Charter typeface while the Newsletter Pack includes ITC Garamond Book, Futura and Baskerville. Go Direct can be contacted on 0480 891171.

Speedo fonts are also available direct from Bitstream themselves, of course, either individually or in packs. Although the packs are aimed at PC users (there's a WordPerfect 6.0 add-on pack, for example) the font format is no different. Bitstream can be contacted on 0242 227377.

also needs a lot of memory to work at its best - 1Mb should really be considered the bare minimum as I had problems printing out a full page on a 1040STFM.

Not only that but some programs take a lot longer to load if a large number of fonts are installed and there can be a frustrating pause when waiting for the scaler to do its job, particularly when you change fonts or use more than four or five in a single document.

A font preview facility would be handy for aiding installation and it would be nice to see fonts installed from several different directories rather than just one. Version 2 perhaps?

On balance, though, SpeedoGDOS works like a dream - far better and faster than I had dared to hope for.

Scaling is carried out more or less in the background and even with a whole screen full of Speedo fonts, the screen redraws and scrolls with remarkable speed.

Printed output is crisp and clear and it certainly doesn't appear to be any slower than the old GDOS.

There are hidden benefits for Falcon owners - use SpeedoGDOS and you can run and print from all your old ST software, something you couldn't do before as GDOS crashes on the Falcon. SpeedoGDOS is MULTIOS compatible too, incidentally.

SpeedoGDOS has to be one of the most promising programs of the year for Atari owners. If developers support it by updating their existing programs and building support into new ones, SpeedoGDOS will be a great success.

What's GDOS got to do with it?

GDOS is an extension of the ST's operating system that provides matching screen and printer fonts in applications which support it - an effect known as wysiwyg, or What You See Is What You Get.

It achieves this by having separate bitmapped screen fonts and a bitmapped printer fonts stored in separate files. When you select a font for your document, let's say Dutch 12 point, GDOS displays the appropriate screen font and shows it on screen. When you print your document, it substitutes the corresponding printer font.

One advantage of GDOS is that you can use the same

fonts in wordprocessors, DTP packages, spreadsheets, databases and art programs as long as they are all GDOS compatible.

The main problem is memory as GDOS loads all the screen fonts into RAM when it starts up, making it all too easy to run out of memory when running some applications, even on a 1040.

In fact, GDOS isn't wysiwyg at all, as the screen fonts are never quite identical to the printer fonts no matter how well designed they are though for most purposes it makes little difference.

SpeedoGDOS, on the other

hand, allows true wysiwyg as the same outline information is used to generate both screen and printer fonts.

Contrast the GDOS approach with that used by other non-GDOS applications like Firstword Plus. It can only use the system font on-screen and the printer's internal fonts for output, making it much less flexible.

Other programs such as Calamus and PageStream don't use GDOS either, though they have their own methods of achieving wysiwyg displays by generating screen fonts from PostScript and Calamus format outlines.

BOTTOM LINE

FEATURES

A superb type manager that really transforms tired old GDOS applications.



EASE OF USE

Easy to install and use - everyone using fonts should have it.



VALUE FOR MONEY

Sounds a little expensive - until you see the quality of the 14 outline fonts!



Product: SpeedoGDOS

Price: £48.95

Supplier: HISoft,

The Old School, Greenfield, Bedford MK45 5DE

Telephone: 0525 748181

Configuration: All Ataris with 1Mb RAM or more

So far our monthly chats have covered most of the C language, and been entirely devoted to C. Much of this month's column, for a change, will be relevant to all programmers, whatever language you're using and whether you are a beginner or an expert.

You see, over the following months we will be GEMifying Othello, and in the course of this we will add graphics to the program as well as exploring the GEM system as we go.

But this month, by way of laying down some solid foundations, I'd like to say a few words on a subject which should be close to every programmer's heart, but which is often ignored. I'm talking, of course, about the user-interface.

We've all had the experience of using a user-hostile program. A program can be eminently useful – or a game may be based on a wonderful idea – but lack of thought for the end-user can make it unusable.

To take a couple of examples: Back in May 1988, I reviewed, for this esteemed organ, a game called Warlock. Despite being based on a promising idea – the player was an evil warlock, trying to wipe out the good guys who were invading his palace – I was forced to pan the game.

Why? Because it was excruciatingly sluggish, and any potential tension and enjoyment evaporated rapidly.

On a more topical note, the HiSoft C Interpreter has two modes of operation: text editor and interpreter mode. One of the most annoying things about the program, so far as I am concerned, is caused by the lack of a command to convert a text file to an interpreter file and vice versa.

INTRICACIES

Some files will not load in interpreter mode, and editing them so that they will load requires you to save everything in memory onto disk, delete (abandon) it all, switch to text editor mode, load in the file, edit it, save it, press abandon, switch back to interpreter mode and then re-load all of the files you saved a minute ago, by which time you've probably lost track of exactly why you needed to load the file in the first place, assuming that the edited file doesn't require editing again...

My point is simple. In both cases, the programmer became so obsessed with the intricacies of programming that he forgot entirely that people would eventually want to use his code. He started to

Roy Stead on the laws that govern the writing of easy-to-use software



Be user friendly

think like a computer, and didn't stop to think about how people go about thinking, working and playing. In short, the programmer completely forgot about the end-user.

People use computers for wildly varying reasons, but – curiously – we all tend to use them in a very similar way. So similar, in fact, that psychologists – and ergonomists – have come up with some general laws about the way people use computers, and we can use these laws as guidelines when we are designing a program.

One important law might seem rather obvious – the further away from the cursor a thing (say, a button) is, the longer it will take to move the cursor to it. More surprising, perhaps, is that the larger it is, the less time it will take to reach it.

This has profound implications for our screen display. For one, it means that we should place our working area

towards the centre of the screen, so that the whole screen can be reached fairly quickly.

For another, it means that the more commonly-used options should be placed as close to the working area as possible, and close to each other.

Another implication of this formula relates to the sizes of – for example – buttons in a dialogue box. If we want the time taken to reach all the buttons to be roughly the same then we should make buttons which are furthest from the central area larger than those in the middle.

SHORT TERM MEMORY

Another finding which has relevance for the programmer is the capacity of the brain's short-term memory. Print out a list of 50 random numbers and then copy them (by typing them in or writing them down) and count how many times you have to refer back to the list.

You will probably find that you have to refer back to it, on average, about once for every five to nine numbers. Psychologists have named this the magic number seven, plus or minus two, because most people can hold only around seven – plus or minus two – items in their short-term memory at once.

There is an almost-exception to this rule, however, which the same psychologists have named chunking. Chunking refers to the way we humans tend to

lump related things together.

For example, the three characters t, h and e are more easily remembered than q, e and v, because the former triplet can be chunked to make the word "the".

Once a group of items is chunked, it can take up just one "slot" in our short-term memory and so we can remember more things. In fact, this is the way that a lot of those "memory enhancement" methods operate.

The GEM system takes advantage of the magic seven and chunking in the form of the menu bar. Imagine trying to control the Desktop if all of the menu options were visible at the same time, and maybe you can see why related items are chunked together under a single title, and only the title is shown until the menu is selected.

In general, then, a program should

not have more than seven – certainly no more than nine – menu titles. The same rule also applies to the number of options on each menu, a rule which can only be broken by chunking related items – such as text styles in a word-processor – in the menu.

Speaking of the menu bar, have you noticed that the first two menus in the bar are always the Desk –



sometimes headed with the Atari symbol – and the File menus?

The reason for this is to be found in yet another law, which reads:

$$T(n) = T(1) * n - 0.4$$

Where $T(n)$ is the time taken to perform some action on the n th occasion it is performed, and so $T(1)$ is the time taken on the first occasion.

In plain English, this means that the more times the user does something, the faster s/he will be able to do it. But notice that this rule only applies if the thing to be done is always done in the same way.

If the File menu, for example, were to change places with every program then the user would have to start from scratch with every new application.

STICK TO IT!

This is a powerful argument to decide on a screen layout and stick to it. Don't relocate buttons in a dialogue box or change a menu bar without a very good reason. In fact, even with a very good reason, don't do it in any case.

A good example of this can be found in the later – GEM-using – versions of my own shareware program, the Life Microscope, in which all dialogue boxes have essentially the same layout.

However else the contents of the boxes may vary, in all cases there is a title bar across the top and two buttons

– OK and Cancel – in the bottom corners. Toggle buttons are listed below the title bar and other buttons are chunked inside boxes below those toggle buttons.

I even used this technique, in the Life Microscope, to cover keyboard short-cuts within and outside the dialogue boxes.

INCONVENIENCE

Where similar actions were possible, such as when selecting a Life form from the on-line library, the same keys may be used instead of, or as well as, the dialogue box buttons, regardless of the situation in which the user may wish to perform the action. That last comment neatly brings me to yet another one of those laws: Use no modes. If you must use modes, use a few as possible, and go out of your way to try

to inconvenience the end-user as little as possible by their use.

A mode exists in a program when the user cannot access all of the features of the program without performing some intermediate step – such as, in HiSoft C, switching from text editor to interpreter mode.

In that particular case, the use of modes is jarring and – to me, at least – profoundly irritating. I hate to blow my own trumpet again but a nicer usage of modes is to be found, once again, in my Life Microscope program.

In that program, two modes are available, Edit mode and Execute mode. However, the program is so constructed that the user can use all of the features of edit mode while in execute mode, so that switching into Edit mode is purely a choice of convenience on the part of the user (editing a grid is faster in edit mode, because the program is doing nothing else).

Unfortunately, GEM does not provide us with true modeless dialogue boxes, but in the Life Microscope a medium is reached which allows the user to use exactly the same keyboard short-cuts to perform actions, whether she is inside or outside a dialogue box.

In other words, all that can be done in the Life Microscope can be performed without changing modes once, if the user wishes. The use of modes in that program, then, is purely a matter of choice on the part of the user, and that is the way things should be.

The final thing to note about designing the interface between the end user and your program is feedback. Always give feedback to the user.

If the user clicks on a button, flash the button to let the user know that his click

was registered – even if you then immediately switch the colour back again.

If you are involved in a long calculation then let the user know that something is being done. In our Othello program, we display the "Contemplating..." message for just this reason.

Consider the Desktop Format disk option. In that case, feedback is provided in the form of the thermometer which shows how much of the disk has been formatted so far.

Sometimes, something as sophisticated as a thermometer may be impractical, but at the very least you should change the mouse pointer into its "Busy Bee" shape to let the user know that the program is going to be busy for a little while.

RESPONSIVE

A particularly good example is to be found in the Browse Through Library dialogue box in – you've guessed it – the Life Microscope itself. In that dialogue, every change to the current Life form, such as changing its width or height, is immediately reflected on-screen by immediately redrawing the altered Life form.

A particularly bad example of this lack of feedback comes in my Lifetest program, which converts the Life Microscope manual from First Word Plus to plain Ascii format, but provides no feedback at all.

But remember that feedback too long delayed can be as bad as no feedback at all – witness the sluggishness of the Warlock game I mentioned earlier.

● Next month we will be turning in earnest to programming GEM in C but, to whet your appetite, the CoverDisk contains a small update to our Othello source code which allows it to now use alert boxes.

Getting to grips with C

Did you miss out on a free copy of HiSoft C, given away with the April issue of Atari ST User?

Or maybe you missed one or more parts to this guide to programming in C?

If so you can still get hold of back issues by telephoning your credit card details to 051-357 1275.

Alternatively, send £3.50 for each issue required. Cheques/Eurocheques should be made payable to Europress Direct and sent to Freepost, Ellesmere Port, South Wirral L65 3EB.

Please state clearly which issue/s you require.

Turn to page 92 for some great C offers

'Scuse me while I kiss the sky

GAMER



ANCIENT ART OF WAR IN THE SKIES



REVIEWS... D-Day ● Scrabble ● One Step Beyond **Previewed:** Kingmaker, Global Gladiators and Apocalypse...

ALSO... All the latest game news from the ST world ● A round-up of the newest budgets ● Reach for the Skies Cheat Mode

Gamer GLOBE

All the latest news and previews from the brisk and bubbly world of ST gaming

Titus in the fast lane

Cast your minds back to last year and you'll remember the abundance of car racing games. One which shone like a bright light out of an otherwise pretty dull pack was *Crazy Cars 3* from Titus.

Crazy Cars 3 was a firm office fave, but it did lack a two-player mode. Well that is that is now being put to rights with Titus' next release, *Lamborghini American Challenge*.

Titus own the exclusive rights to the Lamborghini licence and to cut a long story short have rewritten *Crazy Cars 3* and improved it ten-fold including the much wanted two-player mode.

This time you are at the wheel of a fabbed Lamborghini Diablo as you speed through the crazy world of *Saturday Night Races*. The tournament is composed of illegal races across six routes of American highways.

There are plenty of features in *Lamborghini* such as the ability to buy options for your car like turbo boosts and radar detectors. The competition is tough – not only are the police out to nick you, but each race includes 20 artificially intelligent competitors.

Lamborghini American Challenge is looking good and will cost you £25.99 when it arrives at your local computer game emporium in early October.



Boom Time!

Last year there was a game called *Nicky Boom*, and despite the ridiculous title, it was quite good. Indeed, Paul Roundell (ex-Gamer ed) fell in love with it and they got married, living happily ever after.

Well, it's time he got a divorce because news of *Nicky Boom 2* has just arrived in the *Gamer* office. At the end of the first game peace had returned to the quiet woods. Well peace has ended and brothers in arms evil and danger are back.

Nicky, the star of this addictive little platform game, must once more make his way through the world until his objective of peace throughout the land is achieved.

The game itself includes four graphic worlds of forest, jungle, volcano and cloud. There is also more animation, more puzzles and more traps than there was in the original. *Nicky Boom 2* will cost you £25.99 and is to be planned for release on August 26. You can read a delightful review of it next month. There's precision for you!



'Scuse me while I kiss the sky

MicroProse are back in the skies with yet another couple of flight sims. The first is a flight sim with a difference. MicroProse have been tinkering around in their sheds and come up with a game of air to air combat, or dog fighting as it is more commonly known.

It is called *Dogfight* (hey, no surprise there) and the player will be able to select from 12 different aeroplanes, ranging from your good old Sopwith

Camel through to modern day fighter jets such as the F-16A Fighting Falcon.

Whichever you choose you will be able to duel with enemy aircraft from the same era. Alternatively you can choose any aeroplane from any era to battle it out.

This will enable you to form some pretty good dogfights. For example you could have the agility of early World War planes such as the Spitfire against the high technology of the modern jets such as a Harrier.

Dogfight is not only a dog fighting flight sim, it also gives the opportunity to fly realistic missions. Missions include defending the skies from the infamous Red Baron or protecting the Falklands from the Argentinian air force. Those of you who fancy a flight



sim game, but are completely useless at them, will take pleasure in the fact that *Dogfight* has been designed with the beginner in mind enabling those lesser flight buffs to enjoy the game within minutes of loading.

Dogfight will be released around Christmas time and at the time of going to press prices and exact dates are yet to be confirmed. My only advice is for you to keep watching the skies because MicroProse are out to prove that they are the flight sim kings.

Also to be expected for Christmas is *Gunship 2000*, the critically-acclaimed helicopter simulator which has been a massive hit on both the Amiga and the PC.

Details are very thin on the ground at the moment, but hopefully we'll have much more information in the next couple of months, so keep tuned to *Gamer*.



Tensai to the dozen...

Grandslam are out and about on the ST scene once more with a brand new piece of software due for release within the next couple of months.

Tensai is a platform/beat-'em-up/arcade adventure and features Tensai the hero of the game battling against the evil tyrant Arashi.

The game features stylish graphics set in a post-apocalyptic landscape and beautifully animated characters and monsters. There are plenty of logical puzzles to solve while admiring the realistic sampled sound effects and the scrolling parallax backdrops. Tensai's features include an extremely large play area divided into distinct sections, hidden secrets and sections to discover and quality animated sequences. The hero himself is highly manoeuvrable and has various weapons to use including magic known as The Power.

The ST hasn't really been used to its full potential so far with this type of game, but Tensai looks more than a bit special and you can look forward to a preview/review fairly soon.



Ocean's big football frolics

It's all quiet on the football front at the moment, but there's going to be an explosion of games later on in the year thanks to Ocean. There are two products currently being worked on, but both are going to be uniquely linked.

European Champions is a skillful arcade action game putting the teams from the Premier divisions of each major European country against each other.

The other game is called Super League Manager, and apparently offers a real test of the budding football manager's skill in guiding this team to the top aiming for the crown of Super League Champions.

For those of you who buy both products, Ocean have devised a clever link between the two. Simon Ally (Top Ocean PR type bloke) commented:

"As the two products developed side by side, the soccer addicts here in Manchester suggested extra features. We thought it was a great 'added value' opportunity and built it into the products."

As yet details are still forthcoming, but hopefully we should be able to give you more info and even a couple of shots from both games very soon. European Champions and Super League Manager will be available in September.

Hulk Hogan Commando

After the phenomenal success of Dr Who - Dalek Attack, Alternative Software are to return once more with the only game billed as a four level platform/shoot-'em/beat-'em/wrestle-'em/grapple-'em/slide-tackle-'em-up!

The words wrestle and grapple cunningly hidden in that last sentence should give you a good enough idea of who the game features. Yep, it's Hulk Hogan. The game? Suburban Commando.

It is of course based on the hit movie of the same name and is described as a fast action game with three difficulty levels, stacks of power ups, a host of enemies and animated moves from The Hulkster.

Shep Ramsey (Hulk Hogan's character in the film/game) despite having the westest name in film/game history can do a number of moves from a sliding kick to a jet boot propellant move, whatever that is.

The game promises to remain faithful to the plot of the film. Suburban Commando should arrive in late September and promises to be great fun. The retail price is yet to be finalised, but will probably be £19.99.

However, there are also plans to include a VHS copy of the actual film with each copy of the game. This is still in the planning stages and we'll know for definite when the game arrives in a couple of months.



INNARDS

"Here they come, walking down the street. Get the funniest looks from everyone they meet. Hey hey it's..."

REVIEWS-REVIEWS-REVIEWS

ANCIENT ART OF WAR IN THE SKIES....66

Our reviewer straps on his goggles, inspects his propeller and checks out MicroProse's World War I action/strategy simulator

D-DAY.....68

War! What is it good for? Well, it's obviously good for US Gold because D-Day is a game about war and it's showing at a few pages from now...

SCRABBLE.....70

Bored? Well, why not try your luck at US Gold's very own conversion of the wordy board game that sold millions?

ONE STEP BEYOND.....72

Something smells very cheesy and it's not Simon's feet. It is of course Curly Colin starring in Ocean's latest platform/puzzle-'em-up...

REGULARS-REGULARS-REGULARS

DRAWING BOARD 1: GLOBAL GLADIATORS74

McDonalds get their corporate fists into the ST games world, but don't worry because Virgin's latest platformer is not 'alf bad

DRAWING BOARD 2: APOCALYPSE75

It's been a long time coming, but Virgin are proud to announce the arrival of the greatest 'Nam shoot-'em-up ever...

DRAWING BOARD 3: KINGMAKER76

The classic 1974 board game reaches the ST. Yes, I haven't heard of it either, but it's the War of the Roses and it's coming very soon indeed

CHEAP SEATS78

Mr Budget himself, Simon Clays, searches out some bargain games at some bargain prices. Join him in the cheapest seats possible in a few pages time...

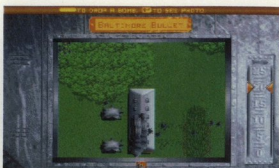
CHEAT MODE: REACH FOR THE SKIES.....80

Rod Hyde, all-round good bloke and game creating genius, gives you flight fans some helpful hints and tips for his classic Reach for the Skies



You're going to have to go up there in one of these heaps. Feeling nervous?

Bombing raids? I've done more bombing raids than you've had hot lunches. Didn't hit much though



THE ANCIENT ART of WAR IN THE SKIES

**Play the General
in MicroProse's
latest, which
combines strategy
and aerial action**

After putting four hardback biscuits in a dishcloth, pound on them with a shovel handle until smashed. Soak in water until soggy. Add one tin of Tommy Ticker's Plum and Apple jam. Stir well over a hot flame. When the bottom burns, serve with four teaspoons of condensed milk.

No, you haven't accidentally picked up Delia Smith's latest book of culinary delights. That is in fact a recipe for Trench Pudding, and very delightful it sounds too. Where did I obtain that fascinating information? From the AAOWITS manual, of course.

Long have MicroProse manuals contained background information, but this one really takes the biscuit (oh dear - Ed). There's an absolute wealth of background information here.

However, far from

being a simulation of Delia's prowess in the department of preparing comestibles, and perhaps inevitably considering the title, AAOWITS is a simulation of aerial combat and tactics.

You know how some people have a sort of knack for putting their finger on things? Sun Tzu was obviously one of these people. He wrote a book on military strategy about 2,500 years ago, and the ideas it contained were so good that the principles are still adhered to today. MicroProse have taken these ideas and incorporated them into AAOWITS.

And so we find ourselves transported back to the days when men were men, chaps referred to other chaps as "chaps", and we were at war with the bally Hun. Imagine the feeling - up there at a thousand feet, skilfully putting your bucket of bolts through its paces, hero of

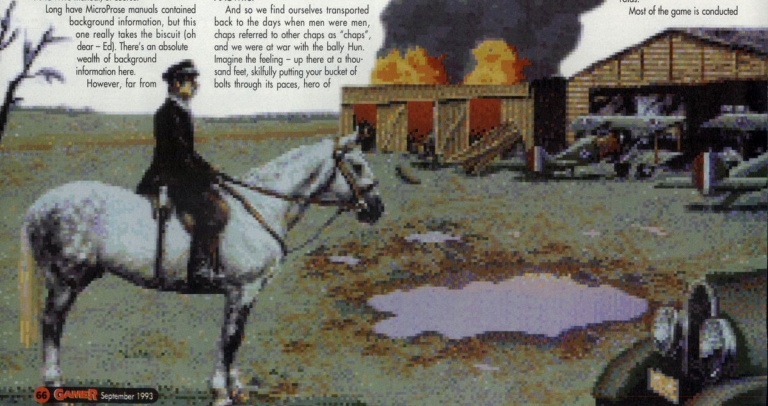
thousands of unfortunate soldiers in the trenches below... a pilot full of honour, bravery and derring-do.

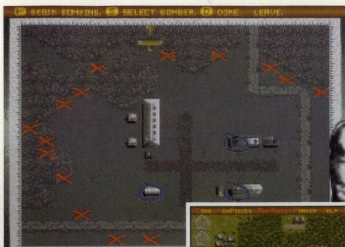
Or maybe you'd rather be cruising nervously over enemy bases, dropping bombs with pinpoint accuracy. Or if you prefer, you could be a

cigar-smoking general in some luxurious chateau safely behind Allied lines. In AAOWITS, you could even be all three.

Ancient Art is billed as a strategy and action game, since it allows you not only to plan your attacks, but also to fly the planes involved in either dogfight situations or bombing raids.

Most of the game is conducted





You use this strategic photograph to plan bombing raids

from the map screen and your actions are controlled through a combination of mouse, keyboard and joystick commands.

From your bases behind allied lines, you can send planes out on bombing raids or to attack enemy aircraft. You can set things such as their altitude, cruising speed, and formation if there's more than one aircraft flying on the mission.

It is also possible to set the exact course they will follow to their destination, which is particularly useful if there's a major obstruction in the way such as a mountain range or enemy fortification.

You'll be alerted when a dogfight or bombing run is about to take place, at which point you can choose to take the role of the pilot concerned.

In the case of the dogfight, the screen changes to a side-on view of your plane, and you must attempt to shoot down the enemy without crashing or being shot down yourself.

This is quite straightforward in the majority of cases, but in more advanced scenarios you can find yourself facing aerial aces of the same calibre as the infamous Manfred Von Richtofen, who during the course of the war shot down no less than 80 Allied planes.



When a bomber bites the dust it's always a very sad moment. AA likes to rub it in by confronting you with a whopping great skull

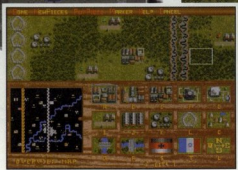


This is the dogfight sequence - interesting, but not to be confused with a simulator



Here's one that'll excite the strategists among you. Control yourselves, there may be women and children present

If you get bored of the built-in campaigns, design your own. At least this way you can design a campaign you're able to complete



Bombing in itself is relatively straightforward, but hitting the target isn't always so easy. Your limited supply of bombs could run out before you hit the target if you're not careful. Sometimes you will come under fire from enemy forces.

In addition to challenging the likes of Baron Von Richtofen and Kaiser Wilhelm II, you can also pit your wits against such famous figures as Lord Kitchener, Ferdinand Foch, or even Sun Tzu himself. If you don't know the slightest thing about any of them,

the manual provides a brief outline and advice on dealing with them.

Character profiles are not the only thing the manual provides, though. Sizeable tome that it is, it will instruct you in the many aspects of aerial warfare in a helpful and understandable form.

The graphics are good enough for a game of this type, with the dogfight views of the planes done especially well. Sound is functional but unspectacular.

In the long term, there's plenty of challenge there, because not only are there solutions of campaigns provided but you can also create your own scenarios. In this way the game can be tailored to suit exactly your personal preferences.

If you don't appreciate the strategy element, however, you may soon become bored of the action sequences, because while these work well as part of the game as a whole, they shouldn't be looked upon as simulators



Interesting maps number 27: France and Belgium. I once went to Belgium, you know. It's all very flat

in their own right. If it's a simulator you want, you should be looking at some of MicroProse's other masterpieces.

AAOWTS comes on four disks, and playing from floppy disk involves heavy amounts of accessing and swapping to the point of being almost unplayable at times.

Every time you go into the dogfight or bombing sequences, there's a disk swap and lengthy access before the action begins, and then afterwards the same to get back to the map screen.

At times you have to restrain yourself from attempting to thump your ST. Fortunately, the game is hard drive installable, so if you're lucky enough to have one you'll enjoy it a lot more.

If it's accomplished, well polished and presented, and I'm sure it'll be very popular among strategy fans. It's a far better product than, say, D-Day (reviewed elsewhere this issue) because everything is for superintended and executed.

On that note, I think I'll return to the war zone - there's a German line needs bombing. And of course, I couldn't possibly write a whole two-page review without saying at least once "tally-ho, chocs away, and let's show the bally Hun what for". Sorry.

DAVE CUSICK

| | |
|---|------------|
| VISION | |
| GGGGGG | ●●●●●● |
| AUDIO | |
| GGGG | ●●●●●● |
| DIFFICULTY | |
| GGGGGGGG | ●●●●●● |
| LASTABILITY | |
| GGGGGGGG | ●●●●●● |
| A well-designed product that will certainly appeal to gamers who like to use their brains as well as their trigger fingers. | 80% |
| Publisher > MicroProse | |
| Developer > Eyrwyare | |
| Disks > 4 | |
| Price > £34.99 | |
| HD Install > Yes | |
| Size > 1 meg | |

I seems that recently there have been a real spate of war games in one form or another, particularly WW2 games. Perhaps it reflects the society that we live in, a real melange of respect for traditional values, and today's violent, irresponsible, self-centred individuals with low moral values. Or perhaps it's just that games designers are finding original concepts in somewhat short supply.

Not that the blokes at Loriciel don't respect the terrific war effort made by millions of men and women. No sirree, these chappies aren't sickos, people with no hearts and a desire only to make money for themselves at the expense of all other people.

In fact, there's a note at the start of the manual saying, "War is not a game, this game is not war. The Loriciel team have great respect for all the men and women who gave their lives to liberate Europe and does not attempt, through this game, to imitate or simulate reality neither in its sadness or in its heroism."

Noble sentiments indeed. Anyway, D-Day is the latest such game to tumble gently through the letterbox here at Gamer Towers and is very much in the strategy mould.

After eagerly tearing the wrapping from the box, I must confess I was slightly less than overjoyed to cast my eyes on another example of a somewhat overused genre. I really believe that there isn't much new that can be accomplished in the way of devising slick interfaces and depth of gameplay.

In addition to this, being a veteran of the most appalling experience known to man - the school French exchange - I couldn't cope with the concept of helping the French anyway. Not that I'm being anti-European or anything, it's just that the memories are just so traumatic it's beyond belief.

My "pen-friend" (and I use the phrase in its loosest sense) had a brother who one day made a cup of tea for me using luke-warm tap-water. And I'm supposed to feel sympathy for the French when their country is invaded?

Still, dutifully I stuck the game into the drive and waited patiently to be proved wrong. The intro sequence didn't change my mind a great deal. The droning plane passing overhead and some tedious music warbling away in the background just added to my misapprehensions.

The game contains quite a variety of features, which I will explain. Basically, D-Day offers you the chance of not only planning the Allied liberation of France, but also executing it.

You can fly bombing missions in a trusty

The newspapers seem to be a bit short on headlines. Every single time you enter a battle they stick "Invasion" all over the front page. I think they need some new headline writers



Deciding where to strike first can be a difficult task, but it must be thought about carefully if you're to succeed

D-DAY

It is a dark time for the Alliance, so in desperation they've offered you the chance to bomb French villages. Sounds like fun, eh?

B17, guide daring paratroopers to the ground safely, control Sherman tanks in the heat of battle, or lead infantry units against the armoured might of enemy-occupied settlements.

You can select whether you want to practice any one of the four simulations, or dive straight in with the full scale battle.

It is a good idea to practice first, since each of the simulations has its own special techniques which are needed to succeed. If

you opt for the latter, you'll be presented with a map of the coast of northern France, and from here you must select a target for attack.

The attack itself tends to consist of a bombing raid to neutralise various enemy fortifications, followed by landing your paratroopers and taking the village with them.

Each of the simulations is controlled via a combination of keyboard, joystick and mouse. In the tank, paratroop and infantry simulations, there are various icons at the bottom of the screen which select different features and modes.

The paratroop simulation is the easiest to master. It simply entails guiding your men left or right and trying to land at least one without being shot down. The infantry

section is also quite easy to master, although the missions can be quite difficult. The control method - click on a soldier, click on where you want them to go to - is simple enough, although in the heat of battle you may curse it for not being fast enough to respond.

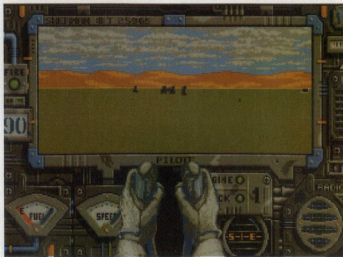
The tank section is quite hard to get the hang of. You can pilot the tank, act as gunner, or control several tanks at once via the map screen. While obviously not as advanced as a dedicated tank simulator (such as Empire's Campaign) it is fairly comprehensive and realistic.

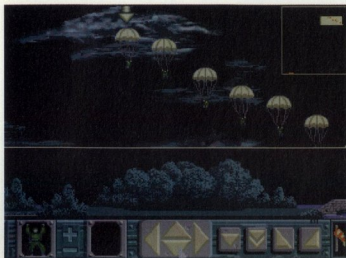
The bomber section is somewhat disappointing, in all honesty. The controls are basic left and right, throttle up and down,

It's dark, and in bombing



The tank sim isn't really bristling with excitement. In fact it's remarkably bad





While I appreciate that parachuting is probably a thrilling and exhilarating pastime when experienced first-hand, I found the computer version utterly dull

and drop bombs, and you see your plane flying overhead. While this highly simplified approach would work if the simulation were fast and playable, it can't really be described as either.

There was only one way I managed to obtain fun from this part of the game, and it was through being cunning. You see, I was playing this game the day before the Woodford Air Show, which takes place only a few hundred yards away from *Gamer Towers*.

Throughout the day planes were flying overhead. While this highly simplified approach would work if the simulation were fast and playable, it can't really be described as either.

By turning up the volume on D-Day's bomber sim, I managed to fool them several times into thinking there were planes passing overhead. And if you think that's a sad way to pass the time, perhaps you'll appreciate how tedious D-Day can be.

Perhaps the game's biggest flaw is that the player doesn't feel like he's playing one game, but merely several rather poor sub-games.

To be honest, each of the four sub-games has been done better elsewhere, with the exception of the paratroop section which hasn't been done elsewhere simply because it's a completely rubbish idea for a computer game.

If you wanted a tank game, Campaign would be the obvious choice. If you wanted a bombing sim, many of the MicroProse releases

would fit the bill. If you wanted an infantry simulation, many of the Impressions releases would suit you better.

Another interesting feature is the translation. D-Day was written by French programming team Futura, and in parts this shows. The copy protection asks "Is the code 5 of the page 4 QGTP", or something similar.

The intro sequence is completely in French, rambling on about "Les langues" I think. This sort of thing really shouldn't be present in a game released by such a big company as US Gold in the English computer game market.

Graphically, it does feature digitised pictures on the mission briefing screens and before the mission, but the in-game graphics aren't spectacular. The sound is uninspired.

While the game is unique (at least to my knowledge) in that it combines the gaming styles, none of the four stands out as being particularly good. From the point of view of commanding the entire Allied effort, D-Day could, I suppose, appeal to some people. But not me.

DAVE CUSICK

Controlling the infantry is reasonably simple and straightforward - just not very interesting

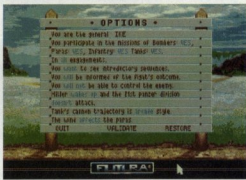


The battle is over, so give yourself a pat on the back and saunter off down the pub to claim your just reward



Because the bombing raids are all carried out at night, the graphics don't get any more exciting than a couple of houses, a few trees, and the bridge you're supposed to be hitting

The default name for yourself is Ike. Obviously after his previous career making records with Tina Turner fell through, he thought a new direction was in order

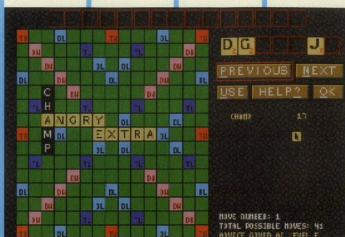


Quand je compris que les francais ont un petit probleme, je ne vois pas pourquoi je dois li aider. Et pour les individuelles qui sont tres bete, je regrette que ce caption est tous en Francais

| | |
|---|--------|
| VISION | |
| GGGGGG | ○○○○○○ |
| AUDIO | |
| GGGG | ○○○○ |
| DIFFICULTY | |
| GGGGGGGG | ○○○○○○ |
| LASTABILITY | |
| GGGGGG | ○○○○○○ |
| Not quite a pile of festering rubbish in a bag, but not far off. I suspect very few people will manage not to turn off in boredom after half an hour at this. | 56% |
| Publisher > US Gold | |
| Developer > Futura/Loricel | |
| Disks > 4 | |
| Price > \$24.99 | |
| HD Install > No | |
| Size > 1 meg | |



The computer plays like my sister, in that it makes up words and decides to let itself get away with it. Who's ever heard of such words as Calea, Cuing, Bundu, Boily and Woon?



The main game screen is simple and uncluttered. The board is set out just like the original

SCRABBLE

There was an immortal scene in *The Tall Guy* in which Jeff Goldblum and Emma Thompson stood alone in Thompson's shabby flat in the early afternoon.

"Two people, alone, in the middle of the afternoon," murmured Thompson. "Yes," replied Goldblum, "ideal conditions for Scrabble."

Needless to say, they got up to a good deal more than Scrabble that afternoon, but that's not the point. The game has proved fascinating to many people, although quite why I'm not exactly sure.

It's been around in this country since 1954, the manual says, and over 35 million copies have been sold in more than 90 countries since its launch.

The basic objective is to create words from your seven random letters and place them on the board so as to score as many points as possible. Certain squares on the board double or triple the amount of points scored.

I must admit I was sceptical when presented with Scrabble. When the game has already proved so popular in its original form, why convert it to a less portable and far more expensive computer format?

Well, I suppose the computer could at least settle disputes over allowable words. In addition, it provides an opponent of adjustable ability to challenge lonely Scrabble players with nobody to play against.

Boards can also be printed out for posterity, if you want, for example, to adorn your

A captivating quasi-expressional diversion, or an abominable and ineffective copy of its table-based progenitor?

walls with poster-sized Scrabble boards.

The game is controlled via the mouse, and during play the screen is composed simply of a board on the left-hand side and your letters and a few options to click on down the right-hand side.

When it's your turn, you can click on letters and they'll appear at the top of the screen. Here you can rearrange them and when you've got a word you think will score well, select whether the word will read across or down, and drag this to the position on the board where you want to place it.

If you're stumped as to what moves you could possibly make with your selection of letters, there's a built-in help mode which makes suggestions to you. The dictionary runs to over 134,000 words, as listed in the Chambers Official Scrabble Words book.

It can be set up to suggest anything from



The word you're in the process of making is shown at the top of the screen. From here you drag it onto the board

really basic low-scoring words to whopping great killer-moves. Apparently the record word score in Scrabble competitions is held by Dr Karl Khoshnaw of Manchester, who scored 392 points for "Caziques" (which is the plural for a West Indian chief). Whether the help-mode could offer moves quite like that I don't know, but it's still very useful.

Scrabble fans might be disappointed that a player's letters are displayed on-screen for all to see, although I really can't see any way of avoiding this. When it's another player's turn they do disappear again.

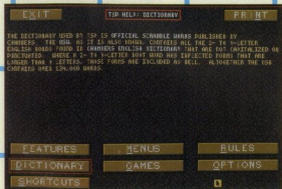
Graphically the game is about as exciting as Scrabble ever could be - that is to say, not very - and the sound consists of an irritating tune and not a lot else. However, this is excusable in a game of this type, since the emphasis is purely on making the gameplay as good as possible.

What else is there to say? Scrabble is Scrabble, and the computer version is a perfectly competent attempt at converting the game to a new media.

The problem is that traditionalists will prefer the board game version anyway, and many people won't want to shell out £25 in these financially bleak times, when they could buy the original for a fiver.

The only disappointment for me is that in the computer version you can't cheat and swap your letters for more useful ones when the other players aren't looking.

DAVID CAUSIC



The game has built-in help screens so that even the first-time player won't feel lost

VISION

○○○○○○○

AUDIO

GGGGG

DIFFICULTY

GGGGGGG

LASTABILITY

GGGGGGGG

A good conversion, but I can't see it appealing to all that many people. It deserves more success than it's likely to get, because it's a very involving and brain-taxing game. As close to the real thing as it could be.

80%

Publisher > US Gold
Developer > In-house
Disks > 1
Price > \$25.99
HD Install > Yes
Size > 1/2 meg

WATCH OUT IT TASTES CURLY!

STA BRINGS YOU CLEAR, CONCISE ST REVIEWS!

In this issue: Ancient Art of War in the Skies, Beast Lord, Patrician, D-Day, Nicky 2 and One Step Beyond featuring Colin Curly.

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Also Issue 7 of Freestyle! ST Action's very own Mag-on-a-disk - packed full of interesting facts, features and more than a little fun for all the family to enjoy.



**FREE!
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ST ACTION ON SALE NOW!

You get to see some odd things as part of the gamer posse. For one, there are some strange folk who haunt the corridors of STU Towers. As I peer over the top of my terminal the sight that greets the eye is disturbing to say the least.

However that wasn't really what I was getting at. When I said odd, I was referring to the weird and wonderful world of computer software.

Over the brief, but manic history of the home computer, there have been some bizarre heroes and heroines to maraud the monitor.

We've had just about every type of small furry animal to inhabit our ball of rock make an appearance on the small screen. They've come in all shapes and sizes, wearing all manner of strange attire and possessing all kinds of personalities.

Now, from time to time a character sheepishly ambles in under licence from movieland or comic world. Fair enough, if the conversion carries it off.

So, when a dog who wears a bright yellow suit and matching Cromby turns up on your desk you don't pay it too much attention, passing it off as yet another extra from toon town.

But, when you suddenly reel back in horror and are heard to exclaim: "Blimey, that's the geezer off the crisp advert... that curly bloke!" I have to say it comes as a bit of a shock.

BRAINCHILD

Seeing some silly advert, the brainchild of some crummy marketing department, getting to become a computer hero, well the mind boggles. Think of the implications if this trend were to succeed.

Maybe all the major savoury snack manufacturers would attempt to convert their crispy characters. I can see it now - Attack of the Outer Spacers, or the Monster Munch from the Black Lagoon.

But, by far the worst implication of this new move would be if it spreads into other forms of advertising. Could you honestly bear it, playing a graphic adventure which featured Danny Baker?

I have this frightening vision of controlling this little fat cockney, pushing him from house to house quizzing housewives about this spurious white powder which



Our hero-type hound takes time to admire a very pleasant Laura Ashley backdrop



As an advertising star, Colin's on a packet...of crisps!

ONE STEP BEYOND

He's crispy, he's curly, he's Ocean's latest doggy paddler... here's Colin!

will resolve Danny's quest for whiter than whiteness. Guide him with stealth through the aisles of danger in Tesco's, only to face the wrath of Mrs Scroggins, her buggy and the interbred twins from Hell.

Use your guile and get her to swap her two for your one. All the time your only defence is your trusty king size Mars, which is now even better value.

Or, maybe our Danny could become some psycho in an all action hack-'em-up. See him romp through screens, causing mayhem with his trusty 65g bar.

Watch as he slashes wildly at those sickly lovers on the Nescafe ads. Gasp as he sprays Daz all over the smiley couple on the gum advert. Listen to the sampled speech as they gurgle to an early grave to cries of "But, you've been eating onions!".

Ahem. Back to the present and away

from the grim Orwellian picture of the future - let's meet Colin! Colin is the canine crazy who goes ape for Quavers. This isn't Col's first venture into gameland. His first break into stardom came when he had a bit part in another Ocean release called Pushover. Now, the dog who's satiated by salt 'n' vinegar and popalates at prawn cocktail is back in a doggy tale of his own.

Picture the scene. It's a starry night.

The moon beams down into Colin's bedroom, but he is oblivious. This is because he is engrossed in his computer, eating his favourite snack - you've guessed it, Quavers, playing his favourite piece of software - you've guessed it, Pushover.

Anyway, before you can say "man's best friend", Col gets mysteriously sucked into his monitor. Once inside Mr. Curly discovers yet another packet of savoury delights, and dutifully jumps in.

That being the plot, I have to inform you that the play has very little to do with anything remotely connected to it. In fact the only connection is, rather strangely, those bloody cheesy Quavers. I wonder if this is a game or an excuse to advertise?

That aside, the basic objective is to guide Colin from one packet of Quavers to another. This is achieved by moving your hungry hound through a series of



This screen is so boring that if I was Col I'd be off to find Lassie



Jump from ledge to ledge doggy-style, while admiring the wallpaper

platforms until he reaches his ultimate goal – a second packet of those savoury morsels.

When our pedigree chum reaches the said packet, he morphs into a state of absolute euphoria and goes curlier than an American rock star's perm. The net result is to earn points from successfully completing levels. Once achieved, Colin can go forth into deep fried ecstasy and munch through the subtly named Quaver zone.

However, getting to Winalot is a lot easier said than done. This is because Step Beyond is nothing like any conventional platformer. Instead its screens are constructed like a series of ledges.

Each ledge, once jumped on closes itself. The general idea is to close all the ledges which Col has jumped over until the last remaining ledge is his cheesy destination.

QUAVERDOM

Still, things sound fairly straightforward, so to complicate matters, on many of the screens there are things like a numerical order you must follow to ensure Quaverdom.

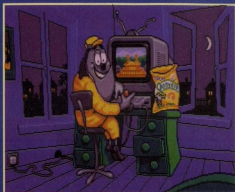
There are also various speciality ledges which have specific features. These include such tasty treats as ledges that bounce our Col from one destination to another, ledges that open others and some that open and shut for short periods of time.

Add the fact that it's all against the clock and there you have it. Step Beyond is basically a logic puzzler. All the levels have only one method of completion so it's a case of trial and error against the ticker.

The main problem with this type of title is that there's very little variety to the play. Aside different pretty backdrops each level makes you feel like you've had a bad case of the old *déjà vu*. Also, because it's a logic puzzler, once you've completed a level there's absolutely no point ever looking at it again.

Another annoying little quirk of Step Beyond occurs when Col freaks out and goes curly at the level end. Having puz-

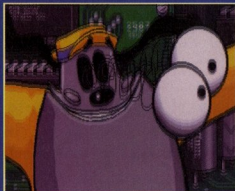
The cheesy, doggy tail so far



An unsuspecting Colin sits in his room twiddling his joystick in the moonlight - as you do



Doggone, Colin gets sucked into his monitor and everything goes well weird, man



Is it the sight of his favourite savoury that affects Colin? Or is he off his bonce on hard drugs?



Colin falls straight into a very obvious marketing play... and the play begins

zled through to Quaversville, Col begins his curfiness, however the clock continues.

So, if you've cut it fine you'll find that the clock will beat you and you're faced with the same stage again.

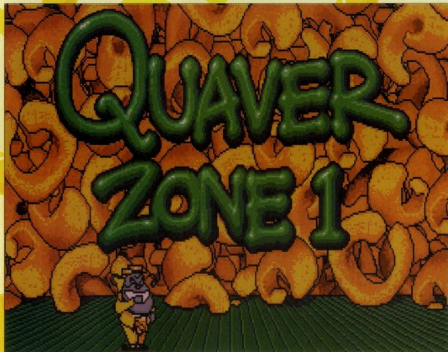
Overall, I have to say that One Step Beyond isn't up to much. Its poor control

system and repetitive screens will bore you long before you get near to finishing it. The sounds poor and the animation's nothing to howl about.

While I like Quavers, it has to be said that the whole idea is cheesier than the crisps themselves. I really think that Colin

has eaten too many of his favourite savouries and he has, metaphorically speaking, fouled the pavement this time.

SIMON CLAYS



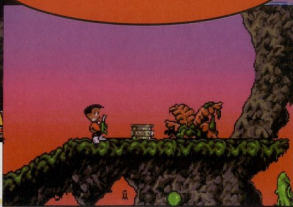
With a cheesy grin Colin reaches his own Utopia. Or is it just a scandalous advertising ploy to sell more snacks?

| | |
|---|------------|
| VISION | ●●●●●●●● |
| AUDIO | ●●●●●●●● |
| DIFFICULTY | ●●●●●●●● |
| LASTABILITY | ●●●●●●●● |
| As far as I can make out the whole game seems like one great big PR exercise for Quavers. I think they should have spent more time on the play and less on brainwashing advertising. Extremely cheesy and you'd have to be a proper prawn cocktail to buy it. | 48% |
| Publisher > Ocean Developer > In house Disks > 2 Price > \$25.99 HD Install > No Size > 1 meg | |

ON THE Drawingboard



Mick discovers the wonders of the invisible platform...



The game isn't out yet and already it looks like Mack is going to get the axe!

GLOBAL GLADIATORS

I personally think that the cutesy platform game market is now saturated and looking rather dated, but I could well be proved wrong by Virgin Games and their hottest platformer yet, Global Gladiators.

Now don't take this the wrong way, I like a good cutesy platformer more than anybody, but what happened to big heroes with big muscles and big guns? The violent game now seems to be few and far between.

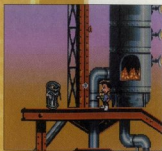
Computer game and TV violence is now a major talking point in the tabloid press and they sensationalise and hype everything up. This is down to the fact that computers are so very popular.

A few years back, kids were going ape over Smash TV, an out-and-out kill-'em-up, and no-one batted an eyelid. Another instance is when Moonstone came out almost two years ago, a game which - let's be honest - contained more blood than your average abattoir. Everyone I know went absolutely mad and fell in love with the damn game.

Out of all those people I know not one who has turned into a mass murderer. In fact, Moonstone actually raised a few laughs and smiles instead of looks of horror and distaste.

But the cutesy game has now taken over from the violent game in popularity stakes and if it is done well the product will sell like the proverbial hot cakes.

Sonic the Hedgehog, Mario, Bub and Bob, Zool, James Pond and Superfrog are merely a handful of examples taken from the pool of



One of the Global Gladiators takes out the trash with his goo-shooter while messing about in Taxi-town!

Cutesy games! Love 'em or hate 'em, they're here to stay. Virgin delve into the cutesy games world while Jonathan Maddock dreams about death, blood and violence...



Hoorah, it's Ronald McDonald. Mack receives a McDogburger for his achievements

cutesy software currently available today.

A lot of platformers have a cutesy character in them and then the software company try to sell them with that character simply because the actual game is just a bog standard platformer. Virgin's Global Gladiators is here to redress the balance by having two superb cutesy heroes and the gameplay to match.

Mick and Mack are two cool kids with one goal which is to rid the planet of all the rubbish, slime and filth. Yep, it's eco-friendly and apparently according to the press release they are the "solution to pollution absolutism".

The game is actually titled McDonald's Global Gladiators, but it doesn't really have that much to do with the multi-national burger joint apart from a guest star appearance from Ronald and the McDonald "M" splashed throughout it. Don't let the McDonald's spon-

sorship put you off buying the game, either, because Global Gladiators is going to be absolutely massive.

I saw it about six months ago on the Sega Mega Drive and it looked brilliant. It wasn't going to be released on the ST at first, but Virgin decided that it was so good that it should be released on all the other formats.

Mick and Mack armed with their Goo-Shooters have to tackle four fearsome levels - Slime World, Mystical Forest, Taxi-Town and Arctic World. To complete the level you have to collect as many arches (McDonald's "M"s) as possible while doing away with nasty monsters such as Slime Pigs, Yuckmouths and Splatter Bats.

Global Gladiators features two heroes, but alas they can't both be used at the same time. Both characters are the same except they have different coloured skin. This makes GG the world's first game that makes racial har-

mony a prominent feature.

You could argue that it still isn't quite politically correct because it is sexist in the fact that they aren't any women or girls, but these would be pretty dull and boring if they were all politically correct. So, in the meantime, racial harmony will just have to do.

The graphics are just awesome and apart from the parallax scrolling the ST version of Global Gladiators is identical to that on the Mega Drive. Mick and Mack feature 1,250 frames of animation as they run, jump, spin, spring, twist, shoot and blow gum.

The music and sound effects are also on a par with the Mega Drive. The tunes range from dance to techno and most of them are good little numbers which you'll find yourself whistling to.

There are loads of sampled sound effects from Mick shouting "awesome" to various squishes, splats, lings, bings and drings. The game not only looks like a dream, but also plays like one and contains humour, fun and excitement for the whole family.

Global Gladiators will be released later this month for the recommended retail price of £30.99. Mick and Mack are the computer game equivalent of Bill and Ted. They're way awesome oppositely and with a bit of good marketing are going to take the world by storm this summer.

I like cutesy platform games, don't you mate? Certainly do mate they're platform-tastic in a cutesy kinda way. Not 'arf.



Now for those you out there who have looked at the title of this game and thought "hmm that sounds familiar". Well, for those of you are old enough to remember, Apocalypse was originally going to be produced and marketed by Mirrosoft.

Well, of course I don't need to tell you any more because you will already know that Mirrosoft were once part of the Mirror Group.

You will also in-turn know that the Mirror Group was run and owned by Robert Maxwell who impressed us all with his wisest (hmm) treble pike into the ocean off his luxurious yacht.

This turn of events eventually brought down the axe on Mirrosoft and also on their forthcoming releases including one of the biggest and most hyped games ever, Apocalypse.

Now one day an employee at Virgin Games was looking through some "whatever happened to..." files and up popped Apocalypse. Being astute business types, Virgin promptly snapped it up. Hands were shaken and there were smiles all round.

Apocalypse is almost here. The game will be released this summer and it is, in my humble but ever accurate opinion, going to be absolutely massive.

The game borrows a lot of its ideas and looks from the film Apocalypse Now, which is regarded by many as the definitive war picture (thanks to its amazing sense of realism and great acting).

You take to the skies in a super sleek helicopter and prepare to take everything the enemy can throw at you. In terms of gameplay it's basically a straightforward shoot-em-up, but in terms of sight and sound it

ON THE Drawingboard

APOCALYPSE

It's been in production for longer than the Channel Tunnel, but now Virgin proudly present their ace helicopter shoot-'em-up. Jonathan Maddock gets down in 'nam and investigates...

looks like being heralded as a world-beater.

The story is that lots of heavily armed rebel forces are amassing on the seemingly insignificant island of Majjipoor. Something is obviously going to happen, but you don't know what.

The objective is to rescue as many prisoners of war as possible while searching for your best buddy as well as finding out what is about to occur. It won't be easy, you'll

have to fly through five levels of bullets, flak, missiles and rockets. What this means for the gameplay is the return of the mega violent shoot-'em-up with more action in it than your average Arnold Schwarzenegger flick.

The chopper has an awesome amount of firepower and is loaded with rockets, heat-seeking missiles and firebombs, all of which are acquired from supply boxes found on the ground.

Unlike some shoot-'em-ups, the weapons can also be used for destroying various bits of the scenery such as the enemy outposts; all that remains intact is the lush flora and fauna.

There is so much going on that you instantly find yourself in a world of mayhem

where you live in seconds, not years. Although you are surrounded by madness and action, the game still commands a bit of order to make the game playable.

As mentioned before, it is loosely based on Apocalypse Now which of course was about the Vietnam War. The game isn't what you'd call politically correct and you don't half feel sorry for the little blokes who are running about like mad

trying to avoid your big nasty missiles, but hey that's war and it's kill or be killed, right kids?

Unlike its competitors, Apocalypse Now isn't a left to right scrolling shooter; it allows you to move vertically as well as horizontally which makes it a lot more interesting, as well as making the playing area that bit more expansive and more realistic.

It comes complete with a whole range of stunning sound effects such as heavy machine gun fire, multi-layered explosions, roaring flames and screams.

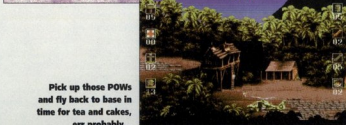
It is also littered with parallax effects that include background and foreground objects to further enhance the unique depth of realism.

Miracle Games are handling its development and production, and their aim was to create a product for the ST that would be worthy of an arcade machine. Having seen a demo of the game I can confidently say that they have indeed achieved that aim.

Apocalypse will blow your minds when it arrives on the shop shelves in a couple of months. If you're a shoot-'em-up fanatic then Virgin Games are about to provide you with your own personal slice of shoot-'em-up heaven.



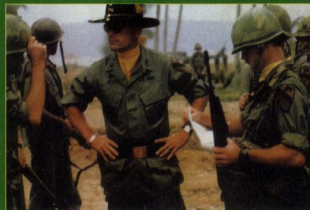
Kill, hack, explode, fire, destroy, argh, dribble... I am invincible. A mild form of psychosis had entered the mind and body of Cap'n Jones



Pick up those POWs and fly back to base in time for tea and cakes, err probably...



What's that burning smell? Your first attempt at a dogfight in 'nam doesn't go down too well...



Smells like... victory

The film Apocalypse Now was made in 1979 and heralded as one of, if not the classic war film. Set amid the muddle of Vietnam, the movie starred Martin Sheen, Robert Duvall, Marlon Brando and Dennis Hopper.

It was directed by Francis Ford Coppola who was more recently responsible for the box office hit Bram Stoker's Dracula. The film received two Oscars for Best Cinematography and Best Sound.

One of the best quotes from the movie is when, just after an air strike, Lieutenant Colonel Kilgore (Robert Duvall) enthuses to a stunned Captain Willard (Martin Sheen):

"Smell that? Do you smell that?...Napalm, son. Nothing else in the world smells like that. I love the smell of napalm in the morning.

"Do you know, one time we had a hill bombed. For 12 hours. When it was all over I walked up. We didn't find one of 'em, not one stinking dink body.

"But the smell...you know that gasoline smell? The whole hill... Smells like... Victory... [A shell explodes behind him, but he doesn't flinch] Some day this war's gonna end..."

Ahh, they don't make them like that any more!

ON THE Drawingboard



The family tree shows the status of each of the Royal pieces. As you can see, Henry the VI is King. Hey, who said games weren't educational?



Oh dear, a plague has broken out in Nottingham. Yes, well I'll really miss going there then. Sigh.

KINGMAKER

Monopoly? Neh. Scrabble? Ptoey. Trivial Pursuit? Sigh. Kingmaker? Cheer! Jonathan Maddock looks on as US Gold convert the '74 classic to the small screen.

US Gold had phoned up and invited Gomer down to their Birmingham offices to take a sneaky peek at their latest piece of software called Kingmaker. Kingmaker was the only word mentioned in the telephone conversation and it never dawned on me to ask what type of game it was. Oh well, ho hum.

Being a fan of indie music I was rather hoping it was about the band Kingmaker. Oh yes it could well of been an arcade adventure of epic proportions featuring one of the hardest working bands on the road.

Yeah, perhaps I could've had a few freebies - even better, the band could be there playing a short set. Alas it was not to be, my imagination had run away with me once more.

Kingmaker is, in fact, a strategy board game that apparently has sold hundreds of thousands of copies since it was released in 1974. Blimey, that was a full year before I was even born and I can put my hand on my heart and say that I have never heard of Kingmaker (the board game, not the band!).

I also asked several other people if they had happened upon the board game and all I got was much shrugging of shoulders. Nevertheless, US Gold are at this very second busily converting it to run on your wonderful computer.

In the past many software companies have tried their hand at this conversion lark and it hasn't worked. The reason is that the computer version can't be a lot different from the original.

The major plus point is the fact that you can test your skills against the computer, but then again most board games were made for more than one player, so you do lose that human interaction.

Space Crusade, Heroquest and Scrabble have all been board game successes on computers and US Gold are hoping that Kingmaker is going to do the same.

It is set in the period of British history known as the War of the Roses, where the Lancastrians (represented by a Red Rose) fought against the Yorkists (represented by a White Rose). The objective is to control the last surviving royal piece and so become the undisputed King of England.

PERSONALITIES

The player controls a faction of nobles representing historical personalities from 15th Century England. The game accurately reflects the changes in strengths of the factions as they are decimated by battles, plagues and failed ransom attempts or have new honours bestowed on nobles

with attached troops and castles. To date, Kingmaker has been in development for over 18 months which for a game of this nature is a long time. It's been programmed by Graham Lilee whose previous projects include Heroes of the Lance and Shadow Sorcerer, with the graphics by Kevin Bulmer who was responsible for the artistic delights seen in Corporation and more recently Legends of Valour.

According to US Gold, it offers an abstract recreation of the chaos, war and intrigue that epitomised the period of the War of the Roses, and hey, if that doesn't sound like an exciting board game, then you can call me Hilda.

Products such as Powermonger, Civilization and Defender of the Crown have all been chart successes. The weakness in these titles is that their artificial intelligence (AI) is weak and the strategy

player loses interest in the products, once they learn the "perfect" strategy. In Kingmaker there is no such thing as a perfect strategy and thus this makes the product ideal for a conversion to the computer.

While we were at US Gold we had the opportunity to play and see both the board game and the computer conversion. In the original you use a set of cards in conjunction with loads of little counters. In the computer version you don't have to bother fiddling with them because it's all done for you.

There are several instances where the computer version makes for a more complete game. For example, let's take a look at the battles between the two rival forces. In the board game, the battles are won and lost on the turn of a card and this type of battle is incorporated in the computer conversion.

There is another way to fight the battles, though, which is to select the Advanced Play option. Then you'll have direct control over your army in battle. This is a brilliant option because you then find the strategy part of the game which could get a bit monotonous spill up by a great arcade session.

The game is 100 per cent mouse-controlled and uses a completely intuitive icon system that gives the player easy access to all of the game functions.

All you historians out there'll be pleased to know that Kingmaker will be accompanied by a 120-page manual featuring a wealth of information on the historical background and analysis of the War of the Roses conflict.

As I've confessed before, I'm not particularly fond of strategy games and I bet other people have the same sort of opinion, but Kingmaker could well change a few minds when it arrives. I can guarantee that strategy fans are going to be in seventh heaven.



After you've survived many setbacks you will emerge as the holder of the last crowned royal piece and therefore be hailed Kingmaker



Wake up... time to die! The troops go into a field battle which can be decided by a turn of a card or by using the more realistic advanced battles

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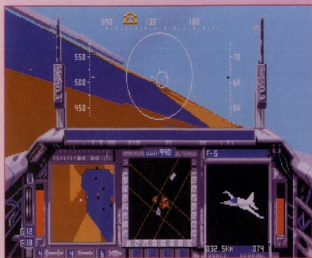
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Simon's selection



I remember many moons ago, when I was just a young pup, watching Top Gun. Afterwards I was absolutely obsessed with the idea of becoming a fighter pilot. The very thought of pulling

high 'g's with Kelly Magillis sent my pulse racing right through my cockpit window. However, it wasn't to be, and the closest I've got is flight sims. Strike Eagle II is typical of this genre. A manual thicker than Vinnie Jones and more options than Ovaltine.

You've got every conceivable theatre of war to wreak havoc in, from Vietnam to Cheltenham (almost). All the ranks, weapons and missions to keep the most battle-scarred bombers happy.

But you'd expect that wouldn't you? Well I would. What you really want to know is whether it's worth your sweatily-palmed coinage.

The simple answer is... probably. F-15 is slightly different to most simulators as it has an arcade feel to it. It plays nicely enough and there's always plenty to keep your jet-lagged grey matter throbbing.

On the downside, Strike Eagle is plagued by the universal ST problem - poor sound. I know it's not the end of the world, but what's the point of having sound at all if it's so bad?

That aside, F-15's pretty damn decent and worth burning a hole in your pocket for.

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Midwinter II puts you in the dinner jacket of an elite COBRA field operative working for the oh-so-friendly politically correct Atlantic Federation. Your mission is to liberate 40-odd islands controlled by the nasty, boo-hiss Saharan empire.

After generating your character and utilising a whole host of other options at HQ, it's off into the dizzy world of secret agents.

Flames of Freedom is an absolutely massive challenge to complete. Each one of the vast archipelago of islands has missions to be completed, which will help bring down the corrupt, slave-trading authorities.

Your movement and all the action is viewed in the

first-person perspective using 3D vector polygons as its graphical style.

As a spy, you've really got your work cut out, as there's no James Bond hi-tech kit on offer for you. Instead, you have to rob your transport. This is easier said than done as it's quite tricky trying to mug the bus driver.

In all seriousness, Midwinter II is a quality product and well worth splashing out your £13 on. The only downside is the usual ST criticism - sound! Believe me, Midwinter's sonics are particularly poor.

That aside, it's still a bargain and a great opportunity to don your Milk Tray outfit, drop from helicopters and generally be macho.



When you first cast a beady eye on Loom it's very easy to jump to the wrong conclusions. My mind spun off in all kinds of directions, as I milled it over.

Was it about a bunch of masochistic milliners? Or, would it tell the tale of some old lady on a woolly quest through a land of knitting patterns? Fortunately it's the brainchild of Lucasfilms' and their suprema George Boy, who among other things was the mind behind the Star Wars trilogy. So it was fairly safe to assume that any of my wild meanderings wouldn't, thankfully, come close to the real plot.

In Loom you play the role of Bobbin Threadbare, a young boy coming of age in a world of fantasy on the

brink of apocalypse - nothing unusual so far.

Bobbin knows very little of his birthright and the powers he possesses. This is until he overhears his elders discussing him and how special he is.

Basically as Bobbin you must travel around a series of islets discovering the strange powers created through the Loom. Interacting with different characters and objects teaches Bobbin staves of musical notes, which are the key to enlightenment and success.

Loom is a really clever involving piece of imagination from Lucas. Being the forerunner to Monkey Island everything's very much in the same vein, both in its graphical style and its principles.

However the nicest element is the fact that there is no violence at all in the play. So, rather than hack your way around everywhere, you must work your way around a labyrinth of engaging puzzles - ho hum shant-ah.

Overall, Loom looks lovely, plays well and should keep the most upright gamer in a most tranquil frame of mind...man.

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Family Roots

Family Roots is an invaluable aid to both professional and amateur genealogists. It is designed around an integrated worksheet 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:

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"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 Forum.

To order your copy of Family Roots, send a cheque or postal order for £24.95 to the address below. UK postage free, please add £1.50 for Europe and £3.00 for rest of World.

Stone Cold Sobex

Stone Cold Sobex is a graphic adventure for the Atari ST, STE, TT and Falcon. It runs on colour or mono displays (without the location graphics in mono) and is ideally suited to the novice adventurer. As the name suggests, you start your quest in a pub. Your journey will take many weeks to complete and will involve a considerable amount of thought and a lot of luck. There's an element of the supernatural in this one so beware! The program is entirely mouse driven and involves almost no keyboard input at all. Stone Cold Sobex was written by Simon Brown, one of the best adventure game authors of recent years and it promises to keep you glued to your screen for weeks (months perhaps). To order your copy of Stone Cold Sobex, send a cheque or postal order for £9.95 to the address below. UK postage free, please add £1.00 for Europe or £2 for the rest of the world.

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Reach for the Skies

Yes indeedy, Gamer once again sheds the light on a tricky game in typical benevolent fashion and it's all thanks to its creator Rod Hyde



There's nothing like chasing a distant dot through the great blue skies, I always say

In the real world, over eight out of ten kills are forgone conclusions by the time the victim knows there is a problem. So if you get involved in a dogfight, you have already given up your best weapon – surprise. It is essential that you become a hunter and not one of the hunted.

A modern jet fighter has radar, TVs with magnification and threat indicators to help detect the enemy. In comparison, the Battle of Britain pilot was limited to the Mark I eyeball. Good eyesight was essential, far more important than it is now.

It was also important to use the gift of good eyesight properly; this comes with experience. Inexperienced pilots would be concerned with flying and not fighting. So here are some tips to help you live long enough to gain your experience.

Keep the sun behind you. If you have to fly away from the sun, "tack" away at 45 degrees from the direct course. Keep your eyes out of the cockpit. Don't get fixated by the instruments. Relying on the 3D view displayed on the cockpit screens of a typical flight sim will also lead to trouble.

In a real aircraft the pilot is not limited to a small tunnel of vision, he moves his head to cover as much of the sky as possible. In a

simulation, you need to move to an outside view and rotate to get the same effect. Look for relative movement. At the edge of visibility where a stationary aircraft would be invisible, the relative motion of a moving aircraft against the backdrop will give it away.

In many flight sims, designers include layers of dots to enhance the impression of speed and perspective. These make it more difficult to pick up aircraft. However relative motion will give away a moving aircraft every time.

Battle of Britain aircraft did not fly as high as modern fighters. This means that a pilot can also look for aircraft shadows over the ground and sea. Sometimes it is easier to see the shadow than the aircraft casting the shadow.

Watch out for the messages from your ground controllers and fellow aviators. These should help you to make your search more profitable.

Watch your six and don't rely on the rear view mirror. More often than not, danger

comes directly from behind you (your six). Although your mirror gives a view of the area, it is only a very narrow view. Use the outside view.

Fly in pairs. A man on his own is a liability, a pair is an asset. See Figure 1 to show the advantage of staying in pairs. Having a buddy close by is like having an extra pair of eyes. Not only that, it complies with the ancient doctrine of concentration of firepower.

However, this doctrine resulted in the RAF adopting some very poor tactics in the early

months of the Second World War. Large wings of fighters were instructed to fly so close to each other that only the leader could spend any time looking out for the enemy. Many "Tail end Charlies" were shot down before the tactics were discarded in favour of the approach adopted by the Luftwaffe.

It is essential that you should fly close enough to provide mutual support but not so close that the act of formation flying requires too much attention.

Once you have spotted the enemy, you



Death-defying
low-level
showing-off if
ever I saw it



cheat mode

should attempt to keep out of sight. If you have not already done so, move up sun and gain more height and use any cover provided by clouds or high ground. Modern fighter pilots will attempt to move to the rear or gun range without detection and without danger.

The Battle of Britain pilot did not have things so easy. Some aircraft had rear facing crew with guns. This was a real sting in the tail for an unsuspecting pilot coming in for the kill. So it was important to identify the aircraft before adopting attacking tactics.

For aircraft bristling with guns, an aggressive fast slashing attack would make the most sense. This doesn't give the gunman a chance to take aim. Sometimes aircrew were left at home to increase aircraft range. Once discovered, this would be an unexpected bonus for RAF pilots.

After the attack, get away as quickly as possible using all speed. Only go for the deck as a last resort. At low altitude, small arms fire from the ground can be very dangerous.

A pilot is at his most vulnerable when he is attacking another aircraft. He needs to concentrate his attention on the attack and does not have much time to look around. So get away as soon as possible, there could be a bandit on your tail.

Incidentally, target fixation is a real problem in its own right. Pilots have collided with other aircraft, been shot down and hit the ground when they have concentrated on the target to the exclusion of everything else. All

this strengthens the argument of flying with a buddy.

You should attack suddenly and aggressively. Be sure of the shot before you open fire. Once the shells start to fly, your position will not remain a secret for very long. One war time commander ordered that tracers be removed from his squadron's ammunition. This removal of the squadron's calling card increased the kill rate significantly.

In a tail chase where you have an enemy aircraft in front and you are not gaining on him, give him a burst of gunfire. This may scare him into weaving about. This could be enough to slow him down and let you catch up.

This next trick was used by Adolf Galland when he found himself in a sticky situation with a Thunderbolt fighter behind him. Galland tried a burst on his guns. The shells had no chance of hitting, they were going in completely the wrong direction. However, the thunderbolt pilot was so surprised to see smoke and shell cases coming towards him that he broke off the attack. He probably thought he was the unlucky guinea pig for the Luftwaffe's latest weapon - fighters with rear-facing guns.

The modern jet will be armed with a range of missiles. One of the major differences between Second World War and modern fighters is the introduction of guided missiles. These missiles have improved tremendously and now it is much easier to get a kill.

The Second World War fighter was limited

Adjust distance **1** to ensure that distance **2** is greater than the maximum firing range of the enemy

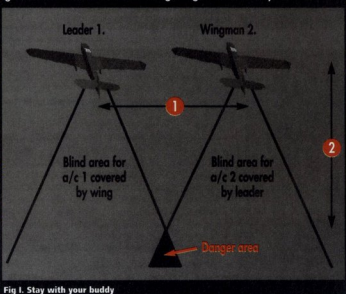


Fig 1. Stay with your buddy

to his gun/cannon. Obviously shells don't guide like modern missiles, so this makes combat more difficult, demanding, interesting and stimulating.

You have to aim your shells ahead of the target so that the shells and the target arrive at the same point of space at the same time. This is called deflection shooting and is a big enough subject for a separate article.

Once you have made visual contact, don't let the bandit out of your sight. There are two basic problems. When you start a manoeuvre, the bandit will respond. If you are not looking at him, he certainly will not be where you expect him to be when you finish your manoeuvre.

Secondly, the bandit can turn away during

the moment of your inattention. This could make him almost invisible as he presents a smaller area to you. Also as he is moving away, relative motion will not be enough to pick him out of the backdrop. The distance that the bandit covers in the few seconds you are not looking could give him enough of a lead to get away.

When flying most flight sims, it is not easy to keep your eye on the bandit at all times. Reach for the Skies has a simple and practical combat view. The bandit is locked to centre screen. This makes it possible to perform very complex 3D manoeuvres and always keep the bandit in view.

Advice from the experts

No matter how skillful a pilot is, sooner or later he will find himself in a vulnerable or defensive position. Here are some words or wisdom from fighter pilots:

- The best defensive tactic is a hard and fast offensive movement. At the very least this will unsettle the attacker.
- Don't run from the aggressor, turn towards him. This may make the attacker overshoot.
- If you try to protect something, you protect nothing. Attack is the best form of defence.

As an exercise, try to make a successful interception and attack without letting the computer bandit know you are there.

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Pro

ICD's latest utility package, the Pro level utilities, now works on any hard drive. Andrew Wright checks them out

performers

Most SCSI hard drive owners will have heard of ICD - even if you don't actually own one of their drives, the chances are that yours has an ICD host adaptor such as the AdSCSI ST to convert the signals from the ST's DMA port into pure SCSI commands that the drive's controlling mechanism will understand.

Everyone who bought a drive with this type of adaptor also got a disk with various configuration utilities on them - the ICD utilities.

The utilities are a collection of programs for carrying out operations like formatting and partitioning the drive, setting the cache sizes and detecting errors in the FAT tables and root directory. They are constantly being updated and the latest versions are widely available on bulletin boards.

There are actually three versions of the ICD utilities in circulation at present. Apart from the basic set, there's a dedicated set provided with The Link external host adaptor and a higher level called ICD Pro that offers much more flexibility, including the full version of ICD Cleanup, a defragmenting utility and a SCSI direct command utility.

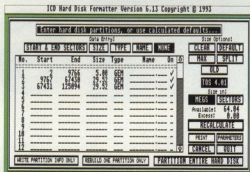
IMPORTANT FEATURE

The Pro's most important feature is that it can be used with any hard drive, even those which don't use an ICD host adaptor or The Link, as well as non-SCSI devices like the older MFM/RLL drives and less common SCSI devices like CD-ROM drives and Flopticals.

This includes the Falcon's internal IDE drive and a number of bugs have been fixed to ensure the utilities work correctly with both the TT's SCSI port and its separate ACS1 port.

The meat of the package is of course the hard disk driver itself, ICDBoot, now up to v6.1.3. To use the utilities, the driver is run straight from the floppy disk and this enables the utilities to "see" the hard drive, even without host adaptor hardware.

The driver can be installed permanently using the Install program that partitions and formats your hard drive, sets it to auto-boot and even configures the Desktop to show the four partitions, each with an



Partitioning a disk with ICD's Pro utilities

icon and window.

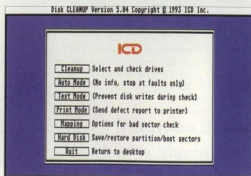
It won't, however, allow AHDI compatibility (the official Atari standard) and it won't work with older ST506-compatible drives that have separate controllers.

For those keener to get more deeply involved or use non-default partitioning, the ICDPMT (v6.13) utility lets you set up any configuration you like while the HDUTIL (v5.06) program sets up the driver itself.

The Pro driver worked well on an old Atari Megaflo hooked up to an ST and the ICD driver's built-in caching and buffering made a small but significant improvement in performance, making it a good buy for ST users who want to get the most from an older drive.

The Cleanup utility (v5.04) is a useful program for defragmenting and restoring damaged hard and floppy disks, though unfortunately it won't optimise partitions which seems to be a major omission. As such it doesn't even come close to something like Diamond Edge.

The SCSI program (v3.07) is strictly for those in the know - SCSI commands can be sent directly to any compatible device and the result displayed on-



ICD's Cleanup utility for checking and defragging hard disks

screen. It can be used as a low level disk sector editor for retrieving data from other media too (though there are much better utilities for hard disks).

The CD-ROM drivers supplied with this version of the utilities are completely different to the earlier ones and should now be fully compatible with the Falcon.

Other utilities include programs to turn the cache on and off, eject Mac-compatible Floptical disks, test the hard drive's performance, set and check the time (taken from host adaptors with built-in clocks as SCSI ID 6) and examine the SCSI bus for devices and their ID numbers.

My major grumble is with the documentation. The 50-odd page manual refers only to the AdSCSI hardware host adaptors - there's no mention of The Link, the Pro Utilities or even the Falcon. There are several large text files on disk but finding the information you need isn't that easy.

On the whole, the upgrade has provided a number of new features and more real (as opposed to imagined) compatibility with both the Falcon and TT. The CD-ROM drivers will be extremely useful, particularly with the growing interest in CD-ROM and PhotoCD among Falcon owners.

The only real omission in terms of functionality is some form of drive optimisation, although a shell to bring together all the utilities would be a good idea too.

BOTTOM LINE

FEATURES

A comprehensive set of utilities for looking after hard disks.

Excellent
Good
Average
Bad
Appalling

EASE OF USE

The utilities are quick and easy to run though better integration and documentation might be useful.

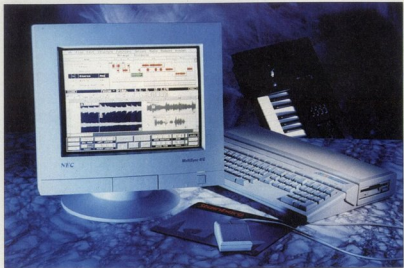
Excellent
Good
Average
Bad
Appalling

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Excellent
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The Falcon – the most desirable music computer on the market

Step forward

Let's face it, the hi-tech end of the music market is hardly bustling with innovation. We have an enormous amount of technology at our disposal but what are we doing with it?

Well, the musical instrument manufacturers don't seem to be doing much. They're regurgitating existing technology in a variety of different formats – all the recent crop of synths and expanders have to offer is variations on S+S (Sample + Synthesis) technology.

Some expanders are being bundled with software and called multimedia packs but a sequencer and an expander isn't multimedia, is it? So where is the music business heading?

Actually, the multimedia epithet could prove prophetic. Let's cut through the garbage and see what multimedia is. As the name suggests, it is simply the use of several media to achieve a result.

TWO SENSES

Now we only have five senses and we haven't managed to computerise three of them so most multimedia projects involve a combination of sound and visuals.

Music and sequencing became popular because quality musical instruments became affordable and sequencers became incredibly powerful, especially software sequencers running on computers such as the ST.

They allowed anyone to produce studio-class demos and even studio quality records from their bedroom for very little cost. Yet, with the possible exception of Notator Logic, there has been no innovation in the world of sequencers.

A market without innovation can easily seize up and grind to a halt

so where is computer-based music heading now? To answer that question, let's look at the Falcon and extrapolate a little.

The first thing the Falcon can offer the musician is cheap direct-to-disk recording. Even now, good quality four-track personal multitrack systems are selling for up to £800. Direct-to-disk recording offers superior quality sound and vastly superior edit facilities.

So this is old news (well, since the beginning of the year). But one new market which could open up for the Falcon is the multimedia music market (see the July issue for an in-depth report on the Falcon's multimedia potential).

Imagine creating a song using Midi for the backing tracks and direct-to-disk recording for the vocals and acoustic instrumental material. And then imagine adding video.

Computer-based video editing programs are already available for the Mac and the PC, plus presentation packages which let you integrate sound, animation and video clips.

The range of video products for the Falcon is growing. The cost of

From music to multimedia, Falcon style



an integrated computer-based video/music setup is peanuts compared to the cost of hiring a professional video studio. Draw a parallel with the computer-based setup and a professional multitrack studio.

Many musicians will use video to record themselves singing or their band playing but because video data stored on disk is as (relatively) easy to edit as audio data stored on disk (compare and contrast with audio data stored on tape), you have as much creative flexibility

and control over the visuals as you do over the music. Think about it. Mouth-watering prospect, isn't it?

The music multimedia revolution isn't going to happen overnight. It took a while for people to realise that sequencers and expanders could give them professional results at a fraction of the cost of studio time. It will be the same with video – and video studios are several magnitudes more expensive than music studios.

The technology will put full multimedia power in the hands of the ordinary people, not only those with mega budgets. And we have the technology. We're just waiting for the applications to catch up with it and for the people out there to start using it. But it'll happen. Soon.

***Ian Waugh on where
electronic music could
go from here...***

Fractals revisited

Readers with good memories may recall that in August last year we looked at a couple of programs which generate music using fractals.

One of them, Fractal Music, has now got a distributor in the shape of Oscar Music who are looking for retail outlets so that you can see it in action before parting with your reads.

It's already being stocked by Strange Attractions at 204 Kensington Park Road in London.

The cost of this addition to the distribution chain to the user, alas, is a price increase to £79.

The reason for mentioning it again is threefold. First, it has been updated to v2.51 and now includes a MIDI Thru function which many users have been requesting.

Secondly, even if you're not into the generation of fractal music (which, it must be said, can sound decidedly unmusical), you can experiment with the program's transform functions.

They include Invert, Retrograde, Reflection and Rotation functions and you can apply them to music you've loaded into the program in Standard MIDI File format. The results can be very musical.

In fact, many of the great composers used inversion, reflection, and retrograde functions as an aid to composition. Some of the rotations, however, can only easily be accomplished by a computer. In any event, the program makes experimentation with such func-

| Track | File | Start | End | Track | Other |
|-------|------|-------|-----|-------|-------|
| 01 | ... | ... | ... | ... | ... |
| 02 | ... | ... | ... | ... | ... |
| 03 | ... | ... | ... | ... | ... |
| 04 | ... | ... | ... | ... | ... |
| 05 | ... | ... | ... | ... | ... |
| 06 | ... | ... | ... | ... | ... |
| 07 | ... | ... | ... | ... | ... |
| 08 | ... | ... | ... | ... | ... |
| 09 | ... | ... | ... | ... | ... |
| 10 | ... | ... | ... | ... | ... |
| 11 | ... | ... | ... | ... | ... |
| 12 | ... | ... | ... | ... | ... |
| 13 | ... | ... | ... | ... | ... |
| 14 | ... | ... | ... | ... | ... |
| 15 | ... | ... | ... | ... | ... |
| 16 | ... | ... | ... | ... | ... |

Fractal Music has a wide range of transform function which you can apply to Standard MIDI Files. Here Mozart's Eine Kleine Nachtmusik is about to be Inverted

tions very easy indeed.

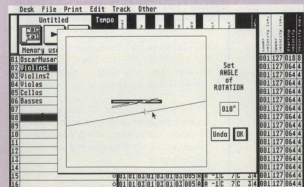
The third reason is to mention a process discovered by Australian user Robert Martin which enables Fractal Music to produce a 24-note scale!

The program requires a multi-timbral instrument which lets you detune individual voices such as Yamaha's DX11 or TX81Z, or two separate instruments, one of which has a detune facility.

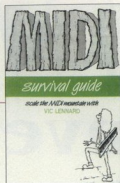
The user simply sets up two voices on different MIDI channels, perhaps even using the same sound, and detunes one by a quarter tone.

In Fractal Music, you should set up two tracks with identical parameters, except that the versions should be A and B and set to the two MIDI channels you're using. Then fractate. You'll get genuine 24-note music!

More from Oscar Music, 91 Brick Lane, London, E1 6QN. Tel: 071-377 6294.



Fractal Music lets you spin a piece of music around on its axis and gives you a visual representation of transformation. A gentle rotation can produce interesting musical results



Book of the month

Once you acquire more than two pieces of Midi equipment you have a problem - how to connect them all together.

If you simply want to play a couple of expanders from a keyboard, the connections are easy to make. If, however, you have a keyboard, an expander and a computer-based sequencer, it's not always obvious how best to connect them so you can control everything from both the sequencer and the keyboard, for example.

Add a few more bits of gear, a drum machine, some synchronisation requirements, and getting the connections right can be a real headache.

This is where the *MIDI Survival Guide* comes in. It was written by Vic Lennard, who runs the UKMA, as a practical guide to getting your Midi gear up and running.

It contains more than 40 diagrams showing how to connect a wide range of different Midi setups. It has chapters on Midi switchers and mergers, drum machines, sequencers and multitrack recorders, and synchronisation, complete with an explanation of FSK, SMPTE, MTC and MMC.

It explains many basic Midi functions such as exactly what the In, Out and Thru sockets do, and tells you how to read a MIC (Midi Implementation Chart), the grid at the back of the manual which looks like a game of noughts and crosses.

There are also hints on buying Midi equipment, although no specific gear is named.

There is a lot of practical, down-to-earth information packed into the book, although there are a few topics which could do with a bit more explanation.

However, it is very easy to read and surprisingly devoid of the lists of numbers which most Midi books contain - a massive plus in its favour.

The *Midi Survival Guide* will help you set up your Midi equipment and get the most out of it without baffling you with hexadecimal numbers.

It costs £6.95 and should be available from all good music shops or direct from: PC Publishing, 4 Brook Street, Tonbridge, Kent, TN9 2PJ. Tel: 0732 770893

More that's worth noting in the music world

● Intrinsic Technology have reduced the price of their Slam Akai sampler and librarian program from £89 to £25. The company claim the reduction has been made possible by repackaging and volume sales. Slam is also now compatible with the Falcon except for the ability to read Akai disks.

● Slam Pro is currently under development. It will consist of a suite of programs including of Slam, a Slam desk accessory, an S9xx parameter editor and four sample disks. There are upgrade paths for existing Slam users. More from Intrinsic on 081-761 0178.

● What will they think of next? Heavenly Music have rendered Holst's Planets Suite into Midi File format. Astrogators tune in here. It costs £21.45. More from Heavenly Music on 0255 434217.

● Looking for an expander to plug into your ST? Check out Roland's new Sound Canvas Mk II. The Sound Canvas Mk I started the GM ball rolling. Mk II is 28-note polyphonic and has 354 sounds and nine drum sets. It's also cheaper than the original - £649. More from Roland on 0252 816181.

Win

Slave Driver v2.1!

Your favourite Atari magazine and Mind Over Midi Productions bring you the chance to win one of three copies of Slave Driver v2.1, each worth £150.

When today's hi-tech equipment is capable of playing music in its entirety without human help, where does it leave the spontaneity of the musicians?

Rigid arrangements pre-programmed on a sequencer don't produce the essence of a true live performance. What is needed is some kind of system whereby control over exactly what is played in a live situation is put right back into the hands of the keyboardist who is controlling it all.

Enter Slave Driver...

Essentially, Slave Driver is a Midi mapping device, a powerful package allowing an unprecedented degree of access to previously written Midi files. This means that it can map where an incoming piece of Midi information - which can be sourced from anywhere - will

go, and what effect it will have.

Slave Driver can intercept any Midi messages and tell them to do anything you wish. This means that from your master keyboard you now have the ability to control your equipment exactly as you wish. You can program quick and simple keyboard controlled access to absolutely any parameters. Currently Slave Driver is only available directly from Mind Over Midi in Canada, but is expected to be distributed in this country shortly.

A copy of the brilliant

Slave Driver v2.1 could be yours for the price of a quick phone call, which should cost you under £1 at cheap rate. To keep the bill to a minimum try to avoid background noise, which may necessitate the repetition of answers.

Slave Driver offers a degree of control over an area of Midi music where control has hitherto been limited to start, stop and song order.

- Atari ST User, June 1993

This is the number to call:



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The closing date is the September 10, 1993. The prize winner will be drawn from all the correct entries received and will be informed in writing within two months of the closing date. Result information may be obtained by writing to our offices. No cash alternative to the prize is available. The editor's decision is final. No correspondence will be entered into. Calls are charged at 36p per minute cheap rate and 48p per minute at all other times.

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|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Do right music key send? | | | | | | | | | | |
| | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x1 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x2 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x3 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x4 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x5 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x6 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x7 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x8 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0x9 | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0xA | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0xB | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0xC | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0xD | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |
| 0xE | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA |

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You will be asked to leave your answers together with your name and full postal address including postcode. Please speak clearly, spelling out any difficult words.

What does Midi stand for?

- Musical Instrument Digital Intelligence
- Musical Instrument Digital Interface
- Musical Interface Digitised Instruments

How would you describe Slave Driver?

- As a keyboard accessory
- As a sequencer
- As a Midi mapping device

How much does Slave Driver cost?

- £150
- £350
- £1,300

I have spoken to a lot of people over the years who seemed to be labouring under the misapprehension that an emulator would lead them into yet more expenditure to acquire the relevant PC or Mac peripherals – another printer, modem, disk drive, scanner or even monitor.

Indeed, someone once asked my advice about which CGA monitor would work best with PC-ditto!

This worry is not altogether groundless, as we shall see in a minute, but by and large the popular emulators have been designed to make full use of existing ST hardware.

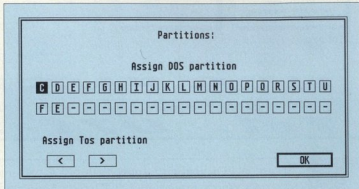
Atari disk drives will work as PC or, rather miraculously, Mac drives (this applies to both the floppy and the hard variety), printers will print from the "alien" operating system as they do (most of the time, anyway) under TOS, and of course your ST monitor can be used to display the DOS video modes as well as the Mac screen.

I say "by and large" because there are some exceptions such as the unavailability of colour with both the Spectre GCR Mac emulator and the PC emulators in EGA and VGA modes – CGA colour is no problem.

In practice, a few other problems occur. It is difficult, for example, to print from Spectre GCR at anything better than ImageWriter (144dpi) resolution unless you have a PostScript printer or acquire specialist printer drivers.

Apple peripherals using the SCSI port cannot be connected to an ordinary ST because – you guessed it – it has no SCSI port. For much the same reason – the absence of expansion slots – many PC peripherals requiring expansion

The "logical" DOS partitions do not need to be identical with the "physical" TOS partition – In fact, the two boot partitions C should be different. GAT-Speed lets you assign any TOS partition to act as any DOS drive



Three-in-one

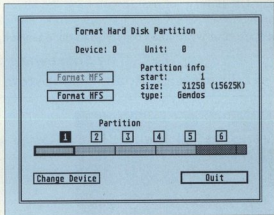
cards are out.

But the Mega ST sitting in front of me is living proof that it is possible to integrate all three operating systems quite smoothly in one single box. Its hard disk has three TOS, one DOS and two Macintosh partitions.

The TOS and DOS partitions can easily exchange information because they are virtually identical in format, and files can be copied between either and the Mac partitions using the Transverter utility bundled with Spectre.

The attached Atari SLM804 laser printer works under DOS as an Epson or Diablo, and from Mac applications as an ImageWriter. The modem can be driven by comms software running in any of the three environments and the scanner, while requiring ST software, saves its files in the TIFF format common to all three.

So let me take you through the steps required to put together such a "three-in-one" system, which is so much neater than having three different computers cluttering your desk and saves a lot of lead-swapping to



Spectre/Mac partitions are incompatible with GEMDOS so you need to format them specially in either MFS or HFS format. The older MFS is required for Transverter, but otherwise the more efficient HFS (Hierarchical Filing System) is preferable

reconnect your peripherals!

First, of course, you need to splash out on the actual emulators and install them – Spectre GCR slots into the cartridge port and is the only Mac emulator you can buy these days, whereas there is a choice of PC emulators to suit your budget and performance requirements – they all involve the words "Speed" or "ATonce".

My one firm recommendation though is to get a hard disk if you do not already have one – a floppy-based Mac is unbelievably slow and inconvenient, and modern PC applications gobble up storage space by the megabyte.

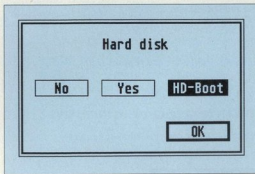
You'll need to think a bit about partitioning the hard disk. The space allocation depends on how

much is available to you, of course, but if you intend to run Windows and Macintosh power software such as QuarkXPress or Adobe Illustrator you need to be generous indeed – a main partition of 16Mb each for DOS and the Mac is a bare minimum.

To auto-boot DOS from the hard disk, an additional, smaller (about 8Mb) boot partition formatted as a "system" disk is advisable, but to avoid boot sector conflicts between TOS and DOS your "PC" drive C: should be different from your "ST" drive C:.

For Spectre GCR, too, a small additional partition (of perhaps 4Mb) is recommended – formatted MFS rather than HFS – to speed up Transverter file copying to and from TOS/DOS.

Got that? Good. Next month, a look at how the different operating systems work and the minimum software configurations needed to make everything work smoothly and reliably.



The only partition that needs formatting under DOS is the boot partition – assuming that you want to boot from the hard drive, as you could, of course, also use a floppy for this purpose and still access the hard disk for programs and data. In that case, the existing TOS partitions can simply be used as they are

Günter Minnerup goes back to basics and tells you how to get a Mac, PC and ST all working from one case! Plus news on the latest Falcon PC emulator

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The early STs were simple enough to connect to a modem — one RS232 socket on the back of the computer, another on the modem, and a bit of wire to link them together.

Later machines became more complex as Atari added extra serial ports, and in the case of the Falcon, even completely redesigned the default port.

Internally, all STs and STEs use Motorola's 68901 chip to drive their modem port — among a variety of other tasks, such as outputting to a printer.

Luckily, the TOS operating system deals with the complexity of talking to any individual chips by referring to input and output ports as "devices".

If you've ever dabbled in a bit of Basic programming, you may know that there are six standard device numbers which the ST can access (see table).

For now, we're interested in just one of them — device 1, which allows you to send and receive characters from a modem or any other RS232-connected device. The programming required to talk to a mode is thus fairly simple.

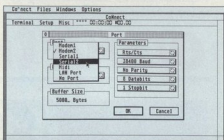
The problem with this system was that it was rather too limited for the more advanced Atari TT030 machines, which boasted no less than four RS232 serial ports and a LAN (Local Area Network) connector.

Obviously a single device was not sufficient to control all of these ports, so Atari implemented the "bcommap" structure. This is basically an extended list of available devices.

The remainder of the first six



Both STalker (left) and CoNnect (right) provide access to the additional serial ports of a TT or Mega STE



From port to port

devices, numbered 0 to 5, are used for the screen, keyboard, MIDI port and printer, so the range was extended to provide devices 6, 7, 8 and 9 (see table).

Each new entry corresponds to a different port. More recent comms packages (such as STalker and CoNnect) support these extra devices directly, allowing you to attach your modem to any of the serial ports provided on the newer machines.

Atari have even created a control panel accessory (MODEM.CPX) which allows the user to decide which

of these multiple ports should be used by programs which only understand about the original device 1.

Unfortunately, all of these new ports use different types of serial control chip (for example, Zilog's 8530), and Atari have not defined any way for software to determine which type of chip is in use.

For simple sending and receiving of data, this is not a problem as you can use standard operating system calls. However, if the comms software needs to check such things as the Carrier Detect line (to find if the modem is current-



ly online), or control the Data Terminal Ready line (used to force a modem to drop the line, or into command mode), then it needs to access the serial chip directly. But which chip?

The extra Bcommap entries are different on each new machine, and they give no indication of whether a 68091 or 8530 chip is in use.

On the TT or the Mega STE it's always possible to fall back on using the standard 68901 serial port which has been available since the ST range first came out, but the Falcon does not offer that luxury as it hasn't got a 68901 chip at all!

This means that older software, such as Flash or Uniterm, is unlikely to function correctly on a Falcon, although simple transmitting and receiving of characters via device 1 will probably still work.

Matters are made worse by some bugs which crept into the Falcon TOS. For example, the supplied bcommap on the Falcon contains entries for three extra devices, but when asked, it replies that only one is available.

This means that any software which tries to use the second or third device will erroneously be informed that the device does not exist.

These bugs can be remedied by putting Atari's FPATCH2.PRG into your AUTO folder. This patch is available from most bulletin boards, or you can download it from CIX, where Atari's technical support people regularly upload utilities. By the way, don't be tempted to use FPATCH1.PRG, as it doesn't actually fix the problem at all.

André Willey explains how Atari computers access the outside world, via the array of ports on the back of every machine

Input/output devices and BIOS numbers

Standard ST devices (all machines)

| BIOS Number | Name | Device | Controller type |
|-------------|--------------|---|---------------------------------------|
| 0 | PRN: or PRT: | Printer port (output) | 68901 chip |
| 1 | AUX: | RS232 serial port (input/output) | 68901 chip |
| 2 | CON: | Console (input from keyboard, output to screen) | |
| 3 | MID: | MIDI port (input/output) | 6850 chip |
| 4 | KB: | Keyboard (input) | 6301 chip, via a 6850 chip |
| 5 | VID: | Screen (output) | Extended Bcommap Device Table (TT030) |
| 6 | - | Modem One (standard RS232 serial port, as per 'AUX:') | 68901 chip |
| 7 | - | Modem Two (input/output) | 8530 chip, SCC-B |
| 8 | - | Serial One (simple input/output) | Second 68901 chip |
| 9 | - | Serial Two or LAN port (input/output) | 8530 chip, SCC-A |

Extended Bcommap devices (MegaSTE)

| | | | |
|---|---|---|------------------|
| 6 | - | Modem One (standard RS232 serial port, as per 'AUX:') | 68901 chip |
| 7 | - | Modem Two (input/output) | 8530 chip, SCC-B |
| 8 | - | Serial Two or LAN port (input/output) | 8530 chip, SCC-A |

Extended Bcommap devices (Falcon)

| | | | |
|---|---|--|--------------------------------|
| 6 | - | Modem (emulates the old AUX RS232 serial port) | Software emulates a 68901 chip |
| 7 | - | Modem (input/output) | 8530 chip, SCC-B |
| 8 | - | LAN (input/output) | 8530 chip, SCC-A |

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The C offer ends August 31

Not the pirating type!

To the uninitiated, a font is a font. To the designers working for big typesetting suppliers like Adobe and Monotype, each one represents several weeks or even months of hard work.

This is just one of the reasons why several of the big names have banded together to combat font piracy – and when you remember that a single professional font can cost between £30 and £40, you can see that the effects are much the same as pirating games and other software. The more the fonts are copied illegally, the less money there is to develop new ones and so on.

Monotype, Adobe, Agfa, Bitstream, ITC, Letraset and Linotype-Hell are all members of the Association Typographique Internationale, known as ATypI. Together they've come up with an action plan to deal with the problem.

It started with an amnesty last year so that illicit users could sort out which fonts they were entitled to and which they weren't. After the amnesty was up, the group started prosecutions alongside FAST.

Several cases are now underway and one, involving a vendor in an Amiga magazine offering "cut-price" Monotype originals, has just been satisfactorily concluded.

According to Monotype's Andrew Boag, though, the problems lie much deeper than that. It stems as much from freelance professional designers as from home users who simply don't think of a font as software in the same way as they would treat a program.

Fonts are thought of as useful commodities that are passed on without thinking, even by DTP bureaux whose attitude is sometimes cavalier to say the least. What often happens is that you send a file for printing on bromide and the bureau, being unable to

Andrew Wright looks at the effort that goes into creating a quality typeface – and offers some advice on piracy

match the fonts, asks you to send the originals.

This is piracy, pure and simple, and shouldn't be tolerated. PostScript fonts can be downloaded into the PostScript files themselves – or into Didot's own export file format – so that the bureau shouldn't need access to the originals. With each font estimated to have been copied anywhere between three and eight times, the whole industry is suffering.

Just why do fonts cost so much? While many typefaces like Caslon and Baskerville have been around for years in one form or another, new ones are being designed all the time and it's an extremely labour-intensive industry.

Monotype have just released Columbus, a brand new serif face based on those used in 16th century Spain, as well as a slab-serif face called Amasis (like Timeworks' Rockface). Both are the result of many months of work by the com-

pany's in-house designers. Most of them don't start with a blank sheet of paper, although some of the more decorative faces can start out as simple ideas. When Adobe was researching the Plantin typeface, for example, the design team made painstaking casts of the original hot metal punches and for Caslon, the starting point was the original spec sheet from 1734!

Part of the hard work stems from the fact that most old hot metal typefaces aren't really suitable for use with computer technology and

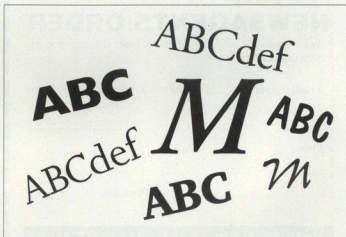
have to be slightly redesigned. There is also a surprising variation between different point sizes in the original punches which all have to be worked around.

While software piracy is pretty cut and dried, there's a grey area that's relevant to many ST owners and that is the conversion of fonts from one format to another. Although PageStream will use PostScript fonts directly, DA's Vector and Didot Professional need to convert them (and Calamus CFN fonts) into an intermediate format (DFN) first.

Technically this is a breach of the font licence, though Monotype readily admit that the licensing agreements haven't kept pace with computer technology. The good news, however, is that nobody is ever likely to be prosecuted for buying and converting fonts, provided of course that they are used by the registered owners on the single computer or output device for which they were intended.

If all this has put you off buying some decent typefaces, it shouldn't. A top quality typeface is a thing of real joy – you don't have to be a nut about them, like me, but you can certainly appreciate the difference between a PD conversion of a conversion and a well-designed original.

With cleaner curves and fewer vector points, they also take less time to rasterise and print – something that should certainly cheer up PageStream users!



Monotype type – few of the fonts started life as blank paper

Amasis

A brand new slab serif typeface from Monotype

One of Monotype's latest designs and the result of months of hard work

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So far in this series on starting up and running a small business with the help of your ST, we've looked at cashflow and profit and loss spreadsheets, marketing, databases, organisers and using word-processors and DTP to produce business proposals, direct mail and other important written material.

However, there is really only one all-important area in which the success of a business can be judged at the end of the day, and that's sales.

Most businesses could do with more. But if you're on your own, or have just one or two employees, how do you improve sales without spending more money than you can afford, and thus defeating the whole object of the exercise, which is to make more money?

Although there is no simple answer, there is a straightforward set of rules about selling any product or service that can help enormously, and which need cost you nothing, or at worst very little, to implement.

And your ST can be of enormous benefit in some of these vital areas.

To start at the very beginning – for this is where some salesman make their first mistakes – the question "How do I find new customers in the first place?" needs answering.

The very first thing you must do is research and select your market – note that some research is necessary even before you decide who your targets are.

Using your ST, keep a card index-style database of all the prospects you can find, including names, addresses, phone and fax numbers, the date(s) on which you contacted them, the results and any further important details you may

pick up. Be prepared for some hard work here. You won't always get through to the right person in an organisation straight away. Persistence without being too pushy is the name of the game here.

The aim is to get an appointment so that you can present your product or service. Find out as much as you can about competitor products that the prospect may be using, and research these as far as possible.

Use your ST to the full to help you when you make presentations.

Written and illustrated material which is easy for the potential customer to read and understand as you describe your product or service is vital – but don't use too many words. You can fill in the

Described as an electronic card file, Supercard, from B.Ware Software, is ideal for indexing prospect and customer records. The shareware version is available from most PD libraries, and registration is a snip at £10



For a small business like a plant nursery or garden centre wanting fast access to information on plants which suit particular conditions, Fastbase, by Andrew Brown, is an excellent database program. Being Shareware, it's cheap, too, even though it boasts a graphical interface and image storage

The perfect presentation

Pushing for increased sales doesn't mean being more pushy. Proper presentation is the key to success, says Richard Williams

detail and answer any questions verbally during your presentation.

Remember, there may be a group of people listening to you, so make your material rather like flash

cards, in quite large type, so that everyone can see, or print enough copies to go round.

And, to avoid the chance of your prospect forgetting about you even after a good presentation, make sure you have some more detailed material to leave behind, with your phone and fax numbers and your address as prominent as possible – within reason.

Once a prospect bites and becomes a customer, stay in regular contact. Customers are not likely to call you regularly to discuss what's on their minds, or how they plan to develop their businesses.

By regular contact, with the help of your database and perhaps a personal organiser like DigiTa's Day By Day, you can organise your "rounds" to ensure that you know as much as possible about your customers at any time.

Always remember that main area where business is lost is in the closing of the sale. There comes a point when you must ask your prospect or existing customer for a commitment.

The time for this varies from one situation to another, but when you judge the moment is right, be positive. Ask, for instance, when you

should deliver, or state "As I understand it, we have approval on . . ." Then get something down on paper, and, if appropriate, agree terms and even take a deposit as soon as possible.

And here's that straightforward set of rules for selling I mentioned earlier:

- Know your product and identify all its benefits to your customer
- Ask questions to find out your prospect's specific needs
- Listen carefully to the answers
- Watch out for tell-tale signs of boredom and don't overstay your welcome – make another appointment if need be, some people simply cannot be hurried into making their minds up
- Never promise anything you know you can't deliver
- Never allow your customer to see you have a problem
- Don't be too pushy – an aggressive approach can lose sales
- Don't criticise competitors – simply state why you believe your firm is better
- Don't argue with your customers – better to turn the point by asking questions
- Let customers know you use a computer in your business. Although it may not actually make your product any better – though in some kinds of business it can – the fact that you employ computer technology will give an impression of efficiency and technological awareness.

Monitoring your success

Just how much is your ST helping you in your business? It's fairly obvious that a well presented letter written with your wordprocessor and printed in letter quality on your dot matrix or inkjet is good for your image, and that much time can be saved with templates, mail merge and the host of other facilities offered by the latest WP packages.

But to find out how much the total activity on your ST is aiding you, it's sensible to monitor the progress of your system.

For instance, a kitchen designer using a computer-aided design program in place of paper and pens might be surprised to find out how much time he now saves (or loses!) with the new method.

However, it's not that simple, because even if the CAD procedure did take longer, the number of view and printing options, ease of amending a design, and general impression the computerised method makes

on the customer must all be taken into account.

Every small business is unique, and it's not possible to generalise about the ways to find out whether computerisation of a task is efficient as far as the overall success of a firm is concerned.

But if you have a sneaking suspicion that some tasks could be better done by other means, investigate and make the necessary changes.

It almost goes without saying that it works the other way round, too – there could be many tasks performed manually that your ST could do more quickly, or at a fraction of the cost, if only you could find the right software or peripheral.

If you're searching for such an item, or have managed to solve such problems yourself, why not write to me at Atari ST User and give your wants/solutions an airing? We may be able to help you – and you may be able to help many of our readers.

REPLAY 16

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 A/R 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.

- Features include:
- Volume control
 - Digital filtering and 3D frequency analysis
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The system runs on any ST or STE with 502K (1Mb min) is recommended, and comes complete with hardware, software and comprehensive manual.



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recording and editing program within the videomaster software. The Videomaster system also features a video sequencer.

The complete package contains the Videomaster video digitising and sound sampling hardware unit, TRI-Colour filters for colour camera use, comprehensive user guide and full system software.

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- ★ Imports a large range of file types including (IMG) larger than screen size, Spectrum 512, IFF, Degas, Neo, IFF (Amiga), HAM (Amiga) yes you can even print Amiga pics
- ★ Colour separation (Print colour on your Bubble Jet)
- ★ Dot pattern control
- ★ Pattern rotate
- ★ Ideal for T-shirt printing
- ★ Now with smooth control, get rid of those jagged edges.
- ★ Large range of dithering (dot pattern) modes.
- ★ Run in any resolution, view, manipulate and print in any other resolution
- ★ Colour catalogue function will print a miniature of each picture configurable between 1 to 8 across
- ★ Will drive 9 or 24 pin Star, Citizen Swift, Panasonic, NEC, Epson, Canon etc. The colour pictures possible with this new version will astonish you.

STILL ONLY £39.95 inc
UPGRADE FLEXIDUMP PLUS TO FLEXIDUMP
PLUS 2,
ONLY £11.95 inc. RETURN MASTER DISKS

T-SHIRT PRINTING RIBBONS

PRINT ON NORMAL PAPER IRON ON T-SHIRT

| | |
|--|--------------|
| 4 Colour Citizen Swift | £29.95 |
| 4 Colour Citizen Swift (Reload) | £14.95 |
| 4 Colour Star LC10 | £14.95 |
| 4 Colour Star LC200 9 Pin | £19.95 |
| 4 Colour Star LC200 9 Pin (Reload) | £12.95 |
| 4 Colour Star LC200 24 Pin | £29.95 |
| 4 Colour Star 24 Pin (Reload) | £14.95 |
| 1 Colour Citizen 120D/Swift | £11.95 |
| 1 Colour Star LC10 | £11.95 |
| 1 Colour Star LC200 9 Pin | £11.95 |
| 1 Colour all Star 24 Pin | £11.95 |
| 1 Colour Epson FX80/LQ400/MX80 | £11.95 |
| 1 Colour Epson LX80 | £11.95 |
| 1 Colour Epson FX100 | £11.95 |
| 1 Colour Panasonic KXP 1080 | £11.95 |
| 1 Colour Taxan/Canon 1080A | £11.95 |
| Heat transfer Pens 5 large red/orange/yellow/green/blue. Large pens have a marker size nib | £14.95 a set |
| Heat transfer Pens 5 small red/orange/yellow/green/blue. Small pens have a fine nib | £11.95 a set |

T-SHIRT RIBBONS NOW AVAILABLE IN RED, BLUE, GREEN, BROWN, YELLOW AND BLACK AND FOR A WIDE RANGE OF PRINTERS
 Phone our order line on 0923 894064
 (Answerphone outside normal hours)

Atari ROM Cartridge takes two 27256 or 27512 EPROMS. £11.95
ALL PRICES INCLUDE VAT AND CARRIAGE

How to order: Enclose cheques/PO made payable to
CARE ELECTRONICS or use Access/VISA.

MAIL ORDER
CARE ELECTRONICS
 Dept STU, 15 Holland Gardens, Garston,
 Watford, Herts, WD2 6JN.
 Tel: 0923 894064 Fax: 0923 672102

COLOUR PRINTER RIBBONS

Don't throw away your plastic printer ribbon cases when the ribbon wears out. Just take the top off, take out the old ribbon and reload it with a new one. It's simple. Full instructions supplied.

Reloads for-

| | | |
|--|------------------|--------------------|
| Star LC200 9 Pin 4 Colour (Normal Ink) | 1 Reload - £5.99 | 5 Reloads - £23.95 |
| Star 24 Pin 4 Colour (Normal Ink) | 1 Reload - £6.99 | 5 Reloads - £29.95 |
| Citizen Swift 4 Colour (Normal Ink) | 4 Reload - £6.99 | 5 Reloads - £29.95 |
| Panasonic KXP2180/2123 4 Colour (Normal Ink) | 1 Reload - £6.99 | 5 Reloads - £29.95 |

Ink ribbons also available in Gold, Silver, Magenta, Orange, Purple, Brown, Green, Blue, Red for a wide range of printers.
 Special re-ink for Panasonic printers and Star LC200 9-pin black 59ml bottle..... £14.95

HP DESKJET/CANON BUBBLEJET REFILLS

"CARE THREE PACK" will refill HP51608A Cartridge 3 times. The Canon BC-01/S48 Cartridge 3 times. Three Pack available in Yellow, Magenta, Cyan, Red, Blue, Green, Brown, Purple, Black £14.95 each.
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 "CARE SIX PACK" will refill HP51608A Cartridge 6 times. The Canon BC/01 Cartridge 6 times.
6 BLACK REFILLS ONLY £24.95
 Please state type when ordering

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Repairs undertaken to Atari computers at £49.95 inclusive of parts, labour, VAT and return postage/packing

Full technical support

Computers repaired in the quickest possible time

All machines will be overhauled with a full soak-test to ensure optimum reliability

Entrust your machine to the experts, full 90 day warranty

Repairs to disk drive and power supply also included (extra charge possible if found to need complete replacement)

Repairs to other Atari systems undertaken - phone for details

Upgrades and expansions supplied and fitted - phone for details

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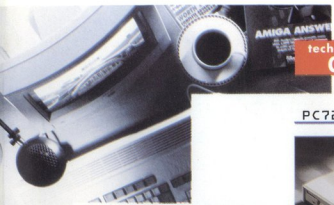
To take advantage of this exceptional offer, simply send or hand deliver your computer to our workshop complex, address details below, enclosing this advertisement voucher, payment, fault description, return address, along with your daytime and evening telephone number and we will do the rest.
 Should you require Group 4 Security return delivery, simply add £5.00 to the repair charge.

COLLECTION SERVICE AVAILABLE



WTS Electronics Ltd Chaul End Lane Luton Bedfordshire LU4 8EZ Tel 0582 491949 (6 lines)

(We reserve the right to reject machines which, in our opinion, are beyond repair. Normal charge applies)



technical hotline
0234 841882

POWER SCANNER



The award winning scanner from Power Computing allows you to scan up to 400 DPI in real-time greyscale, with an autoscan rate detect. The scanning software included allows you to edit and manipulate any image you scan.

POWERSCANNER£99

HI-SOFT SOFTWARE

High quality software for your Atari ST.

- LATTICE C v5.0£89**
- DEVPAK v2.0£29**
- HI-SOFT C£29**
- PROFLIGHT£29**
- DEVPAK v3.0£69.95**

ICD LINK

The "Link" from ICD includes an external SCSI host adaptor, allowing the Atari ST to connect to external SCSI devices e.g. external hard disk, floppy drives, optical drives and CD Rom drives which were originally designed for the Apple Mac, IBM PC etc. Just plug-in and no power supply is needed.

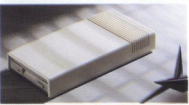
- ICD-THE LINK£69.95**
- AD SCSI PLUS£89**
- AD SCSI ST£79**
- ICD PRO UTILITIES£39.95**

SERIES 900 HD

The Series 900 HD features a buffered through port, optional battery backed clock, high speed 20ms seek rate, write protect switch, power supply and ICD interface and utility disk. [Many sizes available]

- SERIES 900 52MBQ£329**
- SERIES 900 80MB£399**

PC720B POWER DRIVE



The award winning external disk drive which includes a virus blocker, built-in Blitz Turbo and is able to boot from drive B. This is the ultimate in external disk drives for the Atari ST.

PC720B£65

PC720I

The Atari internal disk drive.

PC720I£39.95

PC720 OI

The official Atari internal disk drive (no case cutting), but must be the small version button version).

PC720 OI£45

PC720P

The Power Drive including PSU.

PC720P£55

DRIVE B CABLE

If you have an internal drive that is not compatible with "boot from drive B", this cable will solve your problem.

DRIVE B CABLE£9.95

BLITZ TURBO

Back-up disks at lightning speeds. Blitz copies from the internal to the external drive and cleverly by-passes your ST's disk controller chip. In around 40 seconds you can back-up an ST disk, what's more you can now switch between your disk drive and Blitz Turbo without disconnecting your blitz interface. Probably the best Atari disk copier on the market. (1988 Copyright act applies)

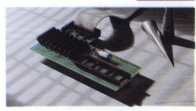
- BLITZ TURBO£25**
- ORIGINAL BLITZ TURBO£15**

SUPERMON

SuperMon comes with all the features of the "Ultimate Cartridge" and more. Some of the SuperMon features are, Program Switcher- allows two programs to be in the memory simultaneously and switched between at the touch of a key, Printer Spooler- allows files to be printed at the same time as other tasks, Comprehensive Debugger- disassemble programs and step through them, intercept OS calls, search memory or find where a routine is called from automatically, Diagnostics Function- check the internal functioning of your ST disk analyser, custom format disks, read/write sectors, hide files, Utilities- The SuperMon also has many utility functions available, including reset proof RAM disk, mouse trap function, time display, screen snapshot and 50/60Hz display toggle.

ULTIMATE CARTRIDGE£25
INCLUDING SUPERMON£39

ST RAM EXPANSION



The Atari RAM Expansion requires no soldering and plugs directly inside the ST using the latest capacity RAM chips Full fitting instructions are supplied.

The ST RAM Expansion is available either as a 2MB or 4MB RAM expansion.

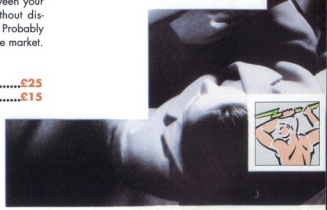
- 2MB RAM EXPANSION£99**
- 4MB RAM EXPANSION£169**
- 1MB SIMM FOR STE£25**
- 512K RAM STFM£45**

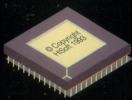
MONITORS

Philips CM8833 Mk2 colour monitor including cable and on-site warranty. Many other monitors are available from greyscale to multi-sync.

CM8833 MK2£239
INCLUDING CABLE

telephone 0234
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DataLite 2

DataLite 2 is a sophisticated, yet extremely simple-to-use, utility that effectively doubles the capacity of your disks by using a combination of advanced compression/de-compression techniques in the background. Some of the key features of this remarkable package are:

DataLite 2 Features

- Compresses all types of files; data files, applications etc.
- Works with both hard disks and all types of floppies; single-sided, double-sided and high density
- Can be installed automatically from the AUTO folder or just when you require its services
- Wide choice of compression algorithms so that you can optimise for size or for speed of access
- All functions are controlled from an easy-to-use desk accessory and you can even configure all the dialogs!

£49.95



SpeedoGDOS™ Font Packs

To complement the new SpeedoGDOS outline font system, we have prepared two packs of extra fonts - the Writer's Pack and the Designer's Pack. Both packages contain 25 extra fonts for use with SpeedoGDOS together with a useful manual that contains many hints & tips for using fonts within your documents as well as details of how to install them.

The Writer's Pack is intended for use by people who deal with reasonably large amounts of body text and contains a wide variety of easy-to-read serif and sans serif faces, useful in manuals and letters. The Designer's Pack is for more of an artistically-inclined and includes many striking and provoking fonts, ideal for posters, catalogues, brochures etc.

The Writer's Pack

Bell Centennial name/no

Bell Centennial address
ITC Eras medium

ITC Eras bold

Futura medium

Futura medium italic

Futura bold

Futura bold italic

Classical Garamond roman

Classical Garamond italic

Classical Garamond bold

Classical Garamond bold italic

Zapf Humanist bold italic

ITC Italia book

ITC Italia bold

Lydian Cursive regular

ITC Newtext regular

ITC Newtext regular italic

Zapf Calligraphic roman

Zapf Calligraphic italic

Zapf Calligraphic bold

Zapf Calligraphic bold italic

Zapf Humanist roman

Zapf Humanist italic

Zapf Humanist bold

Zapf Humanist bold italic

The Designer's Pack

BREMEN BOLD

Della Robbia roman

OCR-a

Aachen roman

Aachen bold

BALLOON LIGHT

BALLOON BOLD

Blippo book

Bodoni book

Bodoni book italic

Poster Bodoni roman

Poster Bodoni italic

ITC Zapf Chancery medium

ENGRAVERS' GOTHIC ROMAN

ENGRAVERS' ROMAN REGULAR

Formal Script regular

Forehand 575 regular

Hobo regular

Impress regular

INFORMAL ROMAN

ITC Starburst regular

Revex regular

ITC Souvenir bold

Staccato regular

Wedding Text regular

£59.95 each

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SpeedoGDOS™

£39.95 inc 14 fonts

SpeedoGDOS brings the beauty and simplicity of outline fonts to your Atari computer. Gone are the days of folders full of different sizes of screen and printer fonts - with SpeedoGDOS each font is scaled as needed to give great results on all compatible output devices. Some key features are:

- Requires remarkably little memory with flexible font caches
- The simple installation program provides a painless set-up
- Two powerful utilities/desk accessories give complete control over fonts and drivers once the package has been installed
- Compatible with most existing GDOS applications - you can even continue to use the older GDOS bitmapped fonts

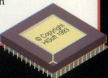
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MULTI-TOS

MULTI-TOS brings the reality of pre-emptive multitasking to your Atari computer, allowing you to run as many programs together as can fit in your computer's memory. Some key features of this powerful package are:

- Easy-to-use installation program makes it simple to get started with the system
- Adaptive prioritisation gives the most processing power to the program that needs it most, thus minimising 'lumpy' response
- Memory protection prevents one program from interfering with another e.g. if one program crashes, others will continue to run

£49.95



HiSoft

High Quality Software

Watch out for these Falcon stickers on our products-
Compatible, Enhanced and Exclusive.

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