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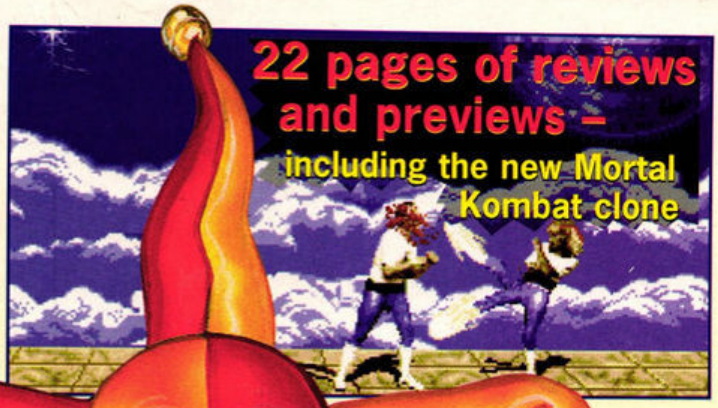
ST FORMAT

ISSUE 74 ■ SEPTEMBER 1995 ■ £4.25



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● ARABESQUE PREVIEW
● AUDIOTRACKER ● DIAMOND EDGE 3
● ARTPAD ● DIGITAL TRACKER
● SQUIRREL 4x CD-ROM DRIVE
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● SWEET SIXTEEN ● ON STAGE
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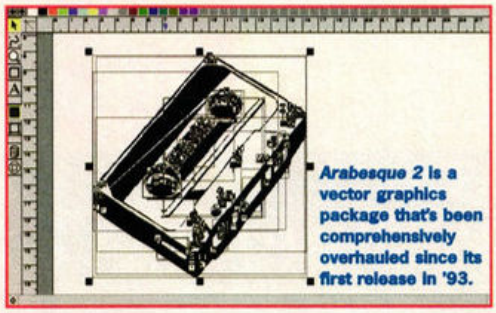

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ST FORMAT ABC Jul – Dec 1994 23,223 Member of the Audit Bureau of Circulations

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Production coordinator Emma 'Balancing Act' Woodward

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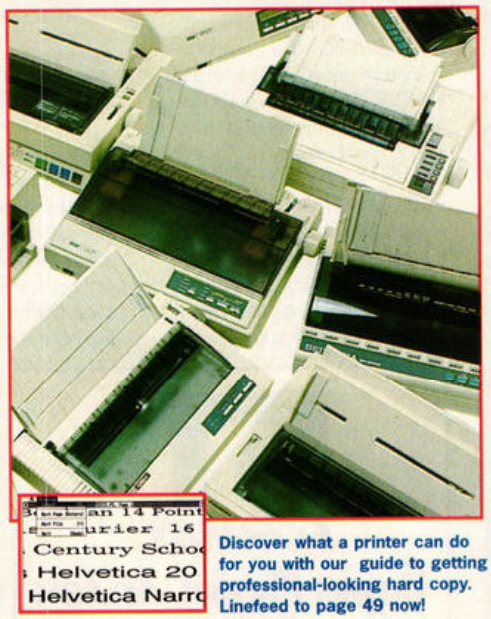

Discover what a printer can do for you with our guide to getting professional-looking hard copy. Linefeed to page 49 now!

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In the second part of this on-going series, Nick Peers examines those indispensable DTP boot programs and accessories.

70 DSP PROGRAMMING TUTORIAL
Harness the power of your Falcon's DSP with this new programming series. Paul Hills is your host.

COVER DISK 74

THIS MONTH...

ST FORMAT HyperMedia Index

HYPERGEM: Combine text, graphics and sound with ease using this versatile multimedia package. 1MByte and high resolution required. Also included is the *ST FORMAT Hypermedia Index*.
Uncompressed size: 400K

GOIN' DOWN: Save the ship in this exciting platform game for all STs (except TOS 2.06). Created with the help of *Sprite Works*.
Size: 126K

BOMBS AWAY: Blow your way clear of the various obstacles in this explosive *Dynablasters* clone.
Size: 40K

PICSCAN: Powerful image processing utility. Ideal for obtaining high-resolution art for *HyperGEM* and other multimedia applications. 1MByte and monochrome only.
Uncompressed size: 320K

PSYGHAM: Flush out those heavily buried files from your hard drive by creating up to eight virtual 'drives' with this essential utility.
Uncompressed size: 42K

WHAT IS: Identify those elusive files with this indispensable utility. Recognises 160 different file types.
Size: 41K

SEBRA: Monochrome emulator for colour monitors and TVs. Can be used to run *HyperGEM* and *PicScan* from this month's disk.
Size: 22K

BIGCOLOR: Enables monochrome users to experiment with the latest colour programs.
Size: 10K

BACKUP: Prevent 'damaged Cover Disk blues' with our back-up utility.
Size: 12K

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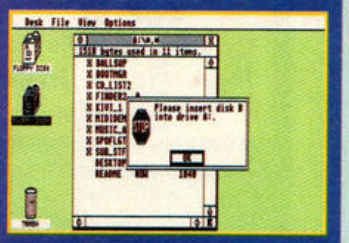


1 Assuming you have a single-drive system, insert your Cover Disk back-up into drive A. Double-click on the drive A icon to access it. Next, double-click on the drive B icon.

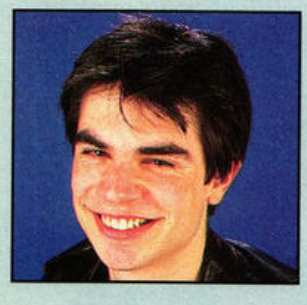
2 When prompted, remove the Cover Disk and insert your blank disk into drive A. Click on OK and a separate window should appear with the contents of the disk within it.

3 Next, click and hold down the left mouse button on the file or folder you wish to copy across to your blank disk. Drag the file over to the drive B window before releasing the button.

4 An alert box will tell you to insert disk A (your Cover Disk). Do so, click on OK and follow the on-screen instructions. You may have to swap disks several times during this process.

5 Just follow the instructions on the screen until the file or folder you wished to copy has been transferred - it'll be displayed in drive B's window.

Cover Disk



Nick 'The Boy' Peers introduces eight programs guaranteed to make you laugh. Well, smile. Okay, don't smile then, be miserable. You've still got eight more programs to try.

HYPERGEM and the STF MULTIMEDIA INDEX

HyperGEM by: Timothy Raines
Index by: Frank Charlton
Machines: All Ataris
Memory required: 1MByte
Resolution: ST high
Uncompressed size: 400K

Getting started

Copy HYPERGEM.TOS to a freshly formatted blank disk and double-click on it to dearchive the program and the *ST FORMAT* Hypermedia files.

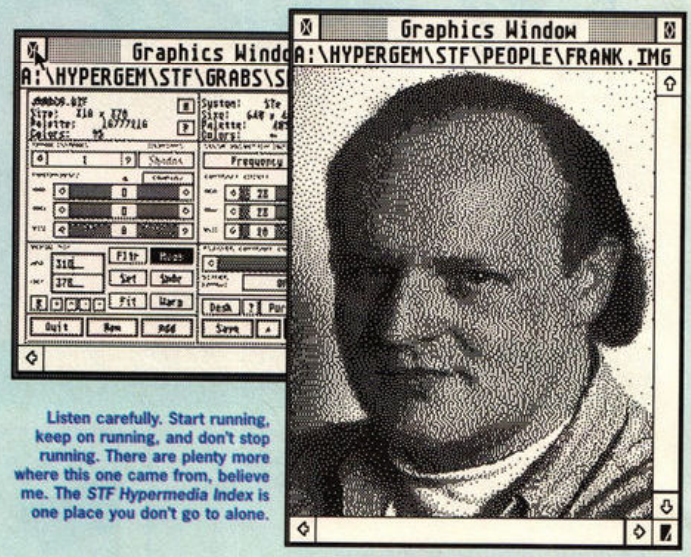
If you have a colour screen you'll need to install *Sebra* on the disk after dearchiving *HyperGEM*, then re-boot with the *HyperGEM* disk in drive A. Falcon owners need to unpack HYPERGEM.PRG before running it – just the job for *Disk Opus* from Cover Disk 71.

About HyperGEM

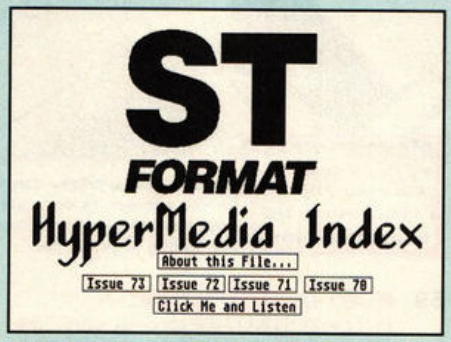
HyperGEM is a neat multimedia authoring package for all Ataris running in high resolution. As such, it enables you to create your own interactive multimedia presentations by combining text, graphics and sound samples. As well as giving you the software, though, we've also created a small demonstration of what can be done with it and you can see our efforts by loading *HyperGEM* followed by the STF_DEMO.HYP file.

There's a full guide to using and creating *HyperGEM* multimedia pieces in our main feature, starting on page 14, and you'll find additional info in the USERGUID.ASC file.

Note: *HyperGEM* was designed for STs, as a result, Falcon owners will have problems playing sound samples (see the On The Falcon panel below).



Listen carefully. Start running, keep on running, and don't stop running. There are plenty more where this one came from, believe me. The *STF Hypermedia Index* is one place you don't go to alone.



The *ST FORMAT* Hypermedia Index contains a wealth of inside information about the team behind the mag. *(Scurrilous lies, you mean – Mary)*

ON THE FALCON

HyperGEM was designed in *GFA Basic*, so you may experience some problems running it on the Falcon. In particular, it doesn't support sound on the Falcon, and will crash if you try to listen to the sound file provided in the HyperMedia Index– so don't click on the 'Click me and listen' box.

REMEMBER

Write-protect your Cover Disk. Slide the black tab so you can see through the hole.

Make a backup using the *Back Up* program on the Disk. Never run any software except *Back Up* directly from the Cover Disk.

Many Cover Disk programs are compressed to fit them on the Disk. Follow the step-by-step instructions on the right to decompress them.

Read the instructions in these pages and in any document file that is on the disk. They're there for a reason.

If you have problems with your ST, consult your manual. If you're still stuck write to: ST Answers, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW.

www.stformat.com

BOMBS AWAY

By: Ninth Wave Software
Machines: All STs (not TOS 2.06), joystick required
Falcon compatible: No
Memory required: 512K
Resolution: Low/medium
Size: 40K

Getting started

Open up the BOMBAWAY folder and run BOMBAWAY.PRG.

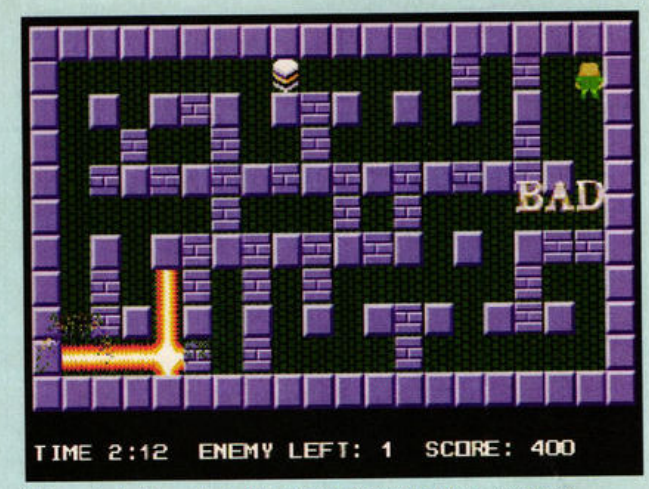
About Bombs Away

Bombs Away is a small, but well-formed, *Dynablasters* clone for all STs. Like *Goin' Down*, it was written by the creator of *Sprite Works*.

Your task is simple: just progress through the levels by laying bombs to remove brick-like obstacles and find the exit. As the obstacles are destroyed various bonuses and penalties are revealed.

Also blocking your way forward are an increasing number of enemies, who kill you on contact. Thankfully, they aren't immune to your detonations, so with a bit of skill and cunning you can trap and destroy them.

Bombs Away is freeware, so you don't have to pay for it.



Whoops, looks like you broke the first rule of terrorist action – never hang around to watch your bombs go off.

PICSCAN

By: Theo Ros
Machines: All Ataris (ST recommended)
Memory required: 1MByte
Resolution: High (Sebra compatible)
Uncompressed size: 320K

Getting started

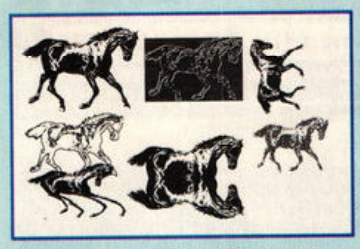
Copy PICSCAN.TOS to your blank disk or hard drive and double-click on it to dearchive its contents, then delete PICSCAN.TOS and run PICSCAN.PRG.

About PicScan

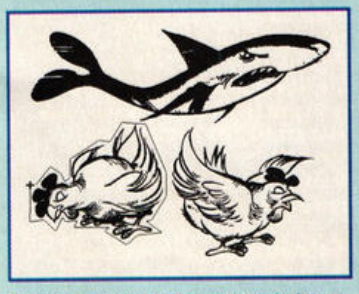
PicScan was originally designed for cutting small pictures from other files. You can also use it to convert high resolution graphics files between different formats, so it's useful for creating *Degas* and IMG files to use with *HyperGEM*. Finally, you can load in pictures and save them as assembly or *GFA Basic* listings for use in your own programs.

You can import files in one of three ways. First, you can search files for recognisable graphics to cut out and use in your own work. The most useful sources here would be fonts and resource files. Just load in the desired file and scroll through it looking for anything you can use. If you find anything, you can cut it and manipulate it as a block.

Alternatively, you can load in a file as a screen, enabling you cut out whichever part is required. This is useful for obtaining single images from clipart files, for example. You can also load the file as a ready-made block.



There are some powerful editing tools in *PicScan*. Just experiment until you find the effect you want.



Cutting elements of pictures to manipulate as blocks is a cynch with *PicScan*. It's easy to cut square blocks or irregular polygons.

Block functions

The block functions are the heart of *PicScan*. Selecting Edit block enables you to apply a variety of effects. You must then return to the main screen, where you can save the block, or paste it to the screen for further manipulation.

Another option is to 'wallpaper' the screen with your block, creating an attractive backdrop which could, for example, provide a new desktop screen. You'll need *Ease*, or *Deskpic* from Cover Disk 60, to put it in place.

FILE FORMATS

PicScan is one of those programs that support countless different file formats:
Picture files: ABM (*Arabesque*), CRG (*Calamus*), IMG, PI3, PC3, PNT, DOO, PAC, TNY/TN3, PCX (*PC Paintbrush*).
Blocks: PUF (*Arabesque*), BL3 (*Degas*/IFF block), BLK (*GFA Basic*), BK3 (*PicWorks*), PUF (*STAD* blockbuffer).
Other: CFN (*Calamus* fonts), BMP (PC *Windows* bitmap), CP? (CPX icon), ICN (ASCII), RSC (GEM resource file).

And finally

The *PicScan* program also comes with 15 picture files for you to try out and admire, plus seven textures in IMG format and two examples in assembly and *GFA*. Full details can be found in the PCSCN26E.TXT folder.

PSYGHAM

By: STectre
Machines: All Ataris, hard drive recommended
Memory required: 512K
Resolution: Any (run PYSG_CFG.PRG in medium or high resolution)
Uncompressed size: 42K

Getting started

Copy PSYGHAM.TOS to your hard drive and then double-click on it to dearchive the PSYGHAM folder along with its contents. It's a good idea to read the PYSGHAM.DOC before running the configuration program.

About Psygham

Pysgham enables you to store commonly accessed file-paths (such as D:\WP\TEXT\LETTERS\PERSONAL\) as 'virtual' drives (such as 'H:\'). These are then stored on your Atari's desktop, so you no longer have to wade through numerous directories to reach the file you require.

You set up your virtual drive (*Psygham* ensures it isn't one that's already in use) by running PYSG_CFG.PRG and selecting the paths when prompted. *Psygham* supports up to eight of these virtual drives and accessing them is incredibly easy.

PSYGHAM.PRG should be installed as an Auto program – see the accompanying documentation to find out where it should go within the Auto folder. *Psygham* is postcardware – if you like it, send the authors a postcard to let them know you'd like to see them develop more programs.

BIGCOLOR

By: Jon Dalton
Machines: All STs
Memory required: 512K
Resolution: High only
Size: 10K

Getting started

Ensure that BIGCOLOR.PRG is in your Auto folder. It should run before all other Auto programs.

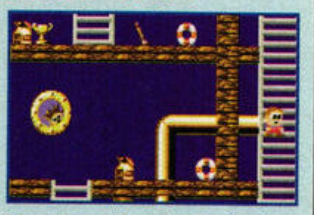
About BigColor

As hinted at by Andy Curtis in The Score this month, here's one of the most popular colour emulators for high resolution monitors. It should give you some idea of what's currently possible (or not, as the case may be) in this tricky field.

www.stformat.com

GOIN' DOWN WITH THE CAPTAIN

By: Ninth Wave Software
Machines: All STs (not TOS 2.06), joystick required
Falcon compatible: No
Memory required: 512K
Resolution: Low/medium
Size: 126K



The only possible explanation for the number of times you have to save the ship's complement is your stubborn determination to travel Dodgy Class on all cross-Channel trips.

Getting started

Open up the GOINDOWN folder and run GOINDOWN.PRG. You'll need a joystick in order to play the game.

About Goin' Down

Goin' Down With the Captain gets straight to the point: you're crossing the channel when your ship springs a leak and starts to sink. To save everyone, you must descend into the bowels of the ship and retrieve as many buoys as there are posts on the top deck.

As you search for the buoys you'll notice the water rising quite rapidly. Pipes start springing leaks and an infestation of lethal crabs looks like being the final nail in your watery coffin... but fret not! You can hold your breath for a few seconds and there are air bubbles in the water which can replenish your dwindling air supply.

You can also mend pipes by leaping over the leaks to patch them up, and if you find a lever you can pump out some of the water by waggling the joystick. Even the crabs can be ignored for a while if you get hold of some crab repellant spray. You can also pocket any valuables abandoned by the passengers if you fancy a bit of mercernary bounty hunting.

Nevertheless, you cannot delay the inevitable indefinitely. If you don't get the buoys to the surface in time the ship will sink with all hands lost. You can only carry two buoys at once – not a problem on the first ship, but later you need common sense when selecting which buoys to get first.

Later levels feature locked doors, so you'll also have to search for the keys to unlock them in the right sequence. Read GOINDOWN.DOC for more info.

SPRITE WORKS

***Goin' Down with the Captain* and *Bombs Away* were written to promote *Sprite Works*, a *GFA Basic* add-on designed to boost *GFA's* profile as a games engine. To find out more about it, copy SPRWRKS.TOS to a blank disk and double-click on it to dearchive the DOC file contained therein. You'll also find a full review on page 36.**

SEBRA

By: Patrik Persson
Machines: All Ataris
Memory required: Depends on application
Resolution: Low/medium
Size: 22K

Getting started

Open up the SEBRA folder and copy the SEBRA.PRG into the Auto folder of your boot disk. Read SEBRA.DOC for information on the program itself and instructions for configuring it.

About Sebra

Sebra is a monochrome emulator which enables colour users to see for yourself what high resolution packages are like. It's no substitute for a dedicated monochrome monitor, but will enable those of you with a colour display to use *HyperGEM* and *PicScan*.

THE SCORE

Nestling in the cryptically named THESCORE.74 folder is FUNKY.MID – a MIDI file by our newly christened Music and MIDI Editor Andy Curtis. It should play on all GM-MIDI synths. There's also a text file in there – leap forward to page 64 to find out more.

WHAT IS 6.7

By: Bill Aycock
Machines: All Ataris
Memory required: 512K
Resolutions: Any
Size: 41K

Getting started

Just copy WHATIS.ACC to the root directory of your boot disk or drive (or whatever folder you your accessories are stored in). Re-boot your machine to install *What Is*, which is accessed from the menu bar. Alternatively, change the name from WHATIS.ACC to WHATIS.PRG and run it directly.

About What Is

What Is enables you to load files and find out what they are designed for. Recognising over 160 different file types, *What Is* bases its analysis on the header of the file, and not its extension (so it's useful if you come across a ZIP file with an LZH extension for example). Full details, including registration costs, can be found in WHATIS.DOC.

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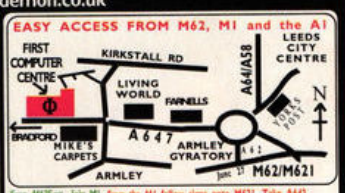

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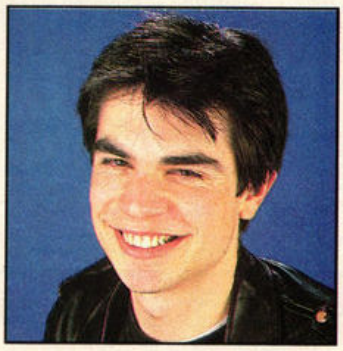


STF News...

All the latest news from around the globe, collected and analysed by Nick Peers.

SNIPPETS

Merlin PD is now distributing 999 Software titles, including *Alien Thing*, which is available for £19.99 (watch out for a review next month). Other new products include *Worship Me*, a Falcon-only RPG from Bloodhouse.

Merlin will also be handling a number of add-ons for *SubStation*, including several new levels disks from independent sources, and the Combat Pack from UDS itself. This will incorporate MIDI cables and several utilities for MIDI-link users, including a level editor. Merlin can be contacted on ☎ 01452 770133.

SubStation has sold bucketloads, and with new levels and a special Combat pack, looks like selling even more.

Labyrinth MIDI Music distributes MIDI songs in a variety of formats, including the all important Type 0 and 1 Standard MIDI formats supported by most Atari sequencers (including *Sweet Sixteen*, reviewed on page 34). Each song costs £6, and you can also buy medley, album and style disks. Orders of ten or more songs brings a healthy 20 per cent discount. Call Labyrinth on ☎ 01254 678915 for details.

The Ground Floor Community Centre is desperate for donations of any unwanted Atari hardware and software. Based in West Yorkshire, the Community Centre provides "individuals and small community groups who lack resources of their own" with computer equipment. Its single STE is proving very popular.

If you're feeling generous, and you like the idea of encouraging more people to stick with the ST scene, contact the Centre at: Holme Street, Hebden Bridge, West Yorkshire, HX7 8EE, or on ☎ 01422 844991.

Zip drives: coming soon

Backing up its recent announcement that stopping in-house development doesn't mean it's abandoning the Atari market, HiSoft is back with a new product set to turn the hard drive industry on its head...

The IoMega Zip drives are designed to take the place of the ageing SyQuest system in the removable media market. Designed as a portable mass storage device for the SoHo (Small Office/Home Office) market, the Zip drive is a small SCSI device which stores data on removable 100MByte cartridges. Removable media drives have become popular as backup devices, and also for transferring files – especially in the professional DTP market.

Zip drives are smaller, faster and considerably cheaper than SyQuest drives and cartridges. The Zips are good enough to use as standalone hard drives if necessary, with access times comparable to some hard drives and a sustained data transfer rate of 1MByte per second.

It's the price that's got the industry buzzing with interest, though. HiSoft will be selling a starter kit, consisting of the Zip drive itself, Atari software and one 100MByte cartridge, for around £180. Additional cartridges will sell for £15.99, with reductions if you buy packs of carts. At those prices, backing up large hard drives becomes a realistic proposition.

Iomega's Zip drive, distributed in the UK by HiSoft, looks like a sure-fire winner.

ST-specific software

HiSoft is an IoMega-approved distributor, and is keen to stress that it's working on Atari-specific software for the Zips. As a SCSI drive, the Zip will work like a hard drive, but HiSoft's software will provide access to extra features, such as automatic ejection and password protection.

Due to massive demand (not to mention press interest), IoMega has chosen to wait until August before launching the Zip drives in Europe. HiSoft should have stocks soon after. We hope to have one in for review soon, so watch future issues of *ST FORMAT* for our verdict. If it's as good as it sounds, HiSoft may need some heavy artillery to get it back...

FRANK CHARLTON

Daze waves goodbye

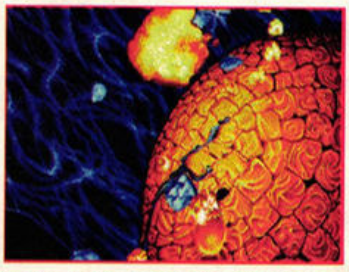
With the final shipping of *Stardust* comes Daze's announcement that it will no longer be releasing STE games. However, it has decided to go out with a bang with two spectacular special offers. Both offers are for *ST FORMAT* readers only.

Daze says: "An offer this good deserves some indecent exposure". That's as maybe, but pictures like this are still a load of filth in our humble West Country opinion.

First, *Stardust* can be bought directly from Daze for just £5.99 (including P&P). As we said back in issue 68, "Not only will it [Stardust] show off your machine, it'll blow your mind as well." Not surprisingly, it scored a massive 94%.

Second, fans of the *Ishar* series will be pleased to learn that *Ishar 2* (*STF* 70, 90%) is also available for just £5.99 – while stocks last.

Interested parties can send their cheques or postal orders to *ST FORMAT* offer, Daze Marketing, 9A Canfield Place, London, NW6 3BT.



What a extravaganza! What a game! What a price! *Stardust* could be yours for just £6.

www.stformat.com

Software spree!

Remember those nice people at Audiogenic, who gave away over 1,000 copies of *Helter Skelter* to *ST FORMAT* readers? Well, hot on the heels of that offer are two more deals which emphasize Audiogenic's commitment to the ST games market.

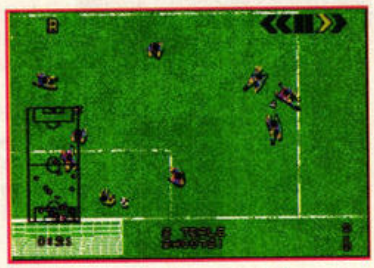
First up is *European Champions*. Audiogenic coded this football simulation for Ocean at the beginning of last year, but the game was only released through the Home Computer Club, which no longer supports the ST. Audiogenic has got hold of the remaining stock and is releasing it into the general market at just £14.95. It runs on all STs with 1MByte of memory.

Buy by mail

Second, Audiogenic has gone into the mail order business by purchasing £100,000 worth of ST software, which it will be selling on at discounts ranging from 40 to 90 per cent. There are around 60 titles to choose from, including *Cannon Fodder*, *Premier Manager 2*, *STOS 3D* and *Fun School 3*, as well as a number of compilations. Everyone who places an order receives a free game, and there's an additional discount of £5 for orders of at least £50.

Peter Calver, managing director of Audiogenic, explained that: "People kept telling us they couldn't find our ST games in the shops – in fact, they had trouble finding anywhere that even stocked ST software. Now they can come to us direct, not only for our games, but also for a range of other companies' products."

To get hold of the list, just send a stamped addressed envelope to Customer Services, Audiogenic Software, Unit 27, Christchurch Industrial Centre, Wealdstone, Harrow, HA3 8NT.



European Champions is a new football game for the ST. Well, not exactly new – it's been under wraps for a year or so until now.

OMEn is ready

In issue 68's STF News we announced details of *OMEn*, the first cross-platform multitasking system to enable you to create programs on your ST and run them on Amigas, PCs or Macintoshes – so long as they are also running *OMEn*. Versions of *OMEn* for the other platforms are still under development, but the Atari version is now available. Floppyshop has been appointed UK distributor by the development team, Esquimalt.

By the time you read this most PD libraries will have a cut-down, time-limited shareware version. The full version costs £20, which sounds like excellent value. After all, you're getting a complete multitasking operating system which is compatible across a wide range of computing platforms.

Programs for use under *OMEn* can be coded in assembler or C. A number of developers have already signed up for the package, clearly excited at the prospects of developing for a potentially gargantuan multiplatform market. For more details, contact Floppyshop on ☎ 01224 586208.

SUPERSIZE PRINTOUTS

JCA Europe is now offering Atari owners the chance to print out image data in colour in sizes ranging from A4 to a massive A0.

Printouts can be made on a range of materials, including PhotoGloss Paper and BackLit film, as well as normal paper. Prices start at £6.50 plus VAT and delivery. Contact JCA on ☎ 01734 452416 for the full picture.

STARIOLAND 2?

***STarioland* has already sold enough copies to warrant a sequel. *Space Ace STario* will, shockingly, be set in space. According to James Matthews of Top Byte, it will: "Be in a similar vein, but totally different." It will retail at £18.99 (plus P&P).**

Also in development is *Outrider*, a sci-fi strategy game for all 1MByte Ataris. Due in early September, the game features three armies (human or computer controlled) and ten built-in worlds ready to be conquered. There will also be a level editor to enable you to create your own worlds from scratch.

Top Byte can be contacted on ☎ 01622 763056.

INTERNET NEWS

Ad.Lib BBS was recently struck down by a stray streak of lightning. Over 1GByte of data was wiped and the filebase has been completely decimated. It is in the process of being re-built from scratch.

Ad.Lib's many users have already swung into action to help re-build the file bases, and, as Andy Curtis said, "Deserve all the credit for breathing life back into the system. Ad.Lib users really are the best a SysOp could wish for."

Ad.Lib PD, which operates from the same filebase as the BBS, cannot honour orders for the time being. Send flowers, chocolate, sympathy and sausages to Andy at: andy@adlib.co.uk, or log on to Ad.Lib on 0191 3702659.

Mark Smith's Web pages continue to be updated at regular intervals. The latest news to hit the pages includes details of an Atari show to be held in Dallas in the autumn, Lexicor product news and the official launch of Dave Munsie's Web page. The reviews section features some new Jaguar games, including *Sensible Soccer*. The pages are at: http://www.mcc.ac.uk/~dlms/atari.html.

www.stformat.com

EuroNews...

Our man in Dusseldorf, the redoubtable Don Maple, brings you all the latest news from Europe – that big place on the other side of the channel, where they speak foreign.

Whiteline Gamma

The Atari CD-ROM avalanche continues unabated with this brand new offering from Germany. Following on from the success of *Alpha*, *Gamma* is the latest compilation CD-ROM in the *Whiteline* series (there is no *Beta*). This CD-ROM is of particular interest to the English-speaking audience, because all the English language programs are stored in a separate directory.

The compilation contains full registered versions of the following programs: *Poison!*, *TurnUs*, *1stGuide*, *Rolfi*, *The Original*, *LAZAZ*, *Laser Design Professional* and *Easy PGP*. In addition, it includes the complete Delta Labs PD library, which comprises 170 floppies, 1,000 TrueType fonts, 1,000 *Calamus* fonts, various programming languages and tools, 130MByte of Falcon demos, games, utilities, animations, sounds and graphics. There is 650MByte of software on the disk.

After *Alpha* comes... *Gamma*, the latest CD-ROM from Germany. It has an English subdirectory for the monolingual, so you won't even need to shout.

In Germany the Gamma goes for DM79 (about £35). Delta Labs is still looking for a British distributor, but in the meantime the CD-ROM can be ordered directly from: Delta Labs Media, Briller Str. 40, 42105 Wuppertal, Germany.

Magazine revolt

Atari developments in Britain have in many ways mirrored those in Germany. In the golden days of the ST both countries sported three major glossy magazines.

A couple of years ago the three German mags amalgamated into one – *ST Computer*. A few months ago *ST Computer* decided to venture into the Macintosh arena, influenced, no doubt, by the advent of *MagiCMac*. This soon resulted in a permanent fixture called MacOpen, which is steadily increasing in size and currently accounts for one third of the magazine. The shift annoyed many devoted *ST Computer* readers and resulted in numerous flame wars on the bulletin boards.

A German newcomer, *Atari Inside*, is improving steadily, but it is still only bi-monthly. As a result of all this *ST FORMAT*, which is already widely available in Germany, is gaining in popularity.

SNIPPETS

The very successful proTOS show (see Show Report, *STF* 67) is back. This year's proTOS will be held at the same exhibition grounds as last year's, in the vicinity of Bonn, Germany, during the last weekend in November.

Atari Benelux, the last remaining continental subsidiary, closed on 1st June. This leaves Atari UK, aka 'Atari Europe', as the only branch outside the United States.

The PowerPC *MagiCMac* mystery has finally been solved. As exclusively revealed to *ST FORMAT* by the author himself (see News, STF 72), there will be no native PowerPC version. However, there is now a version of *MagiCMac* which runs under Mac emulation on a PowerMac. Even though this double emulation impedes overall performance, it still runs your software faster than a TT does.

The German price of the Falcon Mk2 Atari clone has gone down by DM500. The machine now costs 'only' DM4498 (about £2,000). Another company, Soundpool, now offers Falcons in a 19-inch rack version that includes an S/PDIF interface, four additional MIDI ports, an 850MByte hard disk and much more. This version costs DM5000 (about £2,300).

PD OF THE MONTH

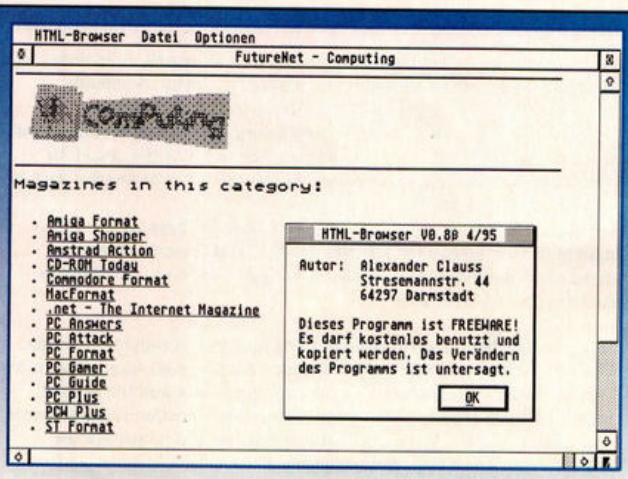
Up to now, gaining access to the World Wide Web has been difficult to impossible for Atari users – but not any more. Enter Alexander Clauss, who has written a stand-alone freeware HTML browser.

The program is still in the early stages of development, so there are quite a few limitations, but by the time you read this most of them should have been ironed out. At the moment *HTML Browser* only works off-line on saved HTML documents, and the images are still only black and white.

On the other hand, the browser is very cleanly programmed and can also be run as an accessory. It's multitasking-friendly and *SpeedoGDOS*-compatible, so you have access to a wide variety of fonts.

Alexander welcomes any suggestions and says further development will be dependent on user feedback, so write to: Alexander Clauss, Stresemannstr. 44, 64297 Darmstadt, Germany or send an e-mail to: aclauss@rbg.informatik.th-darmstadt.de.

This brand new freeware HTML browser from Germany enables you to view HTML documents – but it only works offline. Still, it's a start.



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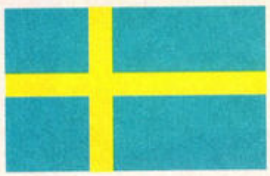

A weekend in Sweden

Roving reporter John Allen brings you news of the recent Atari gathering in Göteborg, Sweden.

The chaps from the Falcon Pro Centre were only too happy to help out Atari users with advice and tutorials on the latest versions of *Twist* and *Papyrus*.

The Nordik Atari Show was organised by the Swedish Atari Club (Svenska Atariklubben), to celebrate the club's tenth birthday. It took place in Samskolan, a local school in central Göteborg, and ran from 16 to 18 June.

The organisers wanted the event to be different from mainstream computer shows, so they focused it on the user. Visitors were still able to buy Atari hardware and software, but the main thing was that enthusiasts were able to talk to other enthusiasts. Visitors came from all over Sweden, and even from Denmark, and some brought along their STs and Falcons for everyone else to admire.

Competitions

The agenda included a hackers' convention. Demo groups took up space in some of the classrooms, and coded day and night during the show, behind closed doors. Most of the demos were created on Falcons, and the standard was very high.

The assembly hall was used for seminars and MIDI and music demonstrations. CyberSTrider, aka Denesh Bhabuta, gave a talk on the future of Atari computing and the benefits of the Net.

The main thing was that enthusiasts were able to talk to other enthusiasts

Addiction Software was also on hand to demonstrate its new multimedia sensation, *Rainbow 2*.

Exhibitors

The Falcon Pro Centre was demonstrating the latest versions of *Twist* and *Papyrus*, and giving interested people short tutorials on how to use them. It was also showing off beautiful tower cases for the Atari range, and taking orders for goodies from its catalogue.

Addiction Software, author of the multimedia Falcon program *Rainbow 2* (*STF* 73, 96%), was talking to users and showing off the program's many features. *Rainbow* is very powerful, and boasts picture, sound, photo, slideshow and sprite studios, along with a fully customisable user interface (see page 20 for more). Addiction was also talking about its forthcoming Falcon-only game, which will be a cross between *Civilisation* and *Populous*, but on a larger scale.

Unique Development Sweden (UDS), the company behind *Substation* and *Obsession*, was present in force and had many machines for visitors to try out its games on. Game players could also waggle Joypads on the Disk 1 (Disk Ette, in Swedish) stand, where Jaguars were running *Doom* and *Alien Versus Predator*.

Good ol' Blighty was represented by 16/32 Systems, Compo and CyberSTrider. Nick Harlow from 16/32 was selling a range of games, such as *Ishar 3*, and had *Crawly Crypt* CDs (page 33) and JagPads at very tempting prices.

Compo was exhibiting its vast range of software and hardware, including a cartridge port IDE CD-ROM interface for Mitsumi drives. These are very easy to set up, and very fast. Special show offers included 14MByte Falcons, memory upgrades, and a whole host of software.

CyberSTrider's Denesh Bhabuta was displaying *MagiCMac* on a portable Macintosh. This generated a lot of interest, especially as it is around seven times faster than an 8MHz ST. He had nine programs loaded into memory at once on an 8MByte Macintosh, and it was still unpacking files at phenomenal speed.

A day out

Around 150 people visited the show – slightly fewer than expected. However the feedback was very positive, and another show is planned for next year. With better advertising, the organisers hope that it will be a bigger event. *stf*

JOHN ALLEN

Unlike the bigger Atari shows, the Nordik event was more about sharing advice than off-loading loads of hardware and software.

WORLD WIDE WEB

Denesh also launched the Toronto Atari Federation disk set to install a WWW browser on the Atari. Sadly, a succesful link could not be set up at the show. Internet service provider Tripnet was also present, showing off its range of services on a PC. It provides Internet access for as little for SKr100 (£8.50) per month.

Several shareware programmers were promoting their software. Christian Andersson was showing off an early copy of his GEM-based WWW browser, and Kari Heimonen, the author of *Music Box* (featured on Cover Disk 71), was demonstrating the latest version. He programmed *Music Box* on a vintage ST with no internal hard drive and only 1MByte of memory... the ST is still a very capable machine.

Along with Copson Data, which was showing off *Zero X*, there were a couple Swedish BBSs, and many BBS sysops.

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MULTIMEDIA MAGIC

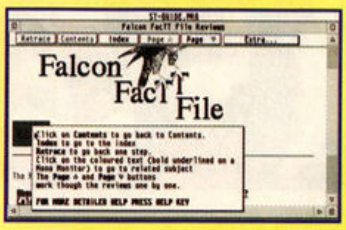
Combine the passion of Shakespeare, the rhythm of Elvis, the colour of Van Gogh and the panache of Bogart in a spellbinding presentation. Frank Charlton explains the magic of multimedia.

Bored with graphics? Tired of drab sound samples? Sick to the back teeth of wading through reams of eye-popping text? Why not banish your computing blues and revitalise your ST with a different approach – one which throws your musical compositions, artistic masterpieces and purple prose into a virtual melting pot, fusing them into one exciting blend of video, audio and information – multimedia!

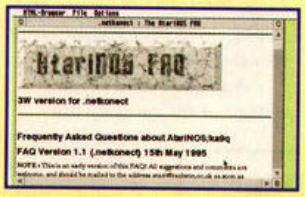
Your mate's got an ST, and he's tired of your boring letters – but what can you do? Arm yourself with some multimedia ammo, that's what. Send him a multimedia letter, so he can actually see and hear what you've been up to.

Multimedia is about enjoyment, whether you're the creator or viewer

Even a few low resolution pictures strung together with a bit of music would be brighter than another page of text. Slap in some samples of the dog barking or your new baby crying, and suddenly everything comes to life.



STGuide runs on all Ataris, but unfortunately it has no support for sound.



HTML Browser displays pages from the World Wide Web – but not on-line.

More to the point, you can have great fun creating a multimedia presentation. You could end up exchanging multimedia letters with lots of people.

Multimedia?

Simply put, multimedia is the combination of all of the things you already do with your ST – writing music, drawing in an art package, sampling snatches of sound. You don't have to be Picasso or Jean-Michel Jarre, either. Multimedia is about enjoying yourself, whether you're the creator or the viewer of a presentation.

It can be useful, too. If you're doing a presentation for school or a display for work, why not take the multimedia route? If you present your information in bite-sized chunks all wrapped in dazzling sound and graphics, you'll keep the audience's attention until the end.

Multimedia can also be educational. Instead of drilling your child parrot-fashion, arrange your information so he or she wants to learn. Alternatively, how about presenting your hobbies or interests in a way that shows the world how much fun you have?

Multimedia is fun, and it's for all of us. It's easy to create effective and enjoyable shows, and your ST is just waiting to get in on the act. Here's how…

HypeBase is a neat multimedia system for medium resolution STs.

Connections can play sound, show text and graphics, and even display animations.

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BE INTERACTIVE!

So what's the difference between an interactive presentation and a old-style slideshow? Simply speaking, interactivity means that whoever is viewing the presentation has some control over how it works.

A slideshow or 'rolling demo' is very linear – it has fixed start and end points, and can't be interrupted or diverted. You sit back and watch, pretty much as you watch television.

An interactive presentation enables you to skip to anything that catches your interest. You have control, so you can follow your own route, rather than the creator's.

Interactive presentations are better at holding your interest, because you go where you want to, and they present information in bite-sized chunks, making it easier to take on board.

The Real World...

With the right tools, it's easy to add 'real world' sounds and images to your presentation.

While there are lots of picture files and sound bites available from PD libraries and BBSs, it's much more fun to personalise your work with your own 'real world' resources.

Sound Samplers

For STs, the king of samplers has to be HiSoft (☎ 01525 718181). Together with AVR it has produced kit like MasterSound 2, Replay 16 and Clarity Falcon. Connect your sampler to an audio source like a cassette player – most samplers won't accept a mike directly, so you'll have to record your sounds onto tape first.

Scanners

Hand scanners are effective tools for capturing images from photographs and drawings, such as the mugshots we used in our *HyperGEM* Cover Disk demo. Power Computing (☎ 01234 273000) offers the excellent PowerScanner (£99), which can even grab images in 16 shades of grey rather than dithered mono images.

For a superb mono scanner, try the Alpha Scan Plus (£119.99, First Computers, ☎ 0113 2319444) which comes with MiGraph's excellent *TouchUp* for tidying up 'noisy' scans, and *MergeIt* for combining separate scans to make bigger images.

PhotoCD

Having your photographs developed on to PhotoCD isn't cheap, but with a half decent camera this method produces better quality images than anything else. You'll need a CD-ROM drive (see *STF* 72), and software that can read and convert the images – for example *ImageCopy 3CD* (£34.95, FaST Club, ☎ 0115 9455250)

Video Digitisers

Got a camcorder, or a video tape full of Super 8 home movies? If so, a video digitiser will enable you to import images from your videos into your multimedia work.

HiSoft's VideoMaster (see page 17) is a true multimedia digitiser, since it can do video and audio at the same time.

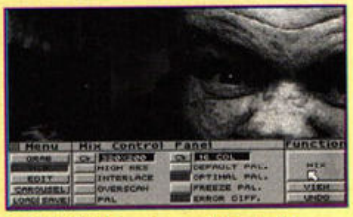
Rombo's Vidi12ST (£69.99, First Computers, ☎ 01506 414631) can grab 12-bit images (up to 4,096 colours) from a video source. You need a camera or VCR with a rock-solid freeze frame to get the best results, but it's easy to use and extremely good value for money. Falcon owners should watch for the Exposé (£299) from Titan Designs (☎ 0121 4141630). It's a full 24-bit TrueColour frame grabber which produces superb results even from moving video – watch for the full review next month.

Software Tools

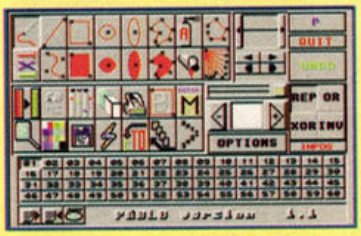
You'll also need various tools for editing and tidying up your snatches of real life. The PD scene abounds with classy art packages like *CrackArt*, and commercial packages with helpful manuals exist too – try *EZArt Professional* from FloppyShop (☎ 01224 312756).

You can usually pick up HiSoft's samplers fairly cheap second-hand.

Stunning TrueColour image grabbing with Exposé and APEX Media – from Titan and BSS.



Rombo's VIDI12 works on all Ataris – it's cheap, cheerful and capable.



Don't forget the very capable Pablo Paint from Cover Disk 70, either.

Floppyshop's forthcoming Positive Image makes it easy to clean up scanned images like this.

ON TAPE

What if you want to send your Auntie Hilda a multimedia display of your latest holiday in sunny Spain, but she hasn't got an ST? Why not record your work on to standard videotape? It may not be interactive, but it's still more fun than a letter, and it's easy to do.

The cheapest method is to connect the STs RF output to the VCR's RF in. Take the cable which you would use to connect your ST to a TV set, and connect the other end to the socket on the video marked either 'RF in' or 'Antenna in' – *not* the one marked 'Video in'.

This method may result in fuzzy recording, because the video signal has been processed by the RF modulator in both the ST and the VCR. For a sharper picture, call Meedmore on ☎ 0151 5212202. It should be able to supply a lead to connect the STs monitor output to your VCR's Video in jack or SCART connector.

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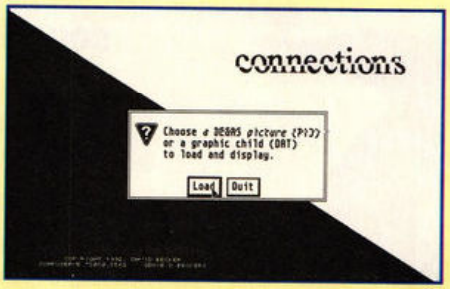
Multimedia mail

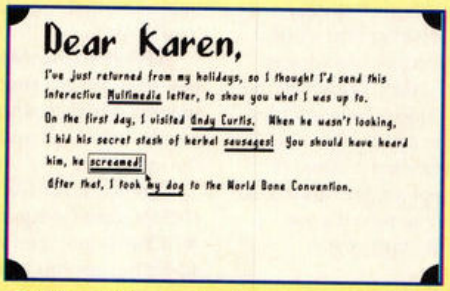
As a gentle introduction to the darker side of multimedia, here's how to create an interactive multimedia letter using the PD program *Connections*. *Connections* requires a high-resolution monitor, or an emulator such as *Sebra*, and it's well suited to this kind of task.

***Connections* should be available from most PD Libraries – you can also download it from Ad.Lib BBS (0191 3702659), along with our example letter. Alternatively, call Ad.Lib PD on ☎ 0191 3702496 and ask about the *STF* multimedia example disk.**

1 Use an art package to create the basic start screen, and save it as a high-res *Degas* PI3 picture. Underline the bits you want to add links to.

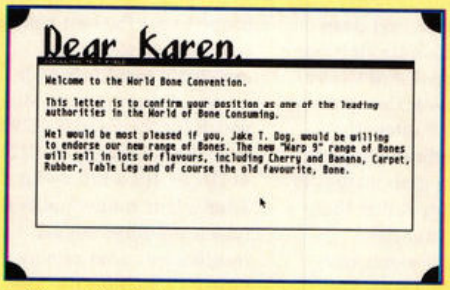


2 *Connections* comes with a utility to chop PI3 images into smaller chunks, so you can display them in windows when a link is clicked on.



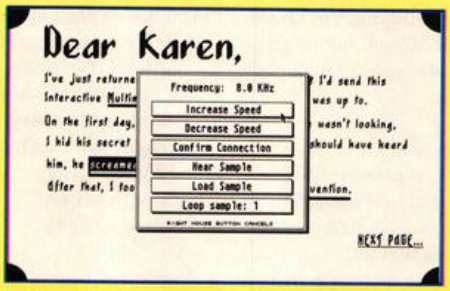
3 Adding a link is easy: drag the mouse over the area you want as a button, then release the mouse button.

4 You might link the word 'screamed' to a sound sample. *Connections* uses samples in SPL format.

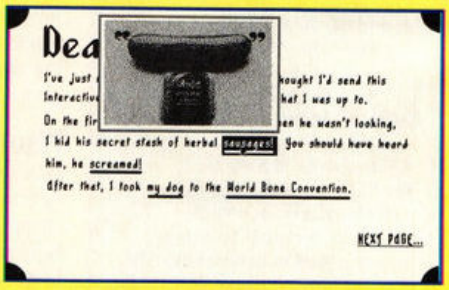


5 You can link ASCII text files, too. *Connections* sizes the window automatically, and long text files can be scrolled up and down with the mouse buttons.

6 If you manage to put a link in the wrong place, don't worry, *Connections* enables you to move it or even delete it without any hassle.



7 *Connections* lets you change the speed of your samples and test them before you commit yourself.



8 The finished item. Some links play sounds, and others show images like this one. Sure beats a paper letter.

TIPS

Don't spend ages tidying up dodgy sounds and images – plan ahead and produce clean results for your multimedia presentations.

Remember the copyright laws, too. It's easy to grab *images and* samples from movies, but consider the consequences. If your work will ever be displayed in public, don't do it – it's illegal.

Sound Advice

- Remember that you can add reverb and delay to samples with most editors for added punch and professionalism. Try to keep the delay level low on voice samples so the words are still understandable.
- Edit your samples down to the bone. Trim any clear space at the end of the sample and the beginning before the sound really starts, and never leave a sample at 29K if it can be cut to 23K.
- Disk space is always vital, so make your samples as small as possible. As well as cutting them, consider the sample frequency. Try converting the sample to a lower frequency – after you've saved the original – and see how little quality is lost.
- If you need a sample of your voice, don't perform it straight into the sampler. Record it on to a tape first and check that it sounds okay. Use the headphone output from the tape machine to feed into the sampler.
- If you need to record yourself, make sure the room is as quiet as possible.
- Max the volume of your samples. Your work should be as punchy as possible for multimedia applications. Boost the volume on all samples till it distorts and then back off until the sound is clean.
- Use the STE's DMA sample frequencies whenever possible, so that STE users get the best possible quality. The ones to go for are 25KHz, 12.5KHz and 6.25KHz.

Positive Images

- Don't scan from magazines or newspapers. Apart from copyright problems, these pics have been dithered for printing, and the scans will look very dirty.
- Save your files using a compressed format where possible. You can use PC1 or colour IMG formats for 16-colour images.
- Clean your materials – dust off your scanner properly, and make sure the image you're using is free of specks and fingerprints. A camera lens-brush is a good tool.
- For digitising from a camcorder, always film in natural daylight if possible – it gives better colour representation than harsh light-bulbs.
- If you have a mono scanner, try to use black and white photos as your source – the scanner has an easier job with mono pictures than it does converting colour tones.

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Do it yourself...

Real men don't use other people's software, they write their own. Here's how it's done...

You can write a multimedia application in almost any language, including those ST stalwarts *STOS* and *GFA Basic*.

DIY with STOS

STOS has all you need to create an interactive multimedia presentation from scratch – with a little bit of programming effort.

In its standard form *STOS* has commands to display graphics and play nasty chip music. By picking up some extensions from a PD Library (try Goodman's on ☎ 01782 335650) you can add *Spectrum 512* pictures, crystal-clear sampled sound, very fast sprites, *CyberPaint* animations and even *Soundtracker* tunes. Recommended extensions include *The Missing Link*, *STOS Control* and *Ninja Tracker Extension*. Top Byte (☎ 01622 763056) sells the capable *STOS Extra 3*, which has lots of nifty graphics commands.

A simple interactive multimedia show could display a graphical menu, which does various things when buttons are clicked on. In standard *STOS*, you can use the ZONE commands to define clickable screen areas to use as buttons. For example:

```
SET ZONE 1,10,10 to 30,30
```

defines a 'hot box' on the screen, beginning at co-ordinates 10,10 and covering 20 pixels in each direction to co-ords 30,30. Take a look at the Button It panel for a very simple example you can build on.

DIY with GFA

If you want a good example of multimedia/hypermedia software produced in *GFA Basic*, look no further than this month's Cover Disk star, *HyperGEM*. Tim Raines programmed this version of *HyperGEM* in *GFA Basic*, and as well as making it freeware, he provided the full *GFA* sourcecode too. It's a good place to start if you want to learn how to create linked hypermedia documents in *GFA* – follow Tim's code and cross-reference the commands in the *GFA* manual. Like *STOS* programs, *GFA* programs aren't always happy on the Falcon030, so Tim is hard at work coding a new enhanced version of *HyperGEM* in C.

If you want to add pizzazz to your GFA multimedia work, take a look at Ninth Wave's *Sprite Works* (see page 36 for a review). It's a massive set of add-on commands for *GFA BASIC* written in fast assembly language, and makes fast graphics programming a reality. It even has commands to unpack data files packed with *PackIce*, so you can reduce the amount of disk space your finished work eats up – essential if you don't have a hard drive.

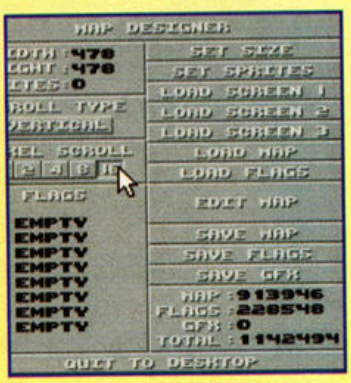
Coming soon: Tony Greenwood's multimedia authoring system, written in *STOS*.

BUTTON IT

```
10 SET ZONE 1,10,10 to
50,50
20 SET ZONE 2,60,60 to
100,100
30 REPEAT
40 k=MOUSE KEY
50 UNTIL k<>0
60 x=ZONE(0)
70 IF x=1 THEN GOTO 1000
80 IF x=2 THEN GOTO 2000
90 GOTO 30
```

Lines 10 and 20 define the 'hot' areas of the screen. Lines 30 to 50 simply loop endlessly until a mouse button is pressed. Line 60 tells us where the mouse was when the button was pressed – 0 means not in any zones, 1 and 2 signify zones 1 and 2.

Line 70 branches to the code at line 1000. This happens if the mouse button was pressed in zone 1 – your code could change the screen graphics, play a sample, or print some text. Line 80 does the same, but send the program to line 2000 if the mouse button was pressed in zone 2. Finally, Line 90 simply restarts the whole loop. It's very simplistic, but you can build on it to create a basic point-and-click interactive presentation.



Add fast graphics to your interactive *GFA* masterpiece with the *Sprite Works* toolkit from Ninth Wave Software.

WIN! WIN! WIN!

A VIDEOMASTER DIGITISER from HISOFT

Grab yourself some multimedia kit in the first of this month's exciting competitions. This competition is for ST owners; Falcon users should turn to page 21 to win a copy of *Rainbow 2*.

HiSoft's VideoMaster is a multimedia video and sound digitiser. It comes complete with the ColourMaster RGB Splitter for full colour video grabs, and it's tremendous fun to use.

The VideoMaster/ColourMaster combo is worth £110, but the good people at HiSoft have given us one to give away. All you have to do is answer three questions about *ST FORMAT Hypermedia Index*, which is on this month's Cover Disk. Write your answers on a postcard and send it to: VideoMaster Competition, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath BA1 2BW.

Entries must arrive by Monday, 11 September 1995, and employees of Future Publishing and HiSoft are not eligible to enter. The editor's decision is, as ever, final.

1 Which two character profiles don't include mugshots?

2 Which program from Cover Disk 71 is described as "a powerful collection of disk utilities"?

3 Which PD disk reviewed in issue 70 featured tunes "ripped from the PC version of the game."

Everyone's a winner with *ST FORMAT*'s exclusive price offer.

If you don't win you can still get ST VideoMaster and ColourMaster from HiSoft for the *ST FORMAT*-exclusive price of £79.95 plus P&P (£30 off RRP). Falcon owners can grab the '030 version for only £89.95 – saving £40. If you've already got a VideoMaster and want the ColourMaster RGB Splitter, HiSoft is offering it for only £39.95.

HiSoft's generous prices are valid until 30th September. Call ☎ 01525 718181 for more details.

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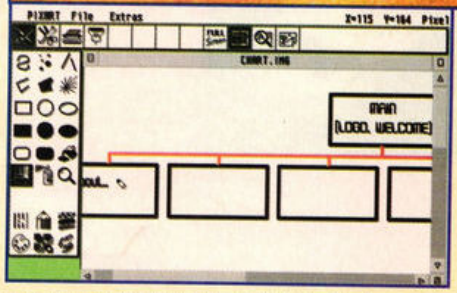
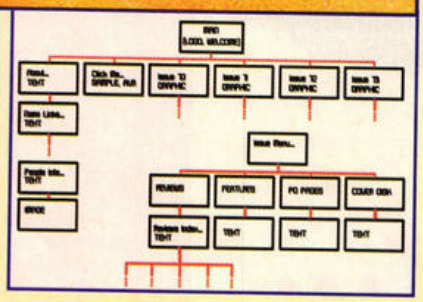
Create a database in HyperGEM

The *ST FORMAT* HyperMedia Index file we created for this month's Cover Disk isn't very large – we had to squeeze it into 250K – but it's still quite complex. The step-by-step guide on this page shows you how it was created.

INITIAL PLANNING

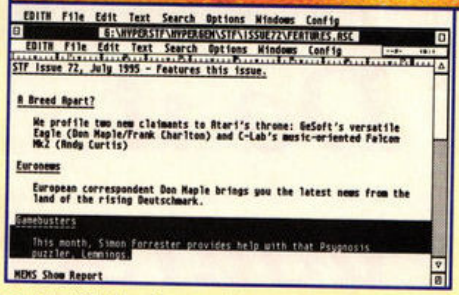




1 It's best to create a plan of your document before you start with *HyperGEM*. It'll save a lot of heartache in the long run. We created a simple structure diagram, with each box representing a *HyperGEM* page or link.

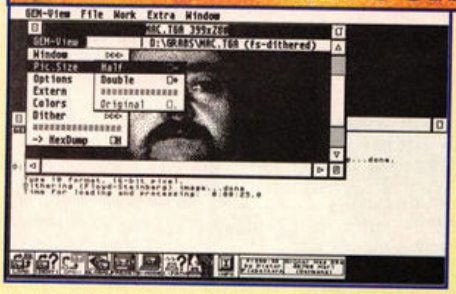
2 The main screen branches off via six buttons. Four of these buttons move to sub-menus for the issues of *ST FORMAT* we're covering. You can follow your diagram as you build your document.

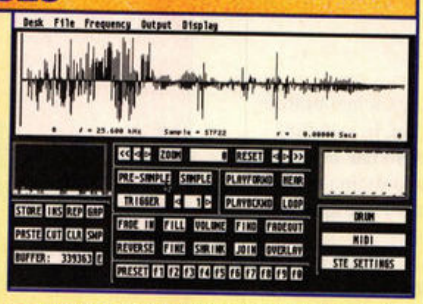
GATHERING RESOURCES



3 *HyperGEM* does have a rudimentary built-in text editor, but it makes more sense to compose your articles using your favourite dedicated editor. We used the shareware editor *Edith* to create the text files for our index.

GATHERING RESOURCES

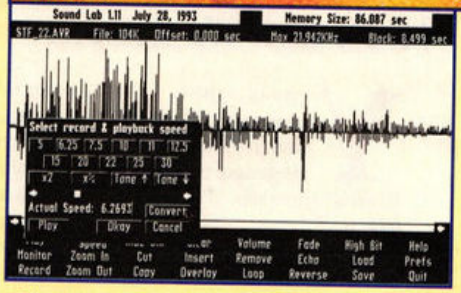




5 *HyperGEM* can actually load and convert 16-colour images 'on the fly', but we converted ours beforehand to save disk space. Lots of programs will convert images to mono – we used the excellent shareware viewer *GEMView*.

6 Time to inject some noise into our document with a sample or two. Sample at the highest rate your hardware will handle, then reduce the rate later – you'll get much better quality that way.

EXECUTION



7 To squeeze even a single sample on to the Cover Disk we had to take our 25KHz sound down to a measly 6KHz. *SoundLab* is an excellent tool for tweaking your samples – you can get them just how you want them.

EXECUTION

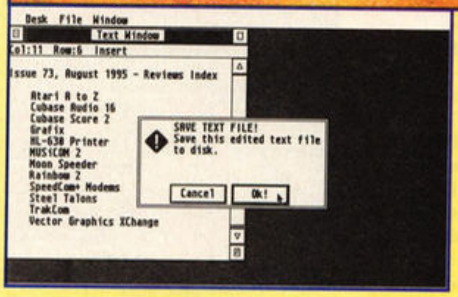
9 Time to start the process of stringing the multimedia elements together in *HyperGEM*. Choose Generate *HyperSystem* from the GEM menu, and tell *HyperGEM* you want to use a graphic as the backdrop to the main screen.

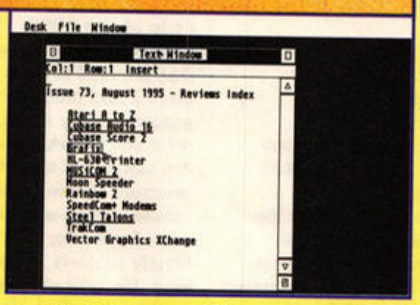
10 Adding links to new pages is as simple as selecting Add button from the menu. *HyperGEM* adds links on top of a graphic by surrounding text with a clickable box to make a button.

EXECUTION

11 Don't worry too much about the location of your button – it's easily moved. Clicking the button for the first time gives you the chance to choose the kind of link you want. We're linking to another graphic image.

EXECUTION

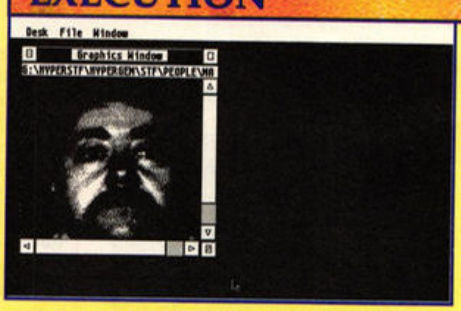




13 Clicking the Reviews button takes us to an index for that issue – an ASCII text file. You can use *HyperGEM*'s text editor to correct any errors – when you're done, hit the [Escape] key and save the new text file.

14 On a text page, your links are shown as underlined text. Select Add button and drag the mouse over the area you want to use as the link – in this case, we have a link for each individual review.

EXECUTION



15 The 'About this file...' button leads to some text about the *ST FORMAT* team, and a collection of mugshots. When you import an image, it opens in a small window – drag it to show as much of the image as you want.

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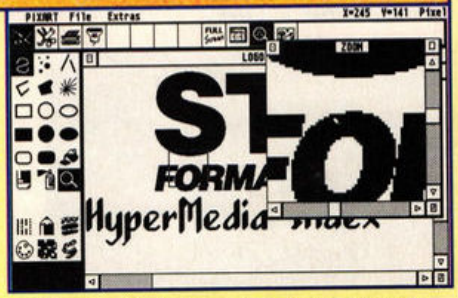
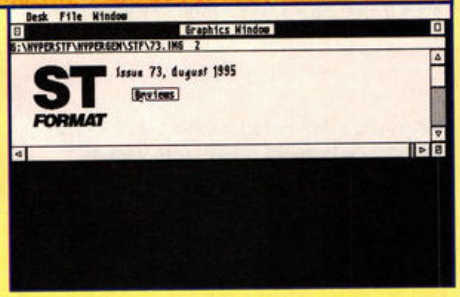
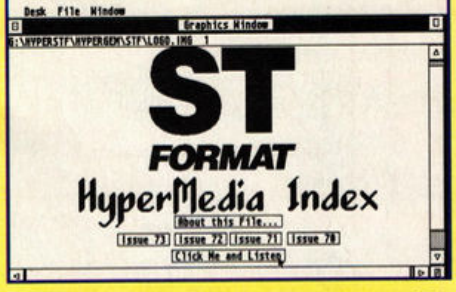
4 We need images of the twisted *ST FORMAT* bods, so out comes the hand scanner. In this case we're using a colour scanner on the Falcon, but all mono scanners have a photographic mode which will dither the image for you.



8 We've nipped back into an art package to create our main screen, which includes a mono scan of the *ST FORMAT* logo. It's the first thing users will see, so we decided to keep it clean and uncluttered.



12 Each issue of *ST FORMAT* has its own sub-menu, with a separate IMG file for each. IMG images compress, and these ones are about 2K each. Now we need to add some buttons to branch off to the various categories.



16 The finished HyperMedia Index – it's only a small file, but we had great fun putting it all together. We'd love to see what you've done with *HyperGEM* – why not send in some of your multimedia masterpieces?

Multimedia magazines

Many diskzines are sophisticated multimedia presentations. James Matthews of PowerPD tells Andy Curtis how his comes together.

Power DiskZine is one of the most prolific and popular diskzines currently available for the ST. It has been revamped regularly, and *Power DiskZine 26* scored 89% in issue 72.

It was launched nearly three years ago. In those days it had a very basic interactive shell, and contained about 200K of text. The rest of the disk was filled with shareware or PD programs. The reviews weren't up-to-date and not many copies went out, but it was a start.

Many hands

James worked on the diskzine on his own for the first few issues before realising that he needed input from other enthusiasts. At this time the diskzine was issued monthly, but it soon became clear that more time was needed to produce a quality product, so he switched to a bi-monthly schedule. *Power DiskZine* was set for growth.

Nearly three years later, *Power DiskZine* is still going strong. It enjoys the services of a team of regular writers and it covers even the most up-to-date software releases. You can expect to find over 1MByte of compressed text on each disk, and there may well be an exclusive PD releases from a well-known PD author. *Power* has already featured exclusive versions of *Blob Race* by Kev Davis (a gambling game) and *Dungeon Depacker* by Chris Sharp.

Packed out

Apart from these special releases, there is little room for PD on the disk. "The emphasis is on good reviews and entertaining features in a powerful and easy to use environment," said James.

Christmas 1994 saw the introduction of the present shell. Written in machine code for size and speed, the new shell provided more options and greater ease of use. It is updated each issue to optimize it for the content of the diskzine.

Disaster strikes

Possibly the worst thing ever to happen to the diskzine occurred in September 1993, when the master floppy and backups were accidentally placed on a speaker. "The magnetic field corrupted the disks and this left me just one week to complete the full zine," admitted James. "I just had to do the best I could in the time available."

Putting together a diskzine, even with assistance, involves a lot of time and effort. "I spend two or three afternoons and late nights each week getting the material together, editing it and building it into the shell ready for viewing. I also co-produce a welcome screen for each issue using *Devpac 3*, to give readers an exciting visual and musical intro to the 'zine."

The market for diskzines has contracted recently, leading to some of the smaller diskzines dropping out. Those that remain tend to be of higher quality and are doing very well.

The main expense involved in producing a diskzine is time. Phone calls to software authors and other contacts are the only real physical cost. This makes it possible to supply people with a diskzine without charge, as James does.

Your own copy

If you would like a copy of *Power DiskZine*, send an SAE and a disk to: *Power DiskZine*, 3 Salisbury Rd, Maidstone, Kent, ME14 2TY.

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Get colourful with Rainbow 2

Rainbow 2 can't create interactive presentations like *HyperGEM*, but it can produce some stunning slideshows, harnessing the power of the Falcon's TrueColour graphics capabilities and 16-bit stereo sound hardware.

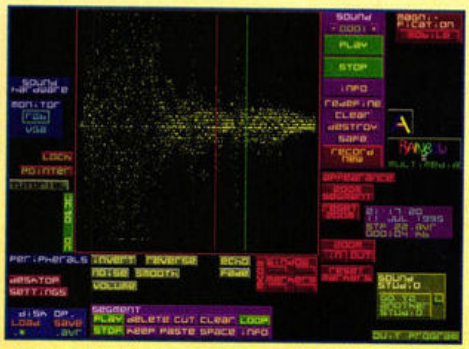
Nor can it utilise the highly compressed JPEG image format, so you need to use TGA or TIF images within your piece.

If you're planning a big slideshow, you'll need a lot of space on your hard drive. And unless you're prepared to send your presentation to a fellow Falcon owner on a batch of floppy disks, you should record it on to video tape (see page 15). If you're planning to have a SCART cable made up, make sure you specify that you need audio output, or your slideshows will be eerily silent.

1 Click on 'Define another' to start a new slideshow, then import a TrueColour picture to use as a title screen. Note: all the files must be in the same directory.

2 Right-click the button you used to load the image and you'll see an effects box. This enables you to customise the way the images appear on screen.

3 Samples and sprites have similar settings boxes. Samples can play once, or loop until the next frame. Sprites need to be told where to appear, and where to travel.



4 If your sample's hissy or too long, go to the Sound studio and clean it up using one of *Rainbow's* filters. Then use cut and paste to chop out any silent patches to make it fit.

USING RAINBOW 2

Addiction Software's stunning Falcon-only multimedia package, *Rainbow 2*, scored 96% in issue 73. It has a fully-featured TrueColour art package, an image processing studio, a sound sampler, a sprite designer and even a built-in game. What's more, it can integrate sound, images and animations in the Slideshow studio. We take you on a quick guided tour...

Slideshow studio

1 Sound hardware: Alter the settings for your Falcon's built-in digital sound subsystem here, and turn the internal speaker on and off.

2 Part control: Each part of the slideshow is like a separate frame from a movie. Here you can add and delete individual frames, and use the + and – buttons to skip between them.

3 Part editor: This panel controls the contents of each frame of the slideshow – a picture, moving sprite, sample or any combination of all three. Left-clicking enables you to choose an item, and right-clicking brings up a submenu where you can adjust effects and settings for that particular part. Change the length of time each frame stays on screen with the + and – buttons.

4 On-line help: Clicking here opens a dialog box – leave it there, and click on any other button you'd like some info about. Right-click anywhere outside the dialog to go back to normal operation.

5 Slideshow control: *Rainbow 2* can hold as many separate slideshows as memory allows. Click here to define new ones.

6 Disk operations: Use this panel to save and load Slideshow scripts – you'll need to buy the full version to save, though.

7 Lock: This locks the Virtual screen in place, stopping it from scrolling about when the mouse hits the edge of the screen.

8 Pointer: This changes the shape of the mouse pointer – you can even define your own in the Sprite studio.

9 Desktop: Lets you move buttons about to create your own custom working environment.

10 Settings: This changes various program parameters such as the language *Rainbow 2* uses.

11 Monitor: You can't use VGA if you only have an RGB monitor or TV, and vice versa. Right-clicking lets you customise the display, including switching overscan on for a bigger screen.

12 Peripherals: Set up the Tabby graphics tablet, if you have one.

13 Studio Control: Brings up a menu to choose another studio. The 'L' button will switch you quickly back to the last studio you were in without losing any data.

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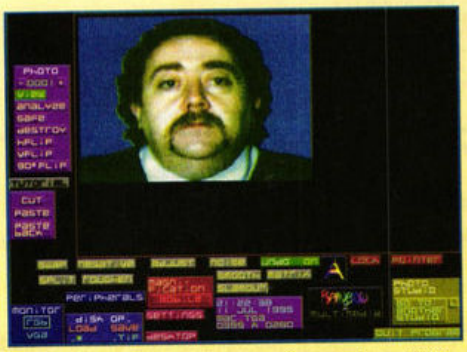
5 It's easy to make a simple non-animated sprite flit across the screen as the second image displays.

The Sprite studio accepts data from either the Picture or Photo studios. Clicking the Fetch button opens a box so that you can choose an image. Fetch stores the image in the Sprite studio's edit buffer, but doesn't put it into the Sprite bank itself. To do this, click on Insert next to one of the empty Sprite boxes.

6 Animated sprites use the same principle as non-animated ones. Each bank is composed of a sequence of separate images, just like a film. While you can use the drawing tools to edit the sprites, it's a better idea to use the Picture Studio. You can then use Fetch to grab the sprites one by one, inserting them into the sequence.



7 If an image doesn't look glamourous enough, a quick trip to the Photo studio can fix it. *Rainbow*'s powerful range of image filters can blur, soften, sharpen, enhance or just simply distort the pic. Here we've used a Soften filter to provide a less startling appearance...

8 Finally, the Slideshow is ready to run. If you're recording it on to video, use a plain black screen as the first frame in the show, to give you time to cue up the video recorder before the actual display starts. Add a couple of black frames to the end, too – *Rainbow* will loop the whole presentation, and you'll need time to stop the video when it's run through once.

USING RAINBOW 2

The Picture Studio

1 Colour picker: Click anywhere here to change your drawing colour from the blended box. Clicking the four corner boxes and the + and – buttons enables you to customise the shades displayed here.

2 Zoom box: Displays a magnified image of what's currently underneath the mouse pointer.

3 Palette tools: Here you can adjust the RGB parameters of your image's colours.

4 Window control: Choose which part of the large images you want to focus on in *Rainbow*'s small Image Window.

5 Picture controls: Here you can shrink images, cut and paste, define new image buffers and analyse images – *Rainbow* will even tell you how many colours you've used.

6 Drawing tools: As well as standard pens and brushes, *Rainbow* provides 'natural media' tools like oil paints and watercolours. Right-clicking a tool will bring up a settings box, where you can adjust the effect. Take some time to experiment with these tools – they really are stunning and produce some very effective results.

7 Image window: Displays a small section of the current image. *Rainbow* can load huge pictures, but you need to work on them an area at a time through this window on to the virtual canvas. Use button 4 to adjust the part you see. The 'View' button on the Picture Controls panel lets you scroll around large images with the mouse, but doesn't adjust the actual work window.

WIN! RAINBOW 2

Now that you've seen *Rainbow 2* in action, you'll want a copy of your own. Of course, you could go out and spend £69 of your hard-earned cash, but why would you want to do that when we've got three copies to give away, courtesy of UK distributor JCA Europe. This competition is for Falcon owners; ST users should turn to page 17 to win a VideoMaster instead.

All you have to do is work out the answers to the three questions below and write them on a postcard. Clue: you'll find the answers in the *ST FORMAT Hypermedia Index*, which is on the Cover Disk. Send your postcard to: Rainbow Warriors, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW. Entries must arrive by Monday, 11 September 1995, employees of Future Publishing and JCA Europe are not eligible to enter, and the editor's decision is final.

1 Of all the programs featured in issue 72 reviews section, which one comes with an associated screenshot in the *ST FORMAT Hypermedia Index*?

2 According to his character profile, what exactly are Andy Curtis's origins?

3 Which tutorial from the issue 73 section of the demo has its own screenshot: *Disk Opus*, *Speed of Light* or *KIVI*?

If you're not one of the three winners, *Rainbow 2* costs £69, and is available from JCA Europe (☎ 01734 452416). There's also a demo version, which is available from BBSs and PD libraries – subscribers will find it on this month's Wonder Disk.

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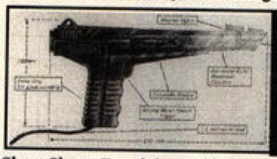

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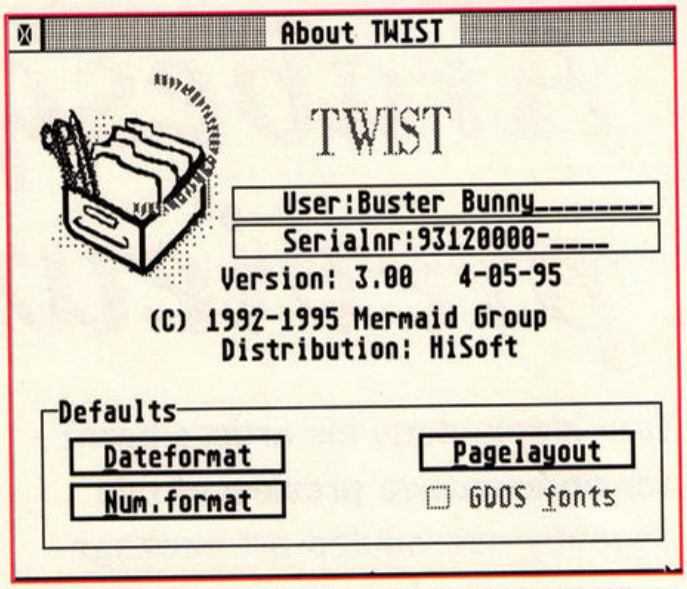
Twist 3 preview



Here it is, the pre-release version of *Twist 3* – complete with a silly user name. We'll soon have our hands on the real thing, we hope.

Hot on the heels of *Twist 2*, here comes *Twist 3* – the second version of HiSoft's popular database to hit the UK. Peter Crush twists again...

Even as you read this, HiSoft is busy adding the finishing touches to latest version of its popular database program. We managed to get a sneak preview of the software, and have been taking a quick look at what's on offer. However, both the manual and the program itself are still in preparation, so you'll have to wait a little longer for a full review.

Databases are not usually the most exciting of programs, but when we reviewed *Twist 2* in issue 65, we were impressed. It also scored highly in our head-to-head test against *Superbase Pro* in issue 67. *Twist 2* is very powerful, despite being easy to use, and the interface is modern and slick. So how does *Twist 3* compare?

Bigger, better

You don't notice many changes when you first load the program – the desktop looks the same as always, and the main menu appears unchanged. *Twist 3* is slightly larger than its predecessor – our pre-release copy was about 520K, compared to the 463K of version 2 – and you'll need a 1MByte Atari to run it. *Twist 3* runs okay on a single-floppy machine, but will obviously work faster and better from a hard drive, especially as it can make use of *SpeedoGDOS* fonts.

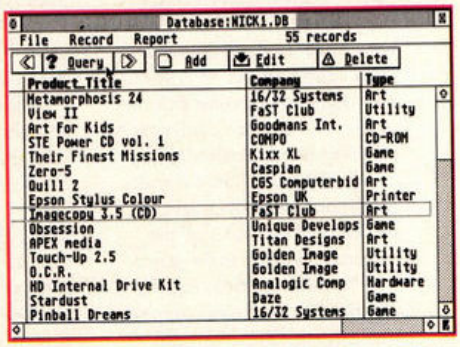
Features include improved page layout options, and neat pop-up menus

One of the more technical innovations is the 'User-definable dialog box'. This new feature enables you to define a dialog box, which appears before the 'Query string' (entered in reports, updates, mail merge, and import and export operations, or simply before a predefined query is performed) in the database window.

The user-definable dialog box concept is based on the form_alert function – something C programmers will know all about. If you're a mere mortal, it's enough to know that this powerful new command will help you customise and error-trap the way you enter and search for data. Other novel features include improved page layout options, and neat pop-up menus for setting preferred date and number formats.

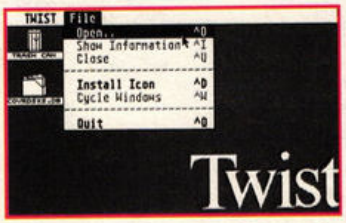
The general operation of *Twist 3* is very similar to the previous version, so existing users should have no qualms about upgrading. We tried version 3 on some *Twist 2* database files, (and *Twist 2* on version 3 files), and there were no compatibility problems.

Our first impressions are pretty favourable. We understand that HiSoft (☎ 01525 718181) will be charging £89.95 for *Twist 3*, and an upgrade deal should be available. ***stf***

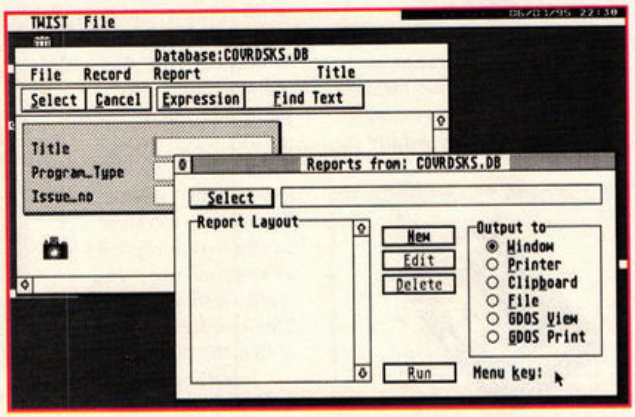


In List mode, *Twist 3* displays all the records like this. The list might go on for hundreds of lines, but you can find any particular entry using the improved built-in search facilities.

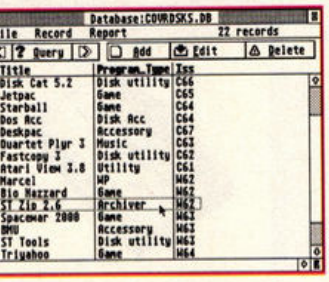
Visually there's no change to the Twist desktop, which appears when you run the program. It has its own icons, which you can use to access various features.



There are apparently no new additions to the main menu, which has always been fairly streamlined. The program's many features are tucked away in subsequent sub-menus and dialog boxes.



Here's a sub-menu which *has* had new features added. It gives you more options for customising Reports, but you'll need the manual to understand it all.



Young Nick has been busy – see how he's entered loads of his beloved Cover Disk contents into this database. It helps keep his mind off the many tragedies of his young life.

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Arabesque 2 preview

Don Maple dons his artist's beret for an exclusive preview of this recently overhauled art package.

Publishing is one of the major areas of professional Atari use, which is why we have such an disproportionately high number of graphic and image processing programs available to us. Latest in the long line is *Arabesque* 2.

Arabesque has had a good reputation ever since its premier in 1987. However, the original was due for a major overhaul by the time it was acquired by German company no Software. The overhaul proved so extensive that no Software decided on a rewrite instead, and that's how *Arabesque* 2 came to be.

Brand new

As a result *Arabesque* 2 is, in some ways, very different from the original. On the one hand, the new program can only handle vector graphics (there is a bitmap module in the works, however). On the other, *Arabesque* is now in glorious colour. The program is also more user-friendly and fully GEM-compliant.

However, the biggest news is that *Arabesque* 2 has full access to *GDOS* fonts. For example, installing *SpeedoGDOS* 5 enables you to use not only Speedo fonts, but also the many thousands of TrueType and Type 1 fonts.

GDOS can also be used for printing, but *Arabesque* is capable of output to plotters using a built-in HPGL driver. You can also print to disk in both image (bitmap) and metafile (vector) formats.

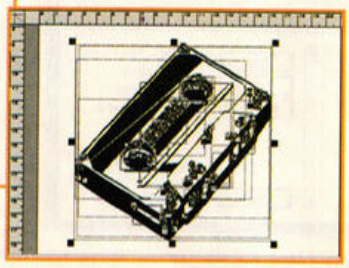
Big graphics

One of the perennial problems with graphics files is their size. In the never-ending race towards higher resolutions and more colours, the files have just exploded in size. Often they far exceed the amount of available RAM. However, *Arabesque* 2 uses memory to its optimum – it is completely modular and keeps in memory only those portions of the program that really have to be there. The same goes for image data, too.

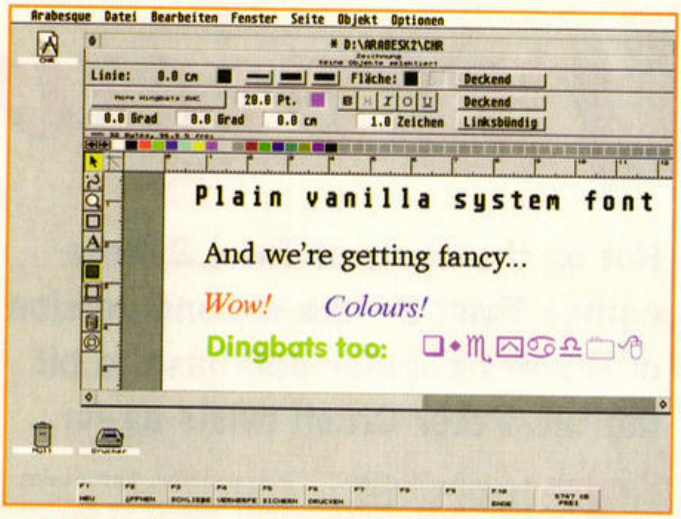
Another common problem with graphic programs is that most insist on using their own proprietary file format. *Arabesque* addresses this by supporting a wide range of import and export file formats, making data exchange easy. Acceptable formats include Metafile, *Calamus*, EPS, *AutoCAD* and HPGL, as well as many others.

Arabesque 2 comes with all the vector tools and utilities you would expect from a program of this calibre. You can group, ungroup, sort and mirror objects, as well as changing their size and position. You can even 'explode' text objects or, more accurately, individual characters, into their component Bezier curves. Another unusual feature is the ability to morph objects.

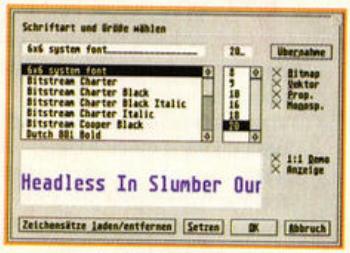
Arabesque is now in glorious colour. The program is also more user-friendly



Vector graphics are composed of many objects, as these before (above) and after (right) images clearly show.



Once *GDOS* is installed, *Arabesque* can take advantage of Speedo, TrueType and Type 1 fonts.



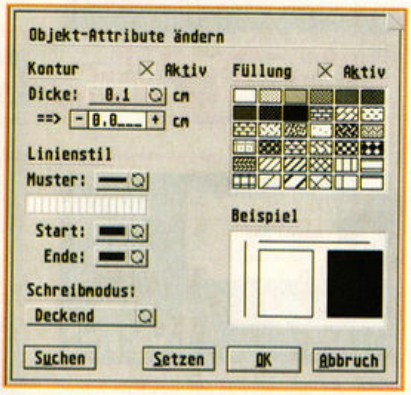
Choosing among numerous *GDOS* fonts is easy – just point and click.

Ready, load, go

The system requirements are fairly low for a program of this power. You need at least 2MByte of RAM but, as is always the case with memory-intensive programs, the more the merrier. Even though *Arabesque* can be used on a floppy-only system, floppies are too slow and too limited in capacity for any serious use – you really need a hard disk. The minimum resolution is 480x400 pixels.

Installing is straightforward: you simply run the supplied installation program and specify where you want the program. You are also recommended to install *GDOS* to get access to scalable fonts and be able to use *Arabesque* 2 to its full potential.

In the UK, *Arabesque* 2 will be distributed by Compo (☎ 01487 773582). The price hadn't been finalised when we went to press, but in Germany *Arabesque* sells for a very reasonable DM249 (about £115). Contact Compo for UK pricing, availability and upgrade deals. *stf*



Arabesque's flexibility is apparent in the numerous configuration dialog boxes. This one is used to customise object attributes.

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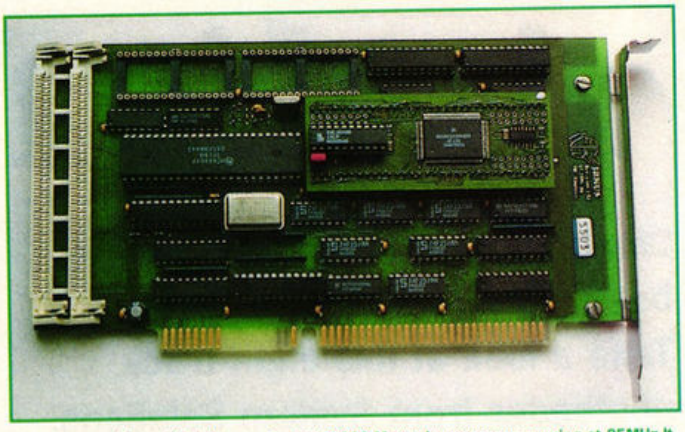
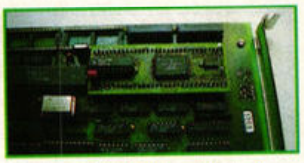
Janus20 preview



At the heart of Janus20 is the new faster 68020 Motorola processor, running at 25MHz.It is located on a daughterboard which plugs into the processor socket.

Janus, the hardware Atari emulator on a PC card, just had a child. Don Maple baby-sits the brand new bouncing Janus20.



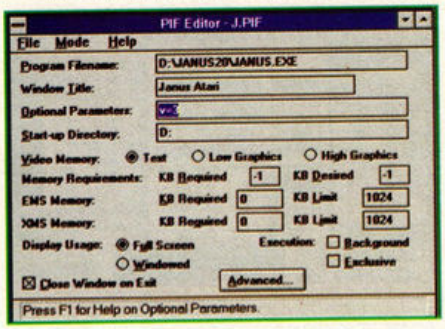
To make this 'naked' Janus20 card spring to life you need a set of TOS 2.06 ROMs (upper left) and a couple of SIMMs RAM cards (left).

Only a few short months ago (*STF* 64) we reported the advent of Janus, a complete ST on a PC card. VHF, the German manufacturer of the card, has now released a new improved version, Janus20. As the name implies, it comes with a 68020 Motorola processor, as well as more powerful software.

The card itself is very similar to the original, except that in place of the 68000 processor, a daughter card with a 68020 sits in the processor socket. This construction makes it possible for owners of the original Janus to upgrade to Janus20. However, you may have problems with some older board revisions, as the new card has new support chips.

Furthermore, Janus20 runs at 25MHz, so the RAM from the original 16MHz Janus may not be able to cope. This is why the daughtercard in the Janus20 has one wait state to accommodate slower memory. If your memory is fast enough this wait state can be removed by taking out a jumper for an even bigger increase in speed.

The new software is, in a word, marvellous. Several minor bugs have been fixed, and the driver now supports those magnificent workstation-like resolutions in local mode as well. (Janus can run in two modes, local and dual. Local mode is monochrome and more compatible, but slower as everything runs on the card itself. This is where the new resolutions have been added. Dual mode is faster, as many tasks are offloaded to the host PC, but some 'dirty' programs, which work in local mode, misbehave in dual mode).



Janus also runs under *Windows* in full screen mode. The driver disk contains a *Windows* PIF file for easy installation, as well as a number of BAT files which enable you to run Janus20 from DOS.

Put the boot in

The other big change is that Janus20 can now boot off a drive other than C. This is absolutely fantastic, as it means you can move all your Atari-related stuff to another partition, separating it from your PC programs. There might still be an odd accessory which insists on looking on the C drive for its RSC file, and Atari's own CPX also loads its INF file from C, but that's only a minor inconvenience. All AUTO programs will now load from the drive or partition JANUS.EXE was started from.

Resolution	Local mode (2 colours)	Dual mode (16 colours)
640x400	v=h	v=1
640x480	v=h2	v=2
800x600	v=h3	v=3
1024x768	v=h4	v=4
1280x800	v=h5	v=5
1280x1024	v=h6	v=6

New driver software extends local mode resolutions to match those available in dual mode. The commands in local/dual columns are used to invoke the mode. For example typing 'janus v=h3' from DOS results in 800x600 pixel local mode shown below.

Fast, or faster?

Nominally, Janus20 is about 33 per cent faster than the original card, but thanks to the improvements in local mode resolutions it feels much faster. It's very difficult to run benchmarks and compare Janus to an ST, because so much depends on the host PC. On our fairly modest 66MHz DX2 VL-Bus PC, Janus20 was between a little and a lot faster than a TT, depending on the application.

Janus was an excellent product to start with, and Janus20 is better

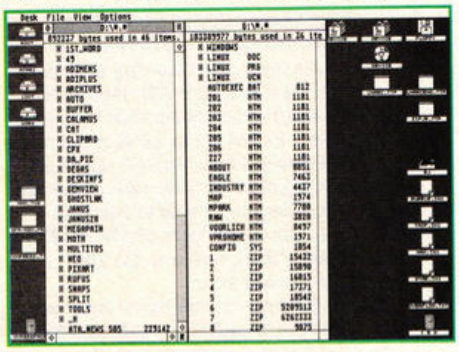
In Germany, some people have pushed the Janus up to 33MHz, simply by replacing the existing quartz oscillator on the card with a faster one. However, this needs a board with revision 1.03 or higher. Naturally, you also need fast RAM in order to be able to cope with the faster processor.

Coming soon

Turning to the future, VHF has great plans for Janus. In terms of hardware, the next step will be a 68040/68060 upgrade, while on the software side a slew of 256-colour modes is expected, to make full use of the raw hardware power. Also rumoured are RS-232 and MIDI ports, as well as the ability for several Janus cards to co-exist in the same machine. Can you imagine running multiple Ataris in your PC?

The bottom line is that Janus was an excellent product to start with, and Janus20 is even better. The increased speed of local modes and the new range of workstation-like resolutions are a sheer pleasure to work with. It certainly makes working on a despicable PC much more bearable. If you already have a PC and were previously only thinking about Janus, you can stop thinking and get Janus20. Contact CGS Computerbild (☎ 0181 6797307) for UK availability and pricing, or to place an order.

The Atari future looks even better than it used to. ***stf***

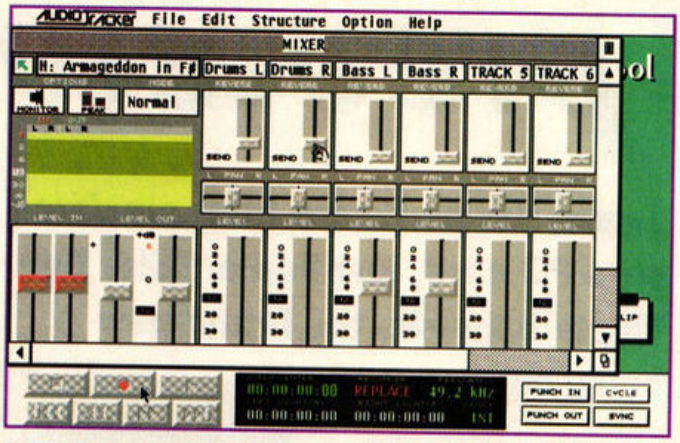


The local monochrome modes (which are more compatible) have been extended to match the resolution of dual modes, as this 800x600 pixel screen shows.

www.stformat.com

AudioTracker

Want to get into digital recording but can't afford *Cubase Audio 16?* Take a look at this eight-track contender from System Solutions.



AudioTracker's main screen. This screenshot is of a plain vanilla RGB monitor – a VGA monitor, along with a screen expander, produces a much bigger working area.

AudioTracker is a full eight-track digital recording and mixing studio. Unlike *Cubase*, it's just a recording engine – there isn't a built-in MIDI sequencer. It comes on a single disk, and accompanied by a comprehensive 56-page manual and a copy protection dongle for the cartridge port.

The program runs under a standard GEM environment using menus and dialogs. Screen updates can be slow (even with an accelerator like NVDI installed), especially when scrolling large windows.

Like all multitrack D2D systems, *AudioTracker* needs a fast hard drive, preferably of the SCSI variety. The manual recommends that the drive's data transfer rate shouldn't fall below 1.4MByte per second, so check with your drive manufacturer if you're unsure. It also states that internal IDE drives found on recent Falcons will only be able to replay four or five tracks per song in real time before errors creep in. The phrase 'recent Falcons' is a bit ambiguous though, so check with System Solutions about IDE compatibility.

Cue the Tape...

In operation, *AudioTracker* behaves very much like a conventional tape recorder – song data is stored on your hard drive using 'tape files'. *AudioTracker* will install tapes on as many drive partitions as you specify, and will use up all the available space if you let it.

AudioTracker installs a 'virtual tape' on your HD partition. This can be as big as you like, but you can only have one per partition.

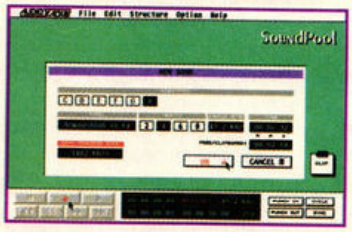
Bearing in mind that D2D systems eat drive space like it's going out of fashion, you may want to consider a completely separate drive purely for digital audio use. Even a relatively large 500MByte drive will only provide about 12 minutes of full 8-track recording. If you're into progressive rock you're probably looking at the prices of 2GByte drives right now...

As a pure digital recording system, *AudioTracker* is excellent...

Once one or more tapes have been installed, *AudioTracker* will create a new song for you. Tapes can hold as many songs as will physically fit, and they can be as short or long as you need. Unlike real tape, *AudioTracker* can store songs with different numbers of tracks on the same tape, so 4-track songs will co-exist with an 8-track opus.

Setting up a new song is as simple as choosing how much recording time you need, and how many tracks, and giving it a name. Installing tapes can take a while, but new songs take a matter of seconds to initialise. *AudioTracker* can switch between songs easily, and they can be deleted with a minimum of fuss.

There's no way to copy songs from one tape file to the other, so you need to back them up. This is where the SP/DIF (see the Let's Get Digital panel) is essential –



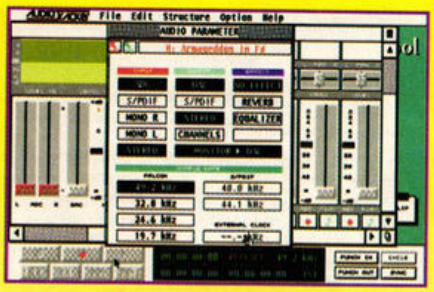
Once a tape is installed, you can fill the available space with as many individual songs as you can like from this simple screen.

LET'S GET DIGITAL

***AudioTracker* will run without any additional hardware, and will happily use the Falcon's stereo minijack input as a recording source. Although the Falcon's built-in ADC (Analog to Digital Converter) offers "better than CD quality" sampling rates, it's still not as good as the more upmarket ADC units in modern DAT machines and studio equipment. To really take advantage of digital recording, you'll want to interface *AudioTracker* with SoundPool's SP/DIF (£239), a hardware device that's similar to the FDI supplied with *Cubase Audio*.**

The SP/DIF takes a pure digital input source such as a CD player or DAT machine and feeds the digital signal to *AudioTracker* via the Falcon's external DSP port. Using either co-axial or fibre optic inputs, the Falcon's ADC is bypassed altogether, resulting in a recording which is 100 per cent true to the original. Since it can output via the SP/DIF back to a DAT recorder, you can happily bounce recordings back and forth between *AudioTracker* and DAT with no loss of quality. AudioTracker will accept data in this form at the industry-standard sample rates of 48KHz and 44.1KHz. Using the digital interface adds to the cost, but the improvement in audio quality is very noticeable in a professional environment.

Output can also be sent in analog form to SoundPool's external FA-8 interface (£349),



Each song has its own settings, and this is where you configure sample rates and the like. Hooking up the external Digital Interface is no problem from here.

providing a separate output channel for each of *AudioTracker's* eight tracks. Both the SP/DIF and the FA-8 are available from System Solutions (☎ 01753 832212).

www.stformat.com

NON-DESTRUCTIVE EDITING

AudioTracker's Wave editor is fully non-destructive. Put simply, this means you can open an individual section of recorded audio and mess about with it as much as you like, without fear of ruining it permanently.

Non-destructive editing works by copying the sample into memory, then working on it. If you're happy with the results, you can save it back to the tape file, but it's easily trashed if you spoil your tune. The advantages are obvious – because you're free from worry, you're more likely to experiment, and experimentation often produces results you might never have discovered otherwise.

While in the Wave editor, *AudioTracker* will replay your entire song, mixing in the RAM-based track you're working on, so you can preview your changes before you commit yourself. Nice touch, that.

The Wave editor can import and export sample data as standard AVR files, in either mono or stereo.

A comprehensive on-line help system is available, but sadly most of it's in German. So, unless you have a brain like an anglo/german dictionary, it won't be much use.

AudioTracker can back songs or tapes up to your DAT machine, with a 120-minute DAT accepting approximately 1GByte of data.

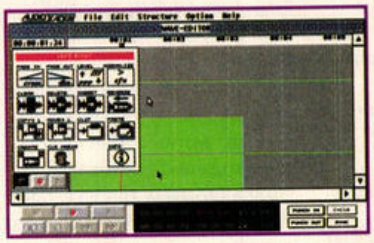
Recording

Recording from a digital or analog source is simple. If you've specified a song as true stereo, *AudioTracker* records two tracks simultaneously, one for each stereo channel. In mono mode, you're free to record as many or as few tracks as you require. To activate a track for recording, click the red circle icon below that track, then use the main toolbox's global record button.

AudioTracker acts as a digital mixing studio, too. Each channel's level can be controlled with a slider, and a global master volume is also available. Using Mix-down mode, multiple tracks can be 'bounced' on to a single track, enabling you to free up tracks for extra parts. You can also add effects to tracks during mix-down – see the Special Effects panel for more details. Final mixing to DAT or tape is very similar, with all the sliders and effects controls being active. It's not as flexible as a real mixing desk, but it can provide excellent results.

Because they're stored digitally, sections of audio can be edited at the sample level.

AudioTracker's Wave editor is very similar to a standard ST sample editor in use. Sections can be marked with the mouse, and operations carried out globally or on small parts. A pop-up toolbox allows samples to be filtered and boosted, and all changes are temporary until you decide to keep them – see the Non-Destructive Editing panel for more details. Moving sections of audio to eliminate gaps and fix timing is very easy, too.



The deceptively simple appearance hides a very powerful sample editing system – *AudioTracker's* Wave editor.

Synchronicity

Although it doesn't have a MIDI sequencer, it can synchronise to external MIDI devices. Using *AudioTracker* as the master, it sends MIDI timecode signals to start at the correct position. MIDI clock is also available, but is less exact than timecode. Conceivably, it could synch to a separate ST running a sequencer to replay standard MIDI sequences. The program can also synch in slave mode, and will start when it receives MIDI timecode. A special 'Audio code' can also synchronise two or more Falcons running separate copies of *AudioTracker*, enabling you to exceed the eight-track limitation. An expensive way to do it, but it's there if you need it.

And finally?

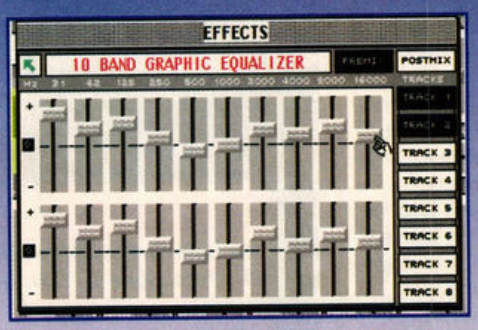
As a digital recording system, *AudioTracker* is excellent. Coupled with the SP/DIF or FDI, it produces extremely professional results. It's perhaps unfair to put it up against *Cubase Audio 16*, due to the price and lack of MIDI sequencer, but the D2D side does compare very well. Ideally, you'd want the digital interface and a DAT machine for best results, possibly synchronised to another ST or Falcon running a sequencer. It's certainly better than a little four-track portastudio, and it opens up the world of digital recording to those of us without bottomless pockets. *stf*

FRANK CHARLTON

Product: AudioTracker
Price: £159
Contact: System Solutions
Tel: 01753 832212
Min system: Falcon030 only, fast hard drive required

SPECIAL EFFECTS

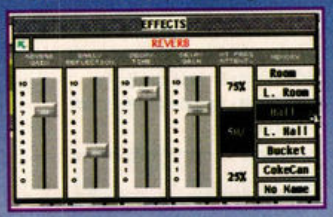
AudioTracker can apply two different digital effects to your work – a ten-band stereo equaliser, and a configurable reverb system. Sadly, only one effect can be present per song, so you can't use EQ and reverb together.



The ten-band stereo equaliser enables you to mix channels effectively. Sadly, it can't be used with reverb as well.

The equaliser is extremely good, and each channel can have its own settings. The EQ Send level is controlled from the main screen, and is again independent for each track.

The Reverb system produces excellent effects – very sharp and clean. As well as being able to tweak individual settings, a series of seven buttons is provided to store common settings. Four are pre-defined with levels to simulate environments such as Room or Hall, and a further three are blank for your own use. Like the EQ, the reverb level is controlled with a simple slider at the main screen.



The excellent reverb studio.

AudioTracker

HIGHS

- Excellent results on a budget
- Easy to get to grips with
- Non-destructive sample editing

LOWS

- Slow screen updates

VERDICT • STF VERDICT • STF VERDICT • S

In short...

True eight-track digital recording on a budget – well worth checking out.

82%

www.stformat.com

Diamond Edge 2

Stop hard drive disasters before they happen with the latest version of HiSoft's essential toolkit.

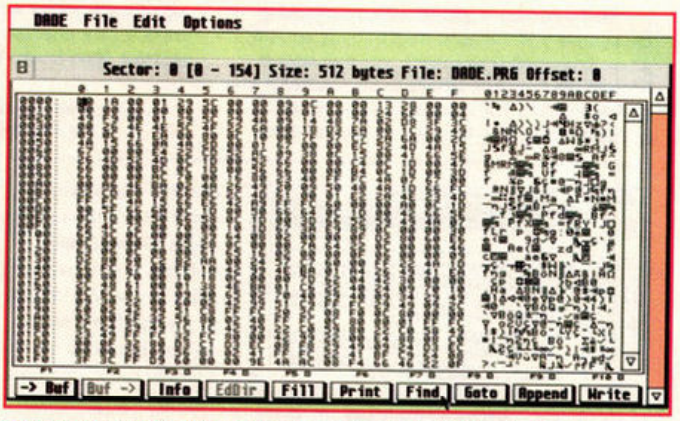
Hard drives are wonderful things – massive storage coupled with much faster access times than floppies. They can be a curse, though, if a problem develops. It doesn't happen very often, but when it does you'll want to recover as much of your data as you can. Step forward, *Diamond Edge 2*.

The first version of *Edge* has been around for a while, and has gained a reputation for solid reliability – essential when you're mucking with a hard drive. *Edge 2* has a smarter interface that brings it into line with its sister program, *Diamond Back 3*, and provides greater Falcon compatibility.

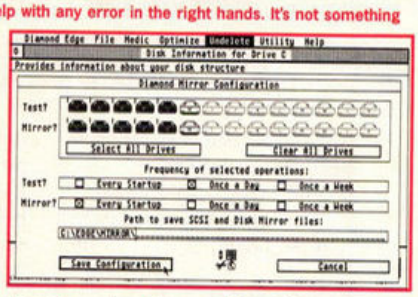
A number of new features have been added. One of the most potentially useful is the ability to write either an ICD or Atari AHDI boot sector to a drive without losing other data. A corrupted boot sector could prevent a drive from booting, even though all of the data was intact. Being able to re-write the boot sector like this could save hours of heartache.

Being able to re-write the boot sector could save hours of heartache

Edge 2 comes with a bolt-on tool called DADE – the Diamond Advanced Disk Editor. It's a disk sector editor capable of editing the information in physical devices, drive partitions and individual files. In the right hands, it's a very powerful repair tool, since you can get right into the hard drive at the most fundamental level. It's also lethal in the wrong hands, as injudicious editing could result in data loss. Be very careful.



DADE is very powerful, and can help with any error in the right hands. It's not something to fool around with, though.



It's worth running Mirror regularly, as it increases the chances of success in the event of an emergency.

As well as keeping your hard drive running smoothly, *Edge* can also help prevent data loss. Disk Mirror is a utility which sits in your Auto folder, and performs two functions. An integrity check at boot-up warns of potential problems, and Mirror will store a record of the FAT, boot sector and directory entries for your drives. It's quick and painless, and can be configured to act on every boot-up, once a day or even once a week. If anything does go wrong, the Mirror files provide *Edge* with a much greater level of recovery.

Doctor, doctor

Edge will also perform diagnostics on your drives, spotting and repairing errors such as invalid directories and lost clusters. As with the previous version, it's very good at this. Running a check as often as once a week is a good idea, to catch minor problems before they become major ones. *Edge* can also attempt to recover deleted files, and has a high success rate. Coupled with *Mirror*, it's even higher.

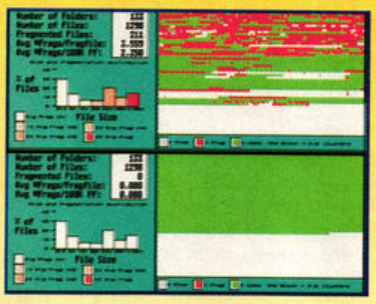
If you've got a hard drive, a toolkit like this is essential. If you haven't, it's still useful for recovering files from floppy disks. With luck, you may never need its reconstruction facilities, but if you do, you'll be glad you've got it. *stf*

FRANK CHARLTON

Product: Diamond Edge 2
Price: £49.95 (upgrade £29.95)
Contact: HiSoft
Tel: 01525 718181
Min system: ST/STE/TT/Falcon, hard drive recommended

FRAGMENTATION

As you use your drive, the data on it becomes fragmented. If you delete a 300K file, then save a 400K file, the first part of your new file will squeeze into the 300K of free space, and the rest will be written to the next chunk of space. Eventually, your files wind up splattered all over the drive. This doesn't harm them, but your hard drive can become noticeably slower, because the heads have to travel further seeking the data. Defragmenting the drive will put the separated sections back together, bringing your drive back to its original speed. However, you should back up your data before doing this – if you have a power loss during a defrag session, you could lose an entire partition.



Top: A hard drive partition which has seen some heavy use. The white sections are free space, and the green sections are unfragmented files. Look at how much red there is – these are fragmented files.
Bottom: After an optimisation, the files are stored sequentially. They can be read from the drive in uninterrupted streams, so your hard drive seems faster.

STF VERDICT ● Diamond Edge 2

HIGHS
- Very reliable
- Can catch errors before they get serious
- Powerful disk editor

LOWS
- Sometimes fiddly

In short...
The hard drive toolkit which all others aspire to. Essential if your data is valuable.

94%

www.stformat.com

ArtPad

Drawing with a mouse is a bit like playing the piano with your nose – it's possible, but it's certainly not ideal. Here's an alternative... an alternative mouse, that is.

The Wacom ArtPad – better than playing the piano with your nose.

Mice? Mice are great, but they can't draw for toffee. Oh, *computer* mice. Computer mice are great, but you can't draw with them. Enter the graphics tablet.

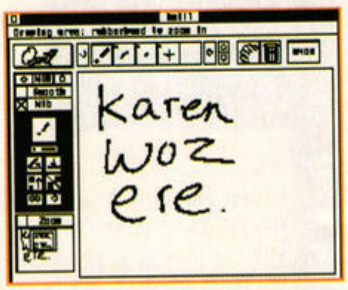
You've probably heard of the Tabby (*STF* 54, 86%), a pad and pen that makes art packages much easier to use. The pen is easier to control than a mouse, and it's a more natural drawing tool. Now there's an alternative – Wacom's ArtPad.

Small but solid

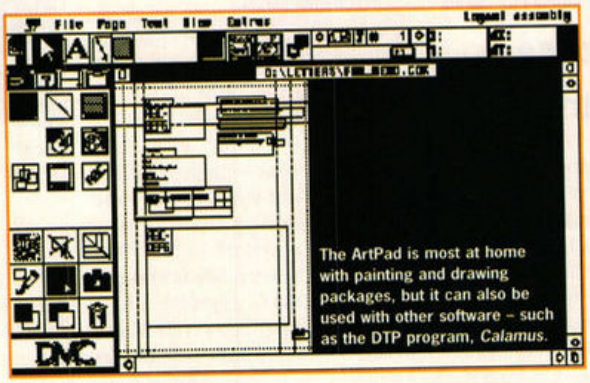
Roughly A5 in size, the ArtPad has a built-in wrist rest and an active area of 128 by 96mm. It weighs a mere 400g, but feels very well built. The pen itself is also very light, weighing in at just 8g. It looks and feels just like a normal pen, apart from the button on the side of the barrel. The nib is replaceable, and a spare is included.

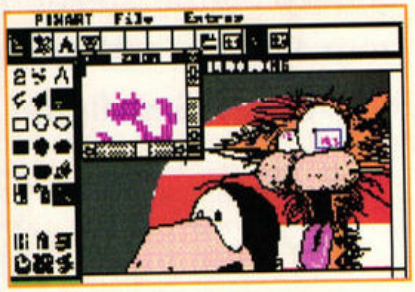
The power adaptor is one of those all-in-one-plug types, so you'll need a spare socket. A generous 2m cable connects the ArtPad to your ST's serial port. It ends in a nine-pin plug, but an adaptor for 25-pin sockets is also provided.

The documentation is very good. Much of it relates to the *Windows* software, but the more general material covers everything you need to know.



Quill 2 includes a driver for the ArtPad. Drawing with the pen is much more natural than using a mouse.


The ArtPad is most at home with painting and drawing packages, but it can also be used with other software – such as the DTP program, *Calamus*.


If anything, the ArtPad allows more accurate positioning of the pointer than a conventional mouse does. When it is used with *PixArt*, you can easily change the colour of a single pixel.

CGS ComputerBild can supply the ArtPad with an ST driver, which goes into your Auto folder. Alternatively, *Quill 2* (£42.95, also from CGS ComputerBild) is available with the ArtPad driver.

You can configure both the active screen area and the way the pen behaves. Sadly, the ST driver doesn't support the ArtPad's pressure response feature, so you can't increase the thickness of your line by pressing harder.

Wacom's ArtPad performs excellently as a simple mouse replacement

As you please

However, you can set the pressure required for a tap of the nib to register as a 'click'. This means that both 'tappers' and 'thumpers' can adjust the Art Pad to suit. You can also opt for audio feedback when the pen is tapped on the ArtPad's surface. Finally, the barrel button can be set to emulate either a left double-click, or a click of the right mouse button.

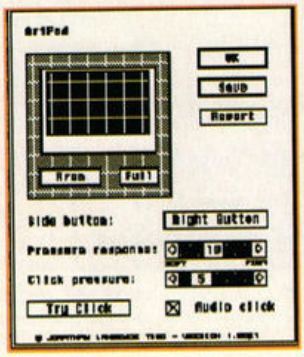
The Artpad is very versatile. Over and above its function as a drawing tool, it performs excellently as a simple replacement for the humble mouse. It can also be used as a mouse mat if you want to keep your rodent for some tasks.

With the ArtPad set to full screen area and the barrel button set to emulate a right click, you can draw lines and make single and double clicks by tapping the nib on the tablet's surface. If you're not happy with what you've done, abort it by clicking the barrel button.

After a few days you'll find yourself reaching for the pen rather than your mouse. You might have to hunt for it though, as it does tend to disappear under the clutter on your desk – a pen holder would be a useful addition.

The ArtPad is great for painting and drawing, but at £187 it's probably a bit pricey if you're just looking for a new mouse. If you've got money to burn, though, it's a nice thing to have. *stf*

DAVE HOWELL



This dialog box enables you to set the operational parameters of the ArtPad.

Product: Wacom ArtPad
Price: £186.83
Contact: CGS ComputerBild
Tel: 0181 6797307
Min system: ST/TT/Falcon030

STF VERDICT ● STF VERDICT ● STF VERDICT

Wacom ArtPad

HIGHS
- Excellent build quality
- Duplicates all mouse functions, but is more natural for drawing

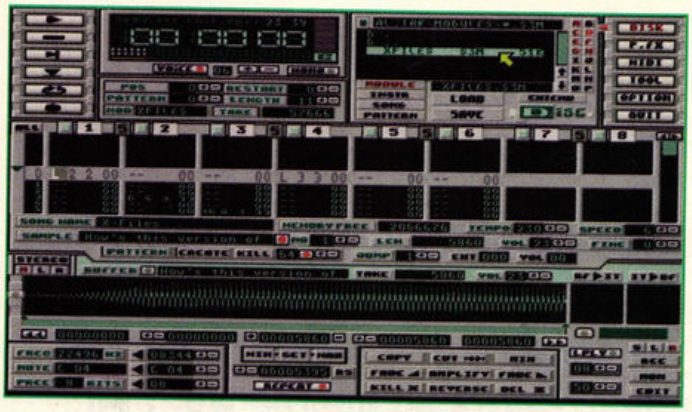
LOWS
- Pen rather light
- More than three times the price of the Tabby

In short...
The ArtPad oozes quality and makes drawing and painting easy and natural.

79%

www.stformat.com

Digital Tracker



Through clever trickery, we bring you the whole of *Digital Tracker*'s big virtual screen in a single screen grab.

Fancy composing some high quality digital stereo music on your Falcon, with no extra hardware? Get digital tracking...

Digital Tracker is a Falcon-only soundtracker program which takes full advantage of the Falcon's MC56001 DSP chip to provide up to 32 channels of crisp 16-bit stereo tracking power.

Digital Tracker runs on all colour monitors and TVs, and uses a 'virtual screen' system to pack in a bigger display. Moving the mouse to the bottom of the screen scrolls it down to reveal another bank of tools. The screen update is very fast, and you'll soon get used to the scrolling system.

Everything in *Digital Tracker* is controlled from one screen. Clicking the tool icons changes a section of the screen to suit that tool – clicking Disk opens a small file selector, for example. Since the rest of the screen stays the same, you always know where the tools will be. The menus are tightly packed, but well designed so things don't get lost among the clutter.

Sound quality is very high, with thumping bass and crystal-clear treble

Digital Tracker can load tracker modules in various formats, including standard four-channel MODs. *ScreamTracker* S3M files from the PC are also catered for, although we found one or two which wouldn't replay properly. It saves modules in its own DTM format, and doesn't seem to be able to export standard MOD files, even if you've only used four channels.

Digital Tracker can cope with packed files, but you'll need a separate packer like *Pack Ice* or *Atomik* to pack them. Sourcecode is also provided for C, assembly and *GFA* programmers who want to play DTM tunes via the DSP chip.

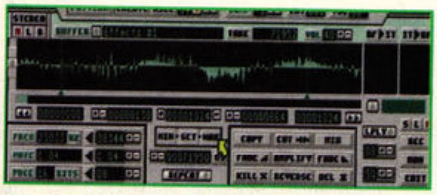
The composition system is notation-based, with notes represented in numerical form – unlike *Quartet*, it doesn't have a stave display. Notes can be entered individually, or using the real-time recording mode. The wide range of block functions makes it easy to cut and paste channels or parts.

You won't need to nip back to the Desktop to tweak a rogue sound – you can do it all within *Digital Tracker*'s excellent sample editor.

The editor can also sample directly from the Falcon's stereo input. Samples can be mono, or the right or left side of a stereo sample. *Digital Tracker* comes with 950K of excellent sampled instruments – the analog basses are particularly good. Sound quality is extremely high, with thumping bass and crystal-clear treble – it's probably the best we've yet heard.

The program's French heritage did occasionally peep through – you need to use the keypad to enter a full stop in a filename, for instance. Minor quibbles aside, though, *Digital Tracker* is a remarkable piece of software. It's without a doubt the best soundtracker we've seen on the Falcon, and the sound quality is the best we've heard on any platform. *stf*

FRANK CHARLTON



Digital Tracker's Sample editor is excellent, and can grab sounds via the Falcon's hardware too.

Product: Digital Tracker 030
Price: £49
Contact: 16/32 Systems
Tel: 01634 710788
Min system: Falcon030 only

DIGIPLAY

DIGIPLAY is a module player in Accessory form. It copes with lots of formats, and can play back at 25 and 50KHz. It also runs in the background, so you can listen as you work. It even has a jukebox function, and will play a tune at random from a specified directory.

MIDI COMPATIBILITY

You're not restricted to composing tunes on the Falcon's keyboard with *Digital Tracker* – it can accept input via MIDI from any standard MIDI keyboard.

Older trackers, such as *Audio Sculpture*, professed MIDI support, but generally responded very slowly. *Digital Tracker* is excellent in this respect, and note replay is instant. You can tap notes in individually in step time, or record one channel in real time as the others play back. You can only record one channel at a time, though, so it's not possible to input chords across multiple channels.

Digital Tracker can even be configured to trigger functions like the Record, Stop and Play buttons when it receives certain notes. This works well, and saves you from having to look from synth to monitor every two minutes.

VERDICT ● STF VERDICT ● STF VERDICT

Digital Tracker

HIGHS
- Superb sound quality
- Very good MIDI support
- Loads lots of formats

LOWS
- Can't save MOD files

In short...
At last the we have a soundtracker to rival the Amiga's best – and to beat it.

90%

www.stformat.com

Squirrel 4x CD-ROM

The Squirrel 4x CD-ROM drive is a bit of a looker – apart from the cartoon squirrel stuck on the front, that is.

Twice as fast as yer average CD-ROM, Guv. That's HiSoft's promise where the new Squirrel Quad-Speed is concerned...

HiSoft recently brought us an excellent double-speed CD-ROM drive, but before we had chance to review it, along comes one that's twice as fast again. Four time as fast as an audio CD player, the 4x is the *USS Enterprise* of HiSoft's CD-ROM range.

At its heart is a Toshiba XM-5301B quadruple-speed mechanism, as featured in issue 72's CD-ROM opus. We liked the drive then, and it was only the bare SCSI mechanism we reviewed.

Secret Squirrel

HiSoft has fitted the Toshiba device into a case that matches the cases used for the Squirrel hard drives. The Squirrel 4x is sleek and smart, and the standard of construction is very high. It feels solid, and isn't likely to slide about your desk.

The front panel harbours power and drive access LEDs, while the drive itself has the standard eject button and a volume control for the headphone output (used for normal audio CDs). A look at the rear confirms the build quality, and reveals the welcome addition of line-level phono outputs for connecting the 4x to your hi-fi system. Bit of a bonus, that.

The Squirrel 4x meets all the accepted standards for a state-of-the-art quad drive. It's fully PhotoCD compatible, and supports the multisession format, so images can be added to existing discs later. It can also be used as an audio CD player, but you'll need extra software if you want music while you work.

HiSoft doesn't include driver software in the basic kit, but will supply *ExtenDOS Pro* (*STF* 71, 92%) for an extra £29.95 if you need it. As we said when we reviewed it, *ExtenDOS Pro* is worth every penny, even if you have a PD or shareware driver already. The *ExtenDOS* audio CD player works beautifully, needless to say.

Once it's connected, the 4x flies like a greased cruise missile – it's fast

Daisy, Daisy...

If you have a Falcon030 with an internal IDE drive, you'll need a SCSI to SCSI2 cable to connect the drive directly to the rear of your computer. If you've already added an external SCSI hard drive, however, connecting the 4x is as simple as buying a 50-way to 50-way SCSI cable and daisy-chaining it off the drive. HiSoft supplies a SCSI Terminator plug to end the chain, eliminating the risk of termination problems. This is a nice touch – not everyone provides one as standard.

ST users can connect the 4x to an existing hard drive host adaptor such as System Solutions' Translator or Gasteiner's TopLink. As with the Falcon, daisy-chaining to an external SCSI hard drive or another CD-ROM drive is as simple as buying a SCSI cable.

Once it's connected, the 4x flies like a greased cruise missile – it's fast. With an average access time of 190ms and a data transfer rate of 600K per second, the difference between the 4x and a double-speed drive is very noticeable. We ran a time-critical Falcon demo with synchronised music and graphics direct from the CD, despite that fact the README file said it wouldn't work. Obviously the author meant it wouldn't work on a double speed drive, as it ran without a hitch for the full duration straight from the CD. The Toshiba mechanism uses some clever trickery to begin reading data as soon as the drive starts spinning, unlike other drives, so the 4x can do its stuff straight away.

HiSoft's price is extremely competitive for a top-end drive like this. If you're thinking of upgrading an existing drive, or want to dip your toes for the first time, you need look no further than this superb piece of solidly constructed high-speed kit. *stf*

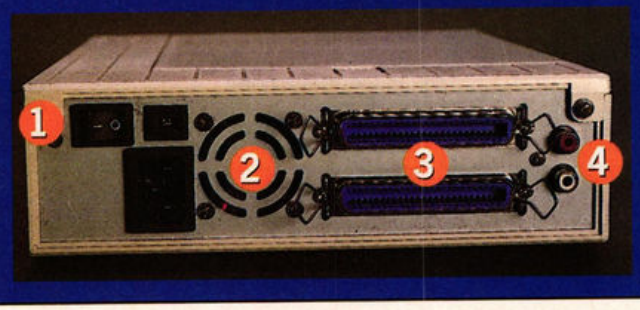
FRANK CHARLTON

Product: Squirrel Quad-Speed CD-ROM drive
Price: £259
Contact: HiSoft
Tel: 01525 718181
Min system: Any ST/STE with a host adaptor, Falcon030 or TT. Driver software required

ROUND THE BACK

The Squirrel 4x packs everything into a compact case. Here's the back panel in detail...

1 SCSI ID Selector: Sets the SCSI ID number, enabling you to avoid clashes with other devices.
2 Fan: Small and very quiet, it keeps the drive cool and comfortable.
3 SCSI Connectors: Industry-standard 50-way SCSI ports, as used on modern host adaptors like the TopLink, Translator and ICD Link.
4 Audio Out: Line-level, for connecting direct to your hi-fi system's CD Input socket, and a very nice bonus indeed.



STF VERDICT

Squirrel 4x CD-ROM

HIGHS
- Solidly constructed
- Mucho speedo

LOWS
- Er, it has a squirrel on it

In short...
Faster than a speeding missile, this quad-speed drive is the bee's knees.

96%

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Crawly Crypt CDs

YES, BUT...

You may be wondering why you should pay for a disc where almost every program requires that you pay the author as well.
The answer is that it saves you loads of money.

Ordering all the shareware on each CD-ROM from PD libraries, or even downloading it from a BBS, would cost a lot more than purchasing the CD-ROMs. And remember, you don't have to register everything on this disk, far from it. You only need to pay for programs that you use regularly.

Deep underground, footsteps echo on ancient stone steps until finally you enter an Atari treasure cavern... the Crawly Crypt.

The Crawly Crypt Bulletin Board has been in operation since 1988, and over the years vast numbers of files have been uploaded to it. Consequently, Jim Collins, the SysOp, has decided to release a large chunk of his filebase on CD-ROM. The *Crawly Crypt* CDs each offer over 600MByte of Atari PD and shareware programs, making them a potentially useful resource for Atari owners.

The emphasis is on Atari programs, although there are a number of text files as well.

The files are ready expanded, clearly described and well laid out

Most importantly, these discs are not filled up with pictures, MOD files and sound samples – there are already plenty of excellent CD-ROMs offering these kinds of files, and they wouldn't be appropriate on an Atari-specific CD-ROM.

Once the CD-ROM has loaded you are presented with a wealth of text files. As well as a massive global file list, there are mini lists in every folder. These identify each program and explain its purpose. It's very refreshing to see such well written and comprehensive file description. However, the discs would be even better if they provided a shell to help you locate and evaluate the programs on offer.

This program plays Christmas tunes whilst flashing the lights on the tree. Yo-ho-ho!

Dungeon of delight

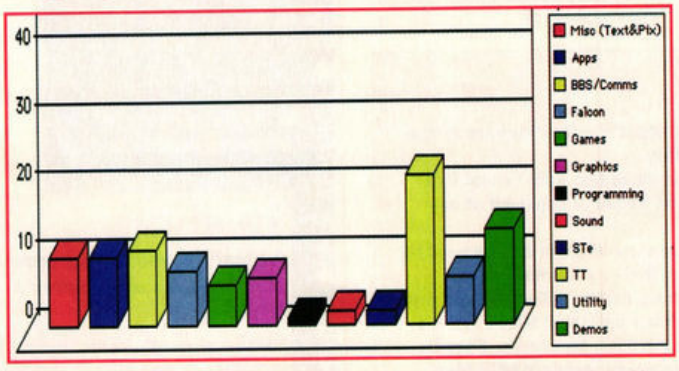
Both disks together contain around 3,000 files in a variety of different categories (see the chart, below). Support for the MIDI musician is all but non-existant, but there is plenty for the more artistically minded. Comms enthusiasts also have plenty to celebrate.

Special sections with STE-, TT- and Falcon-only programs and demos are included. The utility sections on both disks cover a wide range of programs, including archivers, boot utilities, multitasking and disk utilities, while the applications folders contain word processors, spreadsheets, CAD and DTP programs.

You can run many of the programs directly from CD-ROM, but you'll have to copy some to your hard drive. A small proportion of files have been archived using *STZIP 2.6* because their file names included illegal characters.

These *Crawly Crypt* CD-ROMs will become popular because the files are ready expanded, clearly described and well laid out. *stf*

ANDY CURTIS



This graph shows the percentage of disc allocated to the different subjects and machines. The CDs contain around 3,000 files each, so there's bound to be something you like.

Veritable gold mines for the Atari enthusiast, the *Crawly Crypt* CD-ROMs are jam-packed with old and new ST, TT and Falcon software.

Product: Crawly Crypt 1 and 2
Price: £27 each
Contact: 16/32 Systems
Tel: 01634 710788
Min system: Any ST, STE or Falcon with a CD-ROM drive

STF VERDICT

Crawly Crypt CDs

HIGHS
- Packed with Atari software
- Good file descriptions

LOWS
- No menu program

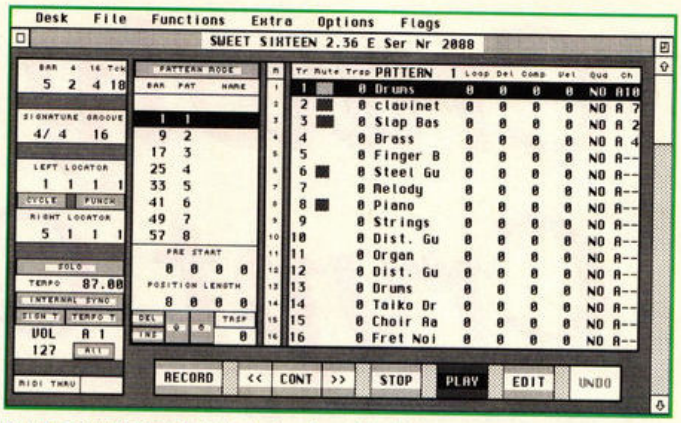
In short...
Invaluable, so long as you have a CD-ROM drive. Many, many files of all types.

83%

www.stformat.com

Sweet Sixteen

This new entry-level sequencer promises much, but does it deliver?



If you're after a flashy display, look elsewhere. Still, looks aren't everything and *Sweet Sixteen* does perform well.

Sweet Sixteen may be just what the ST market needs, a cheap but fully featured commercial sequencing package. Roni Music's no-nonsense program is able to handle system-exclusive messages, Type 0 and 1 MIDI files, and is a capable music creation tool.

Sweet Sixteen arrives in a simple plastic wallet with a modest A5 manual. The program files are contained on just one master disk, which you will need to keep in Drive A. This is an effective form of copy protection, but can be somewhat annoying.

The manual is written purely for the PC version of the program, with both screenshots and instructions tailored accordingly – the only concession to ST folk is an 'Atari' sticker on the front cover.

Aside from this, *Sweet Sixteen* is an excellent program. The screen display is not particularly pleasant to look at, but it's functional, and the sequencer engine performs well. It's a nice program to use, too, because the mouse remains enabled throughout. This is thanks to a well-thought out multitasking shell which enables all functions to be accessed even while the sequencer is running.

Sweet Sixteen runs on all Atari computers, including the TT and Falcon, and it's a snip at just under £60.

Sweet Sixteen has been designed to handle standard MIDI files and it imports type 0 and 1 MIDI files effortlessly. It can also cope with system-exclusive data (SysEx). This means that if you load a standard MIDI file into the sequencer, it will be able to set up your General MIDI (GM) sound module ready to play the piece you have chosen.

The only drawback is the 16-track format. Some MIDI files exceed the 16-track limit, which means *Sweet Sixteen* has to put the extra parts into another pattern, and they can't then be played with the others. There is a way round this, but it shouldn't be necessary.

Perhaps the author doesn't want to expand the number of tracks because of the sequencer's name. This would be a real shame as 24 tracks is far more realistic for MIDI musicians these days. Still, as a MIDI file editing and replay engine, *Sweet Sixteen* is very stable.

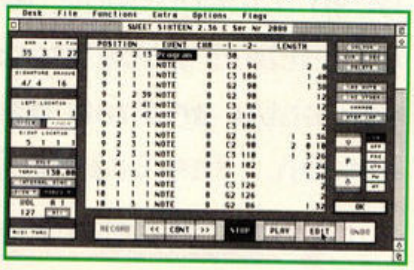
As a MIDI file editing and replay engine, *Sweet Sixteen* is very stable

The Grid and Event edit pages are rudimentary but effective. Several touches have been borrowed from other well known sequencers. For example, in record mode the screen turns black and data is changed by using the left and right mouse buttons to increase and decrease values.

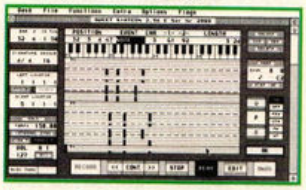
If you're looking for a cheap sequencer, primarily for playing and editing MIDI files, then *Sweet Sixteen* is just the job. It lacks editing and arranging power on the compositional side, but is nevertheless very capable.

Given the high price of the flagship sequencers, *Sweet Sixteen* is excellent value for money. An updated version with more tracks per pattern would be even better. *stf*

ANDY CURTIS



Sweet Sixteen's Event editor is a simple list of all the MIDI events in a pattern. MIDI events can be edited, removed or added with ease.



If you prefer the graphical approach to editing, this piano-roll-style Grid editor is sure to please.

Product: Sweet Sixteen
Price: £59.95
Contact: 'Hands On' MIDI Software
Tel: 01705 783100
Min system: All STs (1MByte), TTs (4MByte) and Falcons (4MByte)

MAIN FEATURES

Pattern Screen: This is where you create your music. Up to sixteen tracks can be used for each pattern, and the patterns can be played in a specified order to create a full song.
Event Edit: A full list of MIDI events including all controller information. This page enables you to edit MIDI data at a fundamental level.
Grid Edit: A graphical editor in the style of a piano scroll. Seeing where the notes are on a piano keyboard makes finding specific notes easy.
Tempo Edit: A full tempo editing page enables you to fine-tune tempo changes and add or remove tempo events where necessary.
Signature Edit: Similar to Tempo edit, except that time signatures can be added or removed at any point in a pattern.
Quantize: Variable quantize strength can be used to create a more natural feel to your music.
Mixdown: Multiple tracks can be mixed down to one track while retaining their individual MIDI channels.
Remix: Reverses the mixdown procedure. *Sweet Sixteen* also loads and saves standard MIDI files.

STF VERDICT

Sweet Sixteen

HIGHS
- Handles SysEx and Type 0 and 1 MIDI files

LOWS
- Poor manual
- Limited number of tracks

In short...
A great entry-level sequencer that would be even better if it had more tracks.

79%

www.stformat.com

On Stage

The *On Stage* software enables you to play sets of MIDI files on your ST without a monitor.

A MIDI file player which doesn't require a monitor? Have the people at 'Hands On' MIDI gone completely mad?

If you need to use MIDI files during live performances, you've probably considered getting hold of a hardware MIDI file player. However, this is an expensive option, and completely unnecessary – with a little help from *On Stage*, your faithful ST is more than up to the job. It enables you to use your ST without a monitor or hard drive, making transportation and setup simple and risk free.

The master disk contains two main programs. The first enables you to configure the sets with the MIDI files you need, while the second resides in an AUTO folder ready for use on stage.

As well as telling you about the product, this handy dialog in the editor program shows you how much disk space is available.

On Stage Editor

The editor runs in medium or high resolution and enables you to map out your MIDI file sets. Each set consists of four banks, and each bank can contain up to eight MIDI files. This means that loading one set gives you instant access to up to 32 MIDI files.

The size of your sets is limited only by available disk space, which could be fairly tight on a floppy in Drive A. *On Stage* can also be used with a hard drive, but you may not want to lug one around. A good solution would be to fit a HD floppy drive.

While you are in the editor program you are able to modify program change numbers in MIDI files, or even address an extra MIDI port if you have the 16+ cartridge (also from 'Hands On' MIDI, £24.95). This means that you are not limited to GM files, and can use your own customised files with a good degree of control, even if you don't have a sequencer program handy. You can also mute the melody lines in GM files if you're performing the song live.

You can also mute the melody lines if you're performing the song live

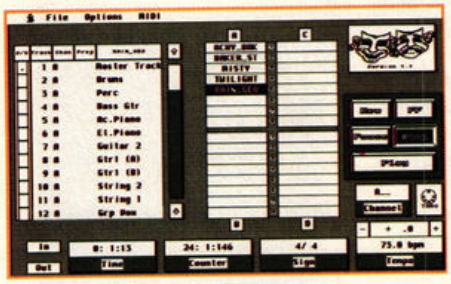
Sets are saved as 1.SET, 2.SET and so on through to 9.SET, and can be accessed by pressing F1-F9 when you're in *On Stage* mode. If you load a new set while *On Stage* is still playing, it will not interrupt the music. The new set is loaded in the background, so there should never be a pause as you wait for a set to load.

The four keys across the top of the numeric keypad select the four banks for playback, and the numbers 1-8 select the eight MIDI files in each bank. When you hit a number, the appropriate file starts immediately. The [ESC] key acts as a panic button, and sends a note off message on every channel to halt any hanging notes. All the keyboard commands are easy to remember and soon you won't need the display box (see The Black Box, panel).

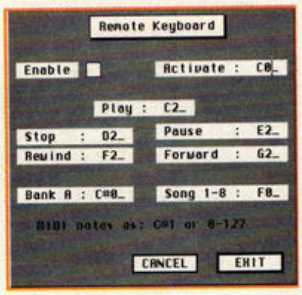
On Stage is an extremely stable, well-written piece of software – it is even reset-proof in case the button at the back gets knocked. If you have an ST, and want to buy a hardware MIDI file player, it will save you loads of money – and give you more control.

On Stage is the only product of its type and it would be very hard to better. Highly recommended. *stf*

ANDY CURTIS



The main editor screen shows the four banks within the set being edited, as well as the track list for the current song. MIDI files can be auditioned and customised here.



If you don't want to use your ST's keyboard, *On Stage* can be controlled from your MIDI keyboard.

You can even play along with a MIDI file. Simply rev up your MIDI keyboard and blast out a killer piano solo.

Product: On Stage MIDI file player
Price: £39.95, or £79.95 with hardware unit
Contact: 'Hands On' MIDI
Tel: 01705 783100
Min system: 1MByte ST

THE BLACK BOX

On Stage **comes with a neat little black box which plugs into the parallel (printer) port on your ST. It has eight LED indicators – just enough to let you know what's going on when the monitor isn't attached. There is also a version of *On Stage* available without the hardware add-on.**

STF VERDICT

On Stage

HIGHS
- Easy setup
- No breaks for loading
- Excellent manual

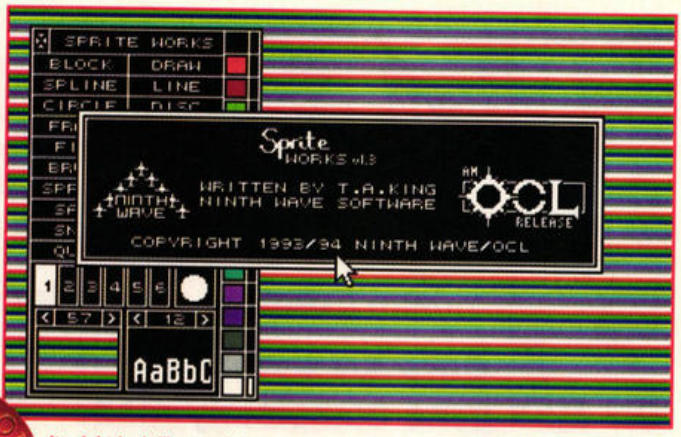
LOWS
- There's nothing to complain about

In short...
Playing back MIDI files without a monitor is a reality with *On Stage*, which is a superb program.

92%

www.stformat.com

Sprite Works 2



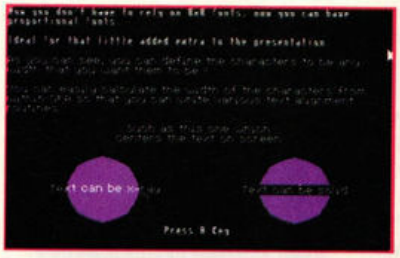
It might look like a rainbow gone mad, but it offers a wealth of useful commands. *Sprite Works* is a must for fans of *GFA Basic*.

'The Game Makers' Development Kit' is put under the thumb screws by our *GFA Basic* expert, and comes up smiling. Bravo!

Sprite Works is a *GFA Basic* extension that helps you write games and enhance all your other *GFA* programs. As well as providing individual programs for designing and tweaking sprites, samples and graphics, it gives you a massive collection of commands covering everything from collision detection to unpacking files and playing Soundtracker music.

Machine code

Each command is a small chunk of assembled code, which you load into a GFA 'INLINE' statement and call whenever you need it. You only need load and compile the commands you want for a particular session.



This jazzy sample output demonstrates *Sprite Works'* font capabilities.

Sam Works, a sample player and editor, is a good example of what can be achieved with copies of *GFA Basic* and *Sprite Works*.

The basic package comes on three disks (see On the Disks) and includes an on-disk manual. A hefty A4 printed manual is also available, but costs an extra £8. This tome could prove a bit technical for beginners, but it's very well written, and anyone with a little programming experience will find it easy to follow. However, an A5 manual might have been easier to handle in a cluttered working area.

Sprite Works includes a full drawing and sprite design system. This is exceptionally easy to use and a lot of thought has clearly been invested in the system's design. With it you can create and animate your sprites, then save them ready for direct inclusion into your *GFA* code. Features include the copying of sprites from one screen to another, and a 4x real-time zoom.

Operating the pop-up menu with the left and right mouse button is a little strange at first, but seems quite natural after a while. Everything works well, and the addition of extra fill patterns is a nice touch.

Altering the examples to suit your needs is as easy as falling off a log

Sam Works, an easy-to-use music sample player and editor, is a good example of what can be achieved using *GFA Basic* and *Sprite Works*.

Examples and code

The examples are fun to test, and altering them to suit your needs is as easy as falling off a log. Each snippet of code showed a working example from *Sprite Works'* arsenal of commands, and working through them is much easier than reading the manual. We were especially taken with the high-quality demos in the \SOURCE\MISC directory.

The package also includes two programs for designing backgrounds. One is for non-scrolling applications (puzzle-style games), while the other allows for scrolling (both vertical and multi-directional). Working examples are included, and the documentation for both programs is very clear.

The example *GFA* code is very good. This section is about font manipulation.

Splash out

Sprite Works is an impressive extension and an indispensable tool for any *GFA Basic* enthusiast. This one comes highly recommended. Buy it, you won't be sorry. *stf*

MAC MARSDEN

Product: Sprite Works 2
Price: £7, or £15 including a printed manual
Contact: Ninth Wave Software
Address: 172 Spencers Croft, Harlow, Essex CM18 6JR
Min system: ST/STE/Falcon, *GFA BASIC* required

ON THE DISKS

Disk 1: Comprehensive documents covering all topics, the INLINE listings, map designing programs, fonts, *Sam Works* and the *Sprite Works* art package.
Disk 2: Examples and source code that you can load into *GFA Basic*. Check out the demos in \SOURCE\MISC.
Disk 3: Two well-written games, *Goin' Down with the Captain* (see this month's Cover Disk) and *Saturn's Rings* (Meteor-style), with documentation for both. Both were coded using *Sprite Works*, and, I have to admit, it was difficult to put them away for long enough to write this review.

Sprite Works 2

HIGHS
- Easy to use
- Excellent examples, demos and source code

LOWS
- Not really for the absolute beginner
- Manual a little unwieldy

In short...
If you are a fan of *GFA Basic*, this package is an absolute must buy.

90%

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(no, honestly)

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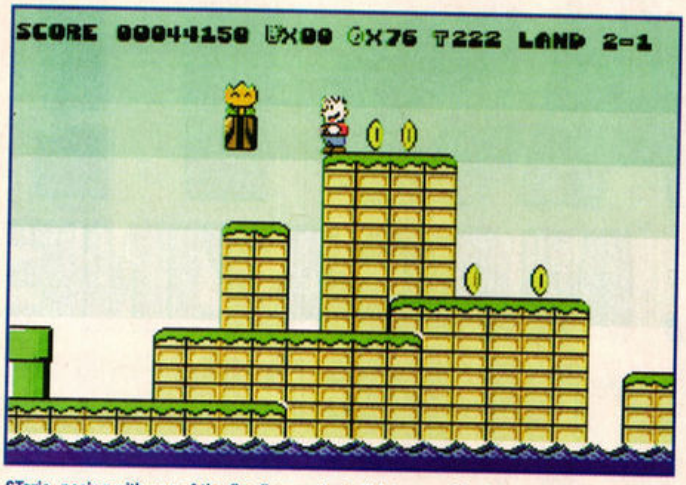
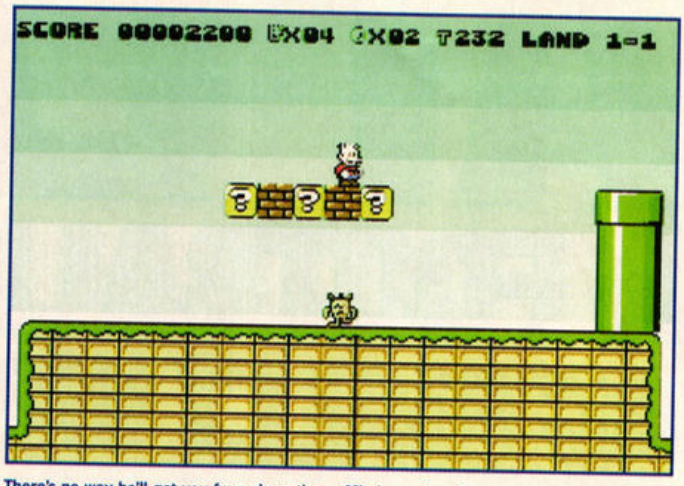


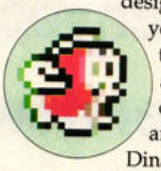
STario, posing with one of the fire flowers that will later turn him into an evil, flame-breathing maniac, who attacks small children in the night. Okay, slight exaggeration.



There's no way he'll get you from down there. Mind you, there's no way you can headbutt those bonus boxes from up there either.

STarioland

He's short, he's cute, and he wears a sharp green suit. STario's out to save the day, with a little help from Top Byte software.



All other genre classifications aside, there are two distinctly different types of platform game. The first is just about every platformer you've ever played, calling for timing, precision, and an eye for detail. The second was introduced by Nintendo and pioneered on the Gameboy, NES and SNES. Top Byte's latest platformer follows the second school of thought, placing the emphasis on speed, movement, colour and fun.

STarioland has no large, lifelike characters, no warehouse backdrops and no enemies walking blindly back and forth waiting to shoot you. Instead, there's a garish sky looming over bright green grass, dotted with all manner of weird and wonderful creatures going about their daily business, ambling back and forth as it pleases them. And then there's the hero, STario, whose mission is to get from the left-hand side of each level to the right, collecting as many power-ups as possible along the way.

So what's different? Well, the Mario series was originally designed for a much younger audience with the emphasis on speed and movement as opposed to watching and waiting. Unlike Dinamic's *Game Over*, which consists of tentatively pacing into a new area, examining the landscape for obstacles and judging the perfect distance from which to jump, *STarioland* is just one long madcap dash across cheerful terrain. If you spot a large red ambling blob in your path, you launch yourself into the air, knowing that a very generous jump, combined with the ability to guide yourself once you're airborne, will see you safely through. If you misjudge and land on the creature's head, it'll die with a satisfying squelch. The emphasis is on fun. There are no stupidly difficult bits to get tangled up on, and no pixel-perfect jumps to perform. The generosity of gravity, physics and landscape leaves you to enjoy yourself.

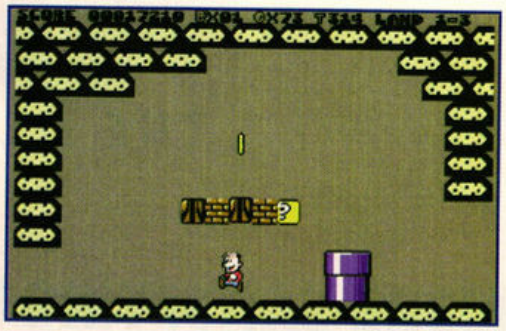
STarioland is just one long madcap dash across cheerful terrain

So, plot aside, it's your job to guide STario through many worlds filled with odd, not-quite-alien creatures, in an attempt to reach the far right-hand side of the whole world, at which point the end sequence tells you that you've finished. As you pass through each level you have a series of bonus coins, extra lives and other power-ups to collect, and a goal to reach before the time limit runs out.

But he's a wimp!

On his own, STario is a fairly weedy little bloke – at times he's about 16 pixels high, which isn't much bigger than some of the creatures he's up against. Each of his lives comes in two halves – the first hit knocks him down to this minute size, and the second kills him, making you start the level again.

He's not totally useless, though. There are plenty of power-ups in the bonus bricks, which are littered throughout the levels, and these either increase him in size or give him some handy extra powers. The main one is the ability to



Here you've been whisked off to bonus central. This time the boxes just contain coins, though.

HAVE WE MET BEFORE?

Anyone who's played Nintendo's *Mario* series will notice some striking similarities between those big-selling titles and *STarioland*. This is because this Top Byte release draws on the style, technique and playability of the original *Mario* games, and on the characters involved in them. We're not implying that *STarioland* is simply a *Mario* clone, but if you're a closet console owner who simply adores *Mario*, you're not going to be disappointed by this release. In fact, you're not even going to have to get used to playing a new game.

There is, incidentally, nothing unusual about this heavy similarity. The original Nintendo game is excellently playable, and the author has learned enough from that to produce a game with similar traits.

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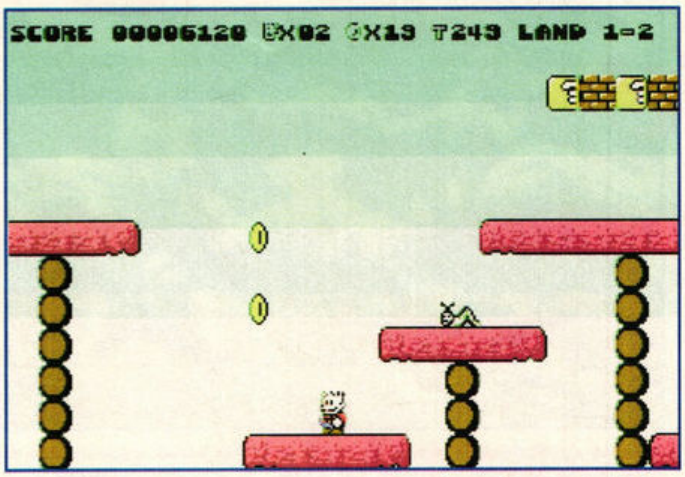
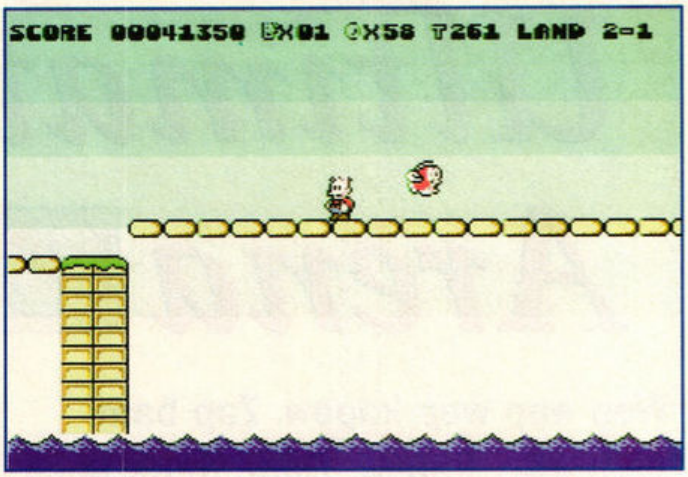


These may look like generously big platforms, but add a degree of inertia and a highly impatient gameplayer, and they're actually fairly tight.



The fish didn't start up here – it's the first of a large bunch of fish that all jump out of the water at you as you pass. Kill them.

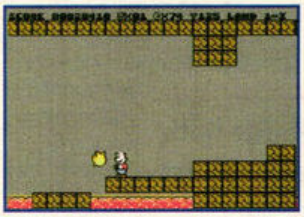
spit fire in a parabolic arc towards anything that looks vaguely dangerous, courtesy of the rare fire-flower.

The control system is, unfortunately, less than brilliant. STario's jump is produced by an 'up' movement of the joystick (and crouch by 'down'). This tends to throw you off balance, as it's not as easy to control and hold a diagonal on a joystick as it is on a gaming pad, which would have jump assigned to one of the many buttons. ST joysticks only have one [Fire] button, though, so any problems you have with the controls are due to the constraints of the platform.

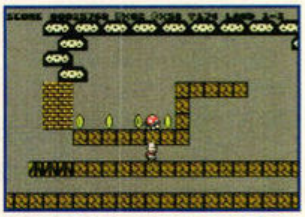
Button blues...

The same problem shows up when you come to use the [Fire] button which can, at different times, do several different things – as well as holding it down to dash, you can use it to fire when you've got the necessary power-ups.

Piling too many actions on to one button is a dangerous thing for a game to do, but with the standard joystick there isn't much choice. Incidentally, we recommend you get your hands on an old Sega Master System control pad, as it gives you a D-Pad instead of a stick, letting you control your direction with one thumb instead of a whole arm.



There's very rarely more than one bad guy on screen at any one time, which always helps the gameplay. This time, it's a case of bubbling-hot lava and scorching fireballs.



There are some places that big STario can't go – just as potholers will sometimes dislocate a shoulder to fit through a gap, you have to get hit by a... well, fish and, erm, shrink.

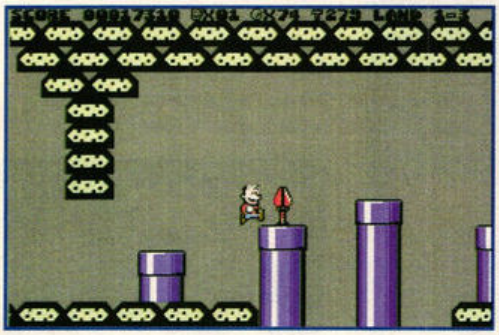
Technically, *STarioland* is competently written – the scrolling is fairly smooth, and the characters have enough frames of animation to make them cute without being too detailed. The world in which the game takes place has realistic gravity as well as reasonable inertia, so you won't have to spend too long getting to grips with the way the game feels. Collision detection is also excellent, so there's no justification for cries of, "That didn't hit me!" or, "I was nowhere near it!"

Before challenge, addictiveness or difficulty, *STario* is designed for fun

Although the levels are packed full of hazards, each one is presented clearly as a danger from about a mile off.

If anything lets *STario* down, it's the game's size. It all fits on to one disk, but you can't help feeling that some of the platform layouts are repeated throughout the levels.

Graphically, it's hard to judge a game like *STarioland*. STario himself doesn't look human – he's just a small blob of colour that you can abuse, throw around and drop with no hard feelings. The landscape he runs across and the bad guys he kills are all well-drawn, and faithfully pay homage to Nintendo's classic without too great a drop in resolution. Secondary graphics like the status bar and filler screens leave a little to be desired, though.



You don't have to know what it is. All you need to know is that it's pointy, red and designed to maim small game sprites.

Above all, it's fun

So, what we have here is a platform game that, before challenge, addictiveness or difficulty, is designed for fun. The levels are laid out to promote easy, free movement, letting you use the character to its fullest without ceilings, walls or deadly drops to hinder the entertainment and flow of the game.

That said, there's still a difficulty curve, and you'll be expected to have a greater control of our little red hero as the game rolls on. In the later stages you have to cope with collapsing bridges, moving platforms and all manner of other timing puzzles, but at least you're tackling them with a character who's light, flexible, and very manoeuvrable.

Finally...

If you haven't played many new-age platform games, and you think you might enjoy a taste of something different, Top Byte has got what you're looking for. *STarioland* comes with an *ST FORMAT* recommendation.

DAVE BARRINGTON

Product: STarioland
Price: £19.99
Contact: Top Byte Software
Tel: 01622 763 056
Min system: Two versions are available – one for STs with 0.5MByte and the other for those with 1MByte (please state which you need when ordering).

ST FORMAT VERDICT ● ST FORMAT VERDICT

STarioland

HIGHS
- Good, solid, fun game...

LOWS
- ...but it can get a little repetitive
- Tricky controls

In short...
A unique addition to the ST's gaming collection, and darn good fun to boot. Try it.

85%

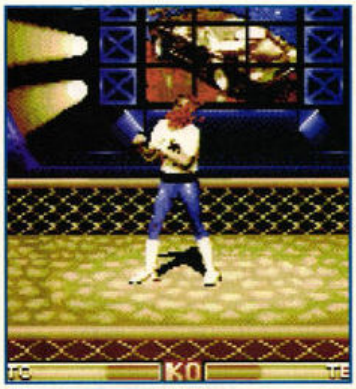
www.stformat.com

Ultimate Arena

Defeating a perfect doppleganger of yourself is harder than it looks, especially when she knows all your secret moves far better than you do.

Wop wop wop kapow. Zap bam bam wop, kapow. Ooof! Keeerunch biff bang, bang pow. Ouch!

It won't take you long to realise that *The Ultimate Arena* is a beat-'em-up with style. An audio and visual extravaganza, it has sufficient depth of gameplay to kick both *Street Fighter 2* and *Final Fight* well into the middle of next week.



As with most beat-'em-ups, the plot takes second place to the high-kicking action, and thankfully *The Ultimate Arena* doesn't ram what little there is down your throat. You play Terry, a macho Brad Pitt lookalike, or Sandy, his female counterpart, and the aim of the game is simple: you want to join a select bunch of Ultimate Fighters.

It's possible for both of you to end up on your backs, in which case you lose

Kato's invisibility isn't much of an advantage. Just keep kicking and punching wildly and you'll quickly connect.

To do this, you're going to have to fight your way to the top. The game loads, you select your character, you skip through the options screen... and suddenly you're out in the arena, where the baying crowd is waiting to see how you match up to their favourites.

If you picked Terry, you start off by fighting Sandy, and vice versa. Both characters can punch and kick, and each has a few special moves which only time, experience, pain, defeat and ignominy will reveal – you won't find them in the manual. Waggling the joystick randomly while pressing [Fire] will get you jumping and kicking, but you'll do better if you temper your madness with a little method. That way you'll find out just how Terry hurls fireballs or sends in a lightning flurry of punches. If you chose Sandy, you can dispatch a bolt of lightning or rain in whirlwind chops to Terry's neck.

Serena's freeze spell enables you to gaze admiringly at your well-executed moves as she moves in and kicks you to oblivion.

Both combatants have an energy bar which moves inexorably towards the KO emblem as the blows take effect. Whoever is left standing at the end wins the round, although it's possible for both of you to end up flat on your backs (in which case you lose. Bad luck).

Fizzle, sizzle

The playing area, which changes every two rounds, can also be used to your advantage. Get your opponent to the edge and there's a good chance he or she will fall off it or get electrocuted on an electric fence (in which case you win. Well done).

Once you've dispatched Terry/Sandy, it's on to the real stuff: four mean fighters of various nationalities stand between you and your goal. Joe and Arvester bear a 'slight' resemblance to characters from

WHO'S WHO in the ARENA

Terry: The Parisian male challenger might look more at ease on the set of a Hollywood movie, with a make-up crew in tow. Still, appearances can be deceptive, as you'll find out when he unleashes a fireball or a flurry of punches.

Sandy: The female challenger hails from London and carries quite an arsenal of secret moves, ranging from lightning bolts to a whirlwind chop. Despite her similarity to a certain page three vixen, she keeps her top half strictly under wraps.

Serena: The Persian Queen has a fetish for knives, throwing them with deadly accuracy. She also makes good use of her Middle Eastern accomplice to repel your onslaught. Her freeze spell will leave you suspended and vulnerable to attack.

Kato Chen Fu: Kung fu is only one of Kato's special moves – he even has the power to become invisible for a time. However, his tendency to jump back makes it relatively straightforward to get him to topple off his side of the game field.

Joe: This Indiana Jones wannabe has inherited more than his mentor's looks. Joe carries a revolver and whip (ooer), which he uses to good effect. He has an unlimited supply of hats, which seem to be lined with something deadly.

Arvester: Arnie to you and me, Arvester looks more like the T100 than the world famous muscleman. He is difficult to dislodge from the game arena, has the ability to heal himself rapidly and seems impervious to electricity. Be careful!

Mystery: There's also another mysterious opponent who we've only fought once, briefly (yeah, we got mauled). He, she or it looks a lot like one of those nasty aliens from *Alien*. Frankly, once you've got this far you deserve a good pasting.

www.stformat.com

Shocking your opponents is one way to dispose of them. How about the old 'I gave birth to alien love child' trick?

when the action heats up. Perfect rounds also carry bonuses to boost your score.

Some characters are easier to defeat than others, but they all have their stubborn moments, sapping your precious energy reserves and leaving you that little bit less to play with next time round.

If you manage to get past this motley crew you must fight a perfect double of yourself (the ultimate opponent) to join the Ultimate Fighters. Don't rest, though, because as soon as you're the champion, your opponents return to wrest your title from you. You may also meet a mystery seventh fighter who looks like no human I've ever seen, and makes even Arvester seem a bit soft.

There's also a two-player option which enables you and a friend to select any of the main six characters and beat the living daylights out of each other. It might not do much for your friendship, but it does enable you to to find out just how Serena throws that wicked bunch of knives at you.

action movies, while Kato and Serena look like distant cousins of *Mortal Kombat* characters.

Be careful about the amount of damage you sustain in each fight, because you are only partially healed between rounds (get your head kicked in too many times and you'll have to start again. Bad luck). As you improve you should be looking for 'perfect' rounds early on, so you can save your strength for

Once you find the secret moves, they're quite easy to reproduce

Sandy's attempt to negotiate her way past Arvester receives a short and straight-to-the-point reply.

Two-player mode enables you to beat up your best friend and find out how your opponents manage to pull off those bewildering special moves.

Seconds after he got this daring snap of the mystery opponent, our photographer was badly mauled.

Ooh, aaah

Graphically, *The Ultimate Arena* is superb. Each sprite is fully animated – even when the fighters are stationary they rock in anticipation. Everything runs smoothly and there are some excellent sampled sound effects. *The Ultimate Arena* exudes atmosphere, and it's easy to see why the game requires a massive 5MByte of data.

The controls are responsive, and once you find the secret moves they're quite easy to reproduce – despite their relative complexity. All the secret moves were explained to us, so we were able to process quite rapidly (you'll probably get pulped a few times. Bad luck). Look out for clues in Gamebusters over the next few months.

If you own a hard drive, disk accesses are quick and almost unnoticeable. Playing from floppies, however, can be pretty frustrating – you have to wait for data to load and unpack between fights. Think seriously about investing in a game that will spend a long time just accessing the disk.

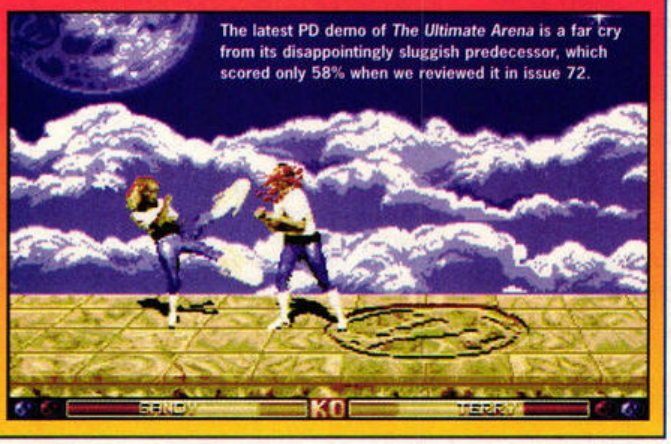
If you want a mean beat-'em-up that makes the most of your STE's sound and graphics, *The Ultimate Arena* is for you. The Falcon-specific version promises to look even better, so watch out for a review when it appears. In the meantime, keep your guard up, keep moving, and... ouch, keep taking the steroids. *stf*

NICK PEERS

Product: The Ultimate Arena
Price: £15 (International Money Order only, payable to TRB)
Contact: STeam c/o TR Buz, PO Box 100, F-68220 Hegenheim, France
Min system: STE/Falcon, 1MByte, colour monitor and joystick(s). Hard drive recommended

THAT PD DEMO

You may remember the less than favourable review of *The Ultimate Arena* PD demo in issue 72 (it scored 58%). However, STeam has now released a second demo, and it's a far better reflection of the full game. Available from LAPD (disk G405 at £1.50), it enables you to play either Sandy or Terry against the other over three rounds. All of the secret moves are included, and the fact you must reload after three rounds is surely a good incentive for registering. LAPD is on ☎ 01773 761944.



The latest PD demo of *The Ultimate Arena* is a far cry from its disappointingly sluggish predecessor, which scored only 58% when we reviewed it in issue 72.

Ultimate Arena

STF VERDICT ● STF VERDICT ● STF VERDICT ● STF VER

HIGHS

- Excellent graphics, sound, animation
- It's quite challenging
- Excellent value at £15

LOWS

- Too much loading and unpacking on floppy-only systems
- Limited number of opponents

In short...

This superbly presented and highly playable beat-'em-up is great value for money.

86%

www.stformat.com

PD Action

Nick Peers was too busy playing games to write an introduction this month.

Cartoon Capers

Power PD, Disk PWR995
All STs (not TOS 2.06 compatible)

GAME OF THE MONTH ST FORMAT

Cartoon Capers is a STOS beat-'em-up for one or two players. You, as Judo Jake the dog, take on Karate Kat over a variety of colourful cartoony-type levels. To make it to the next screen, you must either knock your opponent out, or ensure you've inflicted the most damage when the timer runs out.

You start off in the lounge, then move on to the kitchen, the garage, and other areas of the house. As you progress you must not only face fresh hazards and opportunities for bonuses (such as exploding bombs or ten tonne weights falling from the ceiling), but also master fresh sets of kung-fu moves. There's a wide range of moves, including head-butts, flying kicks and hearty knees to the groin.

The game puts up quite a challenge, although having to return to the beginning each time you lose can get frustrating after a while, especially as the game involves quite lengthy disk accesses between each level. The graphics are detailed and quite well animated, and the sampled sound adds to the game's chaotic atmosphere. The controls are a little sluggish, but *Cartoon Capers* nevertheless provides some good entertainment for beat-'em-up fans.

STF RATING: 82%

Karate Kat needs some lessons in the pecking order of things. It's dogs first, and cats second. Unfortunately, the further you progress in *Cartoon Capers*, the more difficult this rule is to enforce.

Jake and Kat. Two animals with one small problem: they hate each other.

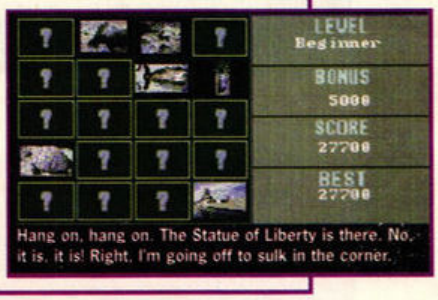
Memory Recall

Power PD, Disk PWR1445
All Ataris (not TOS 2.06 or Falcon), 1MByte required

Memory Recall is an attractive game that presents you with a grid of concealed pictures. Listen to the voice telling you which picture to find, then use the mouse to click on the square where you think the picture is. If you're correct, you score points; if not, you must try another square as the bonus continues to fall. It's impossible to fail to uncover all the squares – once the bonus reaches zero you just fail to score points until the next challenge, whereupon the bonus is reset.

The graphics are well done, but the sound samples are a little muffled. The game will help to improve your memory, but its attraction is undoubtably limited, despite the different levels of difficulty. Definitely one for the younger player.

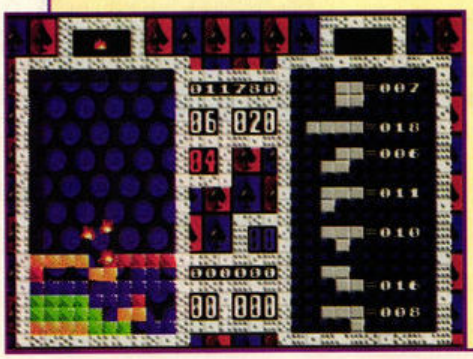
STF RATING: 65%



Hang on, hang on. The Statue of Liberty is there. No, it is, it is! Right. I'm going off to sulk in the corner.

PD and SHAREWARE NEWS

As reported last month, LAPD is now the official UK registration source for Dave Munsie's shareware titles. In addition, it is making pre-registered versions available.



You can register *Square Off* through LAPD for just £6. As Tetris games go, it's by far the best.

Frantick, Asteroidia **and** ***Square Off*** **can be obtained as shareware titles for £1.50 per disk. Both** ***Square Off*** **and** ***Frantick*** **come on two disks for the STE and Falcon (STFM owners need only one disk). Registration then costs just £6 per title.**

Alternatively, complete pre-registered versions can be ordered for £7 ***(Asteroidia)*** **or £7.50** ***(Frantick*** **and** ***Square Off)*****. LAPD is on ☎ 01173 761944.**

The PD Zone is a new public domain library catering for the ST. Although disks cost £2 each, Helena Sayce of The PD Zone points out the services offered, including a scheme to allow people to order by telephone, pay by cheque or postal order via post and receive their software the next day. Twenty-five per cent of profits go to charity.

The PD Zone is on ☎ 01983 867377, or at: 22 Brook Road, Shanklin, Isle of Wight, PO37 7LU, and its catalogue is out now.

Goodman's PDL has just released details of its third set of ***Premier Collection*** **disks. Costing £7.95 (or £6.95 to subscribers), the three disk set features 17 programs, including** ***Jetpac*** **and five other games on disk one, EZ** ***Money, Route Finder*** **and** ***Lottery Companion*** **on disk two, and** ***HTML Browser*** **and** ***Ghostlink*** **on disk three. The set comes with an instruction sheet. Goodman's can be contacted on ☎ 01782 335650.**

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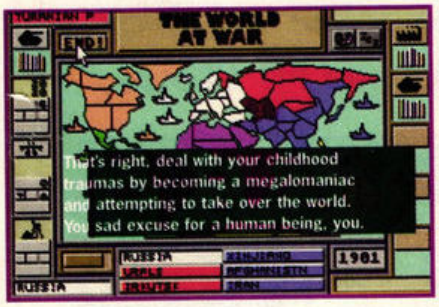
The World at War

LAPD, Disk L98 (£3.00)
All Ataris, 1MByte required

The World At War is an updated version of that classic board game, *Risk*. The aim of the game is simple – conquer the world by wiping out the competing nations.



The World At War scores over *Risk* because it makes the playing area much bigger by splitting the world into even smaller chunks (including several ocean squares). Once you've grasped the basics on the tutorial level, you can play the standard and advanced levels. Both introduce extra elements to the gameplay and take *The World At War* far beyond the confines of *Risk*.

These extras include greater control of your empire's resources, making it possible to build factories to produce supplies, which are then converted into more armies, roads (to transport your armies between neighbouring territories) and even more factories. Advanced level introduces oil – pipelines can be built to transport it between different territories, making it possible to establish quite an infrastructure.

Once you've defeated the computer, you can create your own scenarios by altering the resources and their locations, and even the map you play on. Thankfully, the README.PRG file provides a comprehensive tour of the program.

Our major criticism is that the battles themselves are won simply by ensuring you have more troops than the defending territory. Surely an element of chance, as found in *Risk*, could have played a part (after all, the might of the US army failed to defeat the Vietnamese). It would certainly add a little uncertainty to the proceedings.

The World At War makes some welcome additions to the *Risk* genre, although the actual outcome of battles is a little disappointing. If you're a warmonger extraordinaire with an eye for detail, this is one game you'll enjoy immensely.

STF RATING: 77%

Premium Mah Jongg

16/32 PDL, Disk Falcon 32
(ST version available)
All Ataris, most resolutions
(including monochrome)

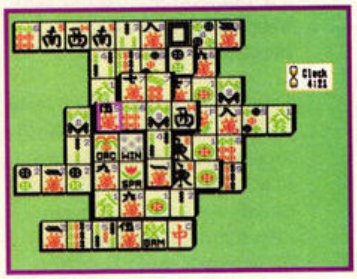
Mah Jongg is that ancient oriental puzzle game that starts off as a good cure for insomnia. Play it for a few hours and you realise you're hooked. Play it some more and you start to go mad. And then stop playing it. Except you can't. You're only removing tiles from a board, but it's maddeningly addictive.

In *Mah Jongg* you clear the tiles by matching accessible pairs. If you're lucky you can clear all the tiles within the time limit. It's also possible to run into dead ends, which either end the game prematurely, or force you to undo your last few moves.

Premium Mah Jongg adds some new twists to the game. First, you can choose between solitaire and tournament games – the latter is more challenging, because there is a time limit. It also has more longevity than other versions, because you can set it up a number of ways to challenge yourself.

Some people like *Mah Jongg*, some people don't. We love it.

STF RATING: 78%



On the Falcon, *Premium Mah Jongg* is a colourful affair. However, it can still be difficult to work out where all the tiles are – and to clear them off.

Time Machine

LAPD, Disk L114 (£3)
All STs, colour monitor required

Time Machine is the latest in the long line of adventure games written by the granddaddy of the genre, STAC.

You've just invented a time machine, but before you get a chance to win last week's lottery, a future version of yourself appears to warn you that an evil alien plans to use your machine.

Of course, you could just destroy the time machine now, thereby solving the problems of the future... but then you wouldn't be able to win the lottery, so needs must and all that.

Unfortunately, *Time Machine* has some of the annoying features often associated with STAC. For example, you can't 'Get all' when confronted with more than one object, and trying to examine the only key in a particular location elicits the response, 'Please enter the full title'. Apart from revealing that there is more than one key in the game, it's poor for the program to be unable to accept shortcuts.

These criticisms aside, the game itself is quite straightforward to get into, and the use of three different time zones adds a bit of depth. Overall, it's quite an absorbing adventure game.

STF RATING: 71%

Take time to explore *Time Machine*. If you think it looks a little ordinary on the surface, you'd better remember that appearances can be deceptive...

UPDATES

ASTEROIDIA
LAPD, Disk G398
1MByte STE version, colour monitor and joystick required

Apart from a different soundtrack (and the fact it squeezes on to one disk), *Asteroidia* for the STE is, unbelievably, identical to the Falcon version. What can we do apart from re-iterate how great it is? Oh yeah, get addicted to it all over again. Whoops. The Falcon version scored 86% in issue 72.

STF RATING: 86%

PD ACTION ROUND-UP

Can't sleep for not knowing when we reviewed a PD game? Fret no more, good sir, for here's the definitive guide to all the games that were reviewed in the past few issues of *ST FORMAT*.

GAME	PD LIBRARY	ISSUE	RATING
Bombzai	Computer Dungeon	73	90%
Asteroidia	LAPD	72	86%
Aliens	STellar PD	70	85%
Datachess 2	Floppyshop	70	85%
Square Off	Computer Dungeon	73	84%
Stone Cold Sober	Floppyshop	72	81%
Kev's World	Floppyshop	73	76%
Pothole 2	Chaos PD	70	75%
Falctris	Ad.Lib	71	71%
Seawolf	Wonder Disk 73	73	66%
Revival	Power PD	71	59%
Ultimate Arena	Riverdene PDL	72	58%
Armoured Operation	Power PD	72	53%
International Manager	LAPD	70	49%
Quick Flip	LAPD	71	40%
Crazy Letters	LAPD	70	35%
Mad	Chaos PD	70	20%

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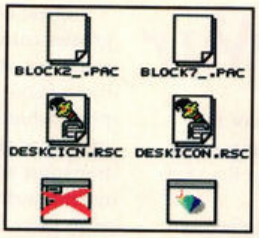
PD Choice



Equipped only with a blue police box, Nick Peers singlehandedly takes on PD Choice.

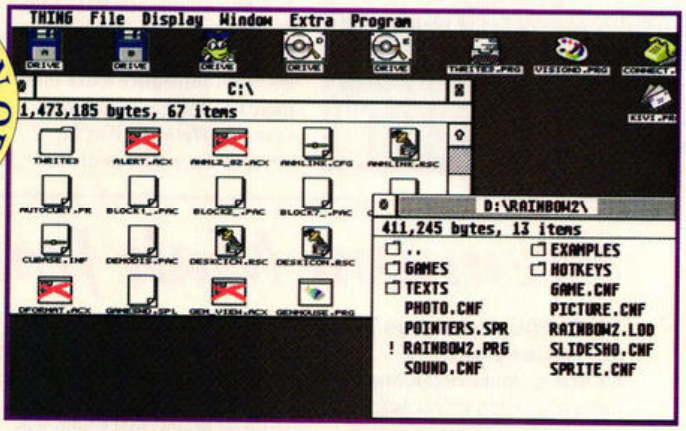
Thing 0.54e

HENSA software archives, stored in micros/atari/tos/p/p119
All Ataris, not TOS 1.0 and 1.2 compatible (except with *MagiC*), hard drive recommended

Thing is the latest thing *(Groan – Karen)* in replacement desktops. Anyone who has used *Ease* (*STF* 69, 97%) will immediately see which program inspired it. *Thing* doesn't quite match up to *Ease*, but then it only costs £6 to register, and at version 0.54, it obviously has quite some way to go in development.

Thing provides a more attractive desktop (especially on the Falcon) with the ability to assign different icons to programs or data files, plus features not found in the standard (pre-TOS 2.06) desktop. These include the ability to use wildcards to mask the contents of windows – useful if you're searching for particular files. It also offers a number of useful window functions, enabling you to cycle through all open windows, duplicate the current window, or even close the lot with one keypress.

Thing has quite a few powerful extras, too. Like *Ease*, it enables you to save space on your desktop by assigning programs to the Program menu. Other programs can be called by double-clicking on associated data files (so *LHarc 3.10* could be called each time you double-click on an LZH file), or assigned to function keys. Many of *Thing's* functions are available via keyboard shortcuts, cutting down your mouse mileage and speeding everything up quite considerably.



Thing supports colour icons in Falcon 16- or 256-colour mode. You can also alter the colour of the backdrop and fonts.

Thing runs in all resolutions except low. However, you can't change resolutions from within the program unless you're using it with a multi-tasking application.

Surprisingly, *Thing* doesn't have a search function either – most replacement desktops help you track down files. You need to assign an external program, such as *Finder 2.0* from Cover Disk 72, if you're forever losing your documents.

Overall, *Thing* is the best shareware desktop available for the Atari. While it may not quite match up to *Ease*, it more than holds its own among its contemporaries and, at just £6 is an inexpensive means of improving the quality of your computing life.

***STF* RATING: 86%**

UPDATES UPDATES UPDATES

You've seen it before, now see it again on our quick tour of the updated programs that have hit BBSs, the Net and PD libraries over the past month:

Route Finder 2.1
HENSA (q/q093)
All Ataris, 1MByte required

***Route Finder*, the program designed to take the hassle out of planning journeys around the British mainland, has been updated again. This means that the version previously restricted to shareware users has been placed in the public domain, complete with the 15-second delay and 200-mile limit that categorises unregistered copies.**

Version 2.1 adds some welcome detail to the graphical interface introduced in version 2. You can zoom in and out of the map easily, and the coastline is now marked. You can also insert your own roads and place names – a must as the program concentrates on the more major routes and towns. Route Finder is well worth a look, especially if you want to compare the quickest route with the shortest.

***STF* RATING: 79%**

Route Finder is invaluable if you want to work out how to get to all those Birmingham City away games.

Freedom 1.14
HENSA (p/p170)
All Ataris, 1MByte, hard drive recommended

Freedom 1.14 is an updated version of the first non-modal (multi-tasking) file selector for the Atari. This new version fixes several bugs, has a more

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Mini Pics 2

LAPD, Disk A99
All Ataris (Falcon in ST resolutions), 1MByte recommended

Mini Pics 2 is an update of a licenceware program that scored 72% in issue 52. It enables you to preview the pictures on a disk or hard drive partition. After scanning through the selected drive and showing each picture separately, it creates a mini image of each, enabling you to view up to 128 of them at once.

The new version now enables you to view images in any ST resolution – it automatically converts high resolution pictures for low resolution viewing, and vice versa (you can also view a mixture of low and medium resolution pictures in their correct resolutions). It also enables you to produce slideshows.

There are still some niggling problems. For example, it cannot distinguish between compressed *Degas* pictures (PC?) and PC Paintbrush pictures (PCX). If you scan a disk or drive with PCX files on it, and the program will fill its slots with these unviewable files. Also, although it supposedly supports hard drives, you cannot scan any drive above E.

With a bit more work, *Mini Pics* could be an invaluable guide for cataloguing your picture files. Greater support for the Falcon, and support for other file formats (such as TIFF, GIF and TGA), would be welcome additions.

STF RATING: 79%

Mini Pics 2 is a welcome update to this popular picture cataloguing utility. It still some annoying bugs, though.

FORMATS

***Mini Pics 2* supports the following formats, and can display them in whichever resolution you boot the program in: PI?, PC?, NEO, DOO, PIC, CA?, TN?, CL3, PAC, IMG and ART.**

WHERE DO I GET PD PROGRAMS?

HENSA is the main UK source of new software – ftp the latest releases from micros.hensa.ac.uk/micros/atari/.

Most PD libraries get hold of the software within a few weeks of HENSA, so by the time you read this, your favourite PD emporium should be able to supply the programs covered here. If it can't, try either LAPD (☎ 01773 761944) or Goodman PDL (☎ 01782 335650).

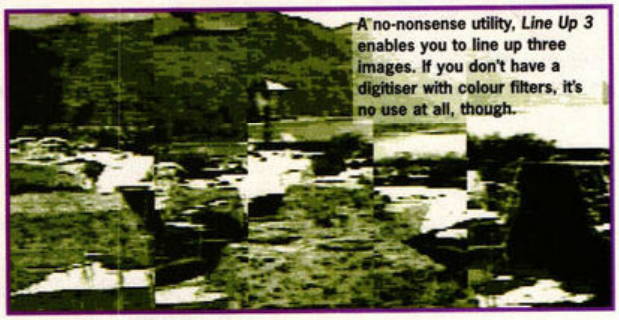
Line Up 3

Floppyshop, Disk FWG10c
All STs, not TOS 2.06 or Falcon compatible

If you've ever attempted to digitise colour images using colour filters, you'll be aware that you end up with three versions of the same image: one green, one red, and one blue. To merge them you need to be able to line them up correctly, which can be a bind.

This program does its job admirably – you line up the three separate images two at a time, using the cursor keys. An ingenious method of overlapping the two pictures in parts lets you see what's happening, and you can even zoom in on the picture. Nevertheless, *Line Up 3* is very basic – you can only line up the images vertically, and there's no provision for viewing the final result.

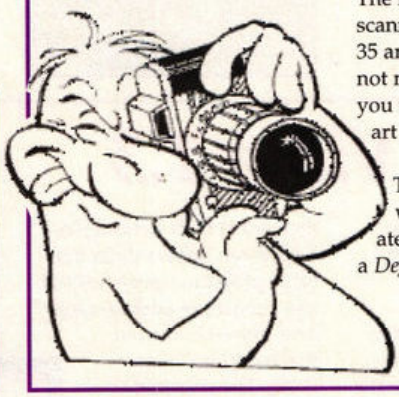
STF RATING: 56%



A no-nonsense utility, *Line Up 3* enables you to line up three images. If you don't have a digitiser with colour filters, it's no use at all, though.

Fun Art

Power PD, disk 1403
All Ataris, colour monitor required



More images from the Bionic Smurf – 35 more, in fact.

Another disk packed with cartoon-type clip-art from the Bionic Smurf (see *STF* 70). The images are nicely scanned, but once again all 35 are in *Degas* PC1 format – not much use for those of you requiring high resolution art for fine DTP work.

Also on the disk is the Talking Message Creator, which enables you to create messages to accompany a *Degas* or *Neochrome* picture.

STF RATING: 67%

UPDATES UPDATES UPDATES

attractive look and supports *Kobold*. If you use your Atari for multi-tasking you need this – up to eight file selectors can be open at once, and you can drag and drop files between them all. Selectric-like controls make it easy to get accustomed to. Freedom 1.1 scored 90% in issue 71.

STF RATING: 90%

KIVI 1.41
HENSA (p/p100)

A mere two months after its appearance on Cover Disk 72, *KIVI* has been updated. This offline QWK reader now boasts FidoNet mail support and a host of other additions, including a 'find again' option which makes searching messages for that elusive keyword so much easier. *KIVI* may well have been updated again by the time you read this, so it's obviously well worth registering.

STF RATING: 85%

OCR 1.4
HENSA (n/n122)

Optical Character Recognition (OCR) is the process by which image files are scanned and any text within them is translated. The results can be saved as a text file, making it at theoretically possible to scan in whole books or letters and convert them into editable files. The program is therefore really only of use if you own a scanner.

In practice, *OCR* is hard work – you'll need to set up separate recognition databases for each new font you come across. The program is quite slow – put aside six months or so if you intend to convert a novel. However, if you're willing to put in the initial effort, *OCR* will take the strain while you sit back and get on with something else.

STF RATING: 75%

Profile 2.14
HENSA (p/p143)
All Ataris

***Profile* is a system analyser which gives you reams and reams of information about your machine, including details of the TOS, drives and so on. It's mainly useful for tracing compatibility problems between software and hardware, or perhaps for tracing faults. If you're interested in the workings of your machine *Profile* is for you.**

STF RATING: 75%

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ESSCode 6.4

Hensa, stored in micros/atari/tos/n/n172
All Ataris

ESSCode is indispensable for those of you wishing to send and receive files through modems or networks that don't support the transfer of binary data. *ESSCode* enables you to convert data in four ways (including uuencode), making it compatible with several different standards, and even different platforms (*ESSCode* is also available on PCs, for example).

ESSCode scores over other packages in that it is not just incredibly easy to use, but is also quick and reliable. Even better, it doesn't leave you wondering what is going on.

STF RATING: 83%

MOD Disk 15

STellar PD
All STs, 1MByte required

A very nice animated sequence of raytraced globes swirling over a chaotic backdrop of stars introduces the latest in a long line of MOD compilations from the Golden Dawn. Once you've had enough of this, it's back to the desktop.

The 17 MOD tunes are all dance, and reasonable examples of dance at that. However, you either love dance or you hate it. We continue to hate it (except for the excellent rendition of the *Ghostbusters* theme). We probably always will.

STF RATING: 51%

Doctor Who

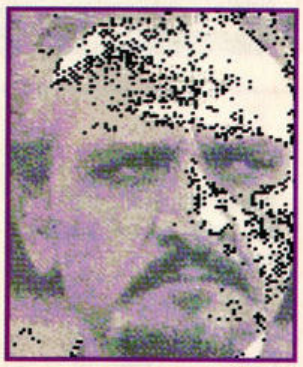
Locutus PDL, Disks LFC3
All Ataris (introduction not STE or Falcon compatible)

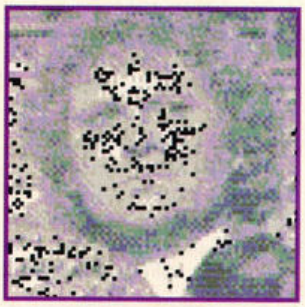
This disk is packed with a wealth of *Doctor Who* clip-art, scanned images and text files. It's aimed at all those ardent fans awaiting the Timelord's return from the temporal rift (otherwise known as the BBC).

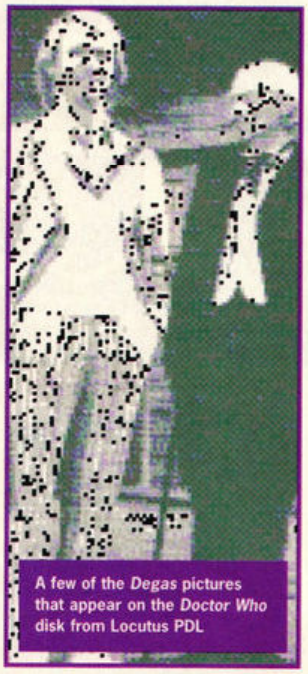
The text files provide some interesting insights into the Doctor's past, but the clip-art is rather poorly drawn, aside from a few scanned images of Daleks. There are only four *Degas* PI1 pictures.

Also included is an archived demo with a passable rendition of the theme tune, and a poor 'animated' sequence showing the TARDIS dematerialising. And that's it, apart from the excellent sample of the TARDIS as it enters the space-time continuum.

STF RATINGS: 55%







A few of the *Degas* pictures that appear on the *Doctor Who* disk from Locutus PDL

XIMG View 1.3

HENSA Software archives, stored in micros/atari/tos/
All Ataris, all resolutions

XIMG is designed exclusively for viewing large IMG files – you just load them and use the mouse to shift around the document. It enables you to view pictures at their natural size before you import them into other programs (such as desktop publishing packages, or even *HyperGEM* from this month's Cover Disk). The scrolling is smooth and quick, but this option is already available in *PicSwitch 1.01*.

Also included is a snapshot utility which enables you to take screen grabs in IMG format. Although you can rubberband the part of the screen required, you cannot see the screen while you are selecting the area to be saved. You are also unable to give your snapshots their own filenames. All-in-all a disappointing package, even though it's freeware.

STF RATING: 41%

Massive IMG screens can now be viewed with *XIMG View*. Erm, except you can also do that within *PicSwitch*, from Cover Disk 68.

PD CHOICE ROUND-UP

Our PD Choice round-up section has become quite unwieldy, so we've limited it to those titles which scored 80% or more in the last four issues.

TITLE	PD LIBRARY	TYPE	ISSUE	RATING
ST-Guide 1.3	HENSA	Utility	73	95%
Speed of Light 3.7b	Cover Disk 72	Art	71	93%
GEMBench 4.03	HENSA	Utility	72	93%
Warp Issue One	Keefy's PD	Diskmag	70	92%
Warp Issue Two	Keefy's PD	Diskmag	73	92%
NovaDisk 6	James Bird	Diskmag	71	92%
MultiCAD	Floppyshop	Art	72	91%
Autowaschen Verboten	Floppyshop	Falcon	70	90%
Freedom 1.11	HENSA	Utility	71	90%
Power 26	Power PD	Diskmag	72	89%
Toys on Disk	GL-PD	Misc	71	86%
Grafix PD Demo	Silly Software	Art	71	84%
Oasis	Demon	Utility	73	84%
525 v2.1	HENSA	Music	73	84%
Ghostlink	Riverdene	Utility	71	80%

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ELITE 2
14.99

CHAMP MGR COLL
14.99

CHAOS S/BACK
2.49

CORRUPTION
2.49

GRAHAM GOOCH
20.99

SHADOWGATE
3.99

1 MB = requires at least 1 mb RAM
D/S = requires double sided disk drive

ATARI ST

ADI ENGLISH (14-15) ... 3.99
CHAMP MANAGER COLL (93/94 + UPDATE) D/S (1 MB) ... **14.99**
CHAMP MANAGER 94/95 (SEASON DATA DISK) D/S (1 MB) 12.99
CHAOS STRIKES BACK ... 2.49
CORRUPTION (M/SCROLLS) ... 2.49
ELITE 2 (FRONTIER) D/S (1 MB) 14.99
FINAL COMMAND ... 2.99
GRAHAM GOOCH WORLD CLASS CRICKET D/S ... 20.99
PICK 'N' PILE ... 2.49
SHADOWGATE ... 3.99

ATARI LYNX

APB ... 15.99
BASKETBRAWL ... 9.99
BILL AND TED'S EXCELLENT ADVENTURE ... 9.99
CALIFORNIA GAMES ... 16.99
CASINO ... 15.99
CHECKERED FLAG ... 16.99
CHIP'S CHALLENGE ... 9.99
CRYSTAL MINES 2 ... 9.99
DESERT STRIKE ... 25.99
DINO OLYMPICS ... 15.99
DIRTY LARRY - RENEGADE COP ... 15.99
DOUBLE DRAGON ... 25.99
ELECTRO COP ... 15.99
GATES OF ZENDECON ... 15.99
HOCKEY ... 12.49
HYDRA ... 9.99
ISHIDO ... 6.99
KUNG FOOD ... 10.99
LEMMINGS ... 24.99
MS PACMAN ... 15.99
NFL FOOTBALL ... 15.99
NINJA GAIDEN ... 15.99
PAPERBOY ... 15.99
PINBALL JAM ... 14.99
PITFIGHTER ... 23.99
QIX ... 10.99
RAMPAGE ... 12.99
RAMPARTS ... 23.99
ROBOSQUASH ... 16.99
ROBOTRON 2084 ... 12.99
S.T.U.N. RUNNER ... 9.99
SHADOW OF THE BEAST ... 9.99
SHANGHAI ... 14.99
SLIMEWORLD ... 12.49
SUPERSQUEEK ... 9.99
SWITCHBLADE 2 ... 11.99
T-TRIS ... 24.99
TOKI ... 23.99
TOURNAMENT CYBERBALL ... 12.99
TURBO SUB ... 10.99
ULTIMATE CHESS CHALLENGE 16.99
VIKING CHILD ... 15.99
WARBIRDS ... 25.99
WORLD CLASS SOCCER ... 12.49
XENOPHOBE ... 12.49
XYBOTS ... 9.99

ATARI JAGUAR

AIR CAR WARS ... 45.99
ALIEN VS PREDATOR ... 47.99
CANNON FODDER ... 35.99
CHEQUERED FLAG ... 45.99
DEMOLITION MAN ... 37.99
DOOM ... 45.99
DOUBLE DRAGON 5 ... 46.49
DRAGON ... 35.99
EVOLUTION DINO DUDES ... 34.99
HOVERSTRIKE ... 46.99
INTERNATIONAL SENSIBLE SOCCER ... 39.99
IRON SOLDIER ... 42.99
KASUMI NINJA (RECOMMENDED FOR AGES 17+) ... 43.99
PINBALL FANTASIES ... 41.99
POWERDRIVE RALLY ... 38.99
RISE OF THE ROBOTS ... 45.99
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Put it on paper

Impress your friends and colleagues with stylish flyers, newsletters and reports – Peter Crush's 'tips and tricks' guide to printer technology covers everything from choosing a printer to using a print bureau. Plus: how to get colour printouts from your mono printer.

The 'paperless office' was a great concept, but it hasn't caught on – everybody still likes seeing things in black and white. If you're into word processing, DTP, graphics, music, programming – just about anything, in fact – you need a printer.

But what sort of printer is best? And if you already have a printer, how can you get the best out of it? We've taken a long hard look at printing from your ST, and this feature goes into everything you need to know about choosing and using a modern printer.

Choices, choices

If you don't have a printer, or would like to upgrade the one you have, work your way through our checklist to make the right choice.

It's the things you do with your ST that determine which type of printer you should buy. It makes sense to sort out your requirements before you make a purchase, so put your wallet away and answer our four questions.

> **Work your way through our checklist to make the right choice**

1 How much can you afford to spend? Money (or the lack of it) is often the real deciding factor when you buy anything. Consider the running costs as well as the initial outlay.

If you're well and truly strapped for cash, the cheapest kind of printer is the trusty old dot matrix. You can pick one up brand new for less than £100, and the latest models are worth considering for certain applications.

If you can stretch your budget a bit further, the smallest inkjet printers cost well under £200, and they're very good. A more capable inkjet will cost you £200–300, but you can pay anything up to £450 for an upmarket colour inkjet printer.

The cheapest laser printers cost £400–500. If you want lots of built-in fonts or faster printing, you're looking at £600-700, and you can pay over £1,000 for a high-spec laser.

2 How heavy will your printer usage be, and how professional do you want the results to look? If you're going to be printing important business documents, you might want to spend a little more than you would for just the odd letter or school project.

The occasional user could make do with a cheap and cheerful dot matrix printer. However, if you have lots of things to print, they are just too darn noisy. They also fall

TOP TIPS

Whatever printer you have, here are ten ways of coaxing the maximum performance from it.

1 Always read the printer manual. There are often words of wisdom hidden away, and you may discover features you didn't know your printer had.

2 Scan the magazine adverts for printer consumables. It's often better to buy, say, three printer ribbons at once, rather than just one. The postage for a bulk shipment will usually be no more.

3 Despite what the adverts claim, re-inking printer ribbons is a pretty messy business. The money spent on the kits would be better put towards a cheap bulk pack of brand new ribbons.

4 Contrary to what printer manufacturers say, we can't see anything wrong with using inkjet refills. Refill kits are much cheaper than buying expensive replacement cartridges, and more environment-friendly, too.

5 Similarly, laser printer cartridges can be refilled with toner. You can save quite a bit, but only use a refilling service that offers a guarantee.

6 Always use the 'draft' setting for day-to-day printing, because it only uses half the amount of ribbon, ink or toner compared to the standard setting. When you need best-quality output, treat yourself to Letter Quality printing.

7 On some printers you can adjust the distance between the print head and the paper to obtain optimum quality. Depending on the type of paper or envelopes in use, this can make a significant difference to your printouts.

8 Most machines have DIP switches that enable you to adjust the number of lines printed per page. If you increase the usual six lines per inch to, say, eight, you can cram in more text and save quite a lot of paper.

9 Likewise, you can often use the DIP switches to set the particular font used by the printer. This can save paper and improve the appearance of your output.

10 If you've only got a mono printer, there's an easy way to put some colour into your documents – use tinted paper! Black ink on white paper looks very boring, so print on to coloured A4 for instant eye appeal.

THE WORLD'S ONLY SELLING ST MAGAZINE

ST FORMAT

Star's LC-10 dot matrix printer is popular and robust.

The printouts (left) were produced on a Citizen 120D+ dot matrix printer.

down on output quality.

If you think your printer will be used more than occasionally, an inkjet printer would be a much better choice. They're quieter and give better-looking results. Graphics and logos come out well, and many are capable of printing in colour, too.

If you're looking for a business printer, go for a laser if you possibly can. They are quicker, especially for producing multiple copies of price lists and so on. All your documents will look professional, and the latest machines are capable of near-typeset quality.

A word of warning: printers are very handy things. When people find out you've got one, you'll get all sorts of requests – "Could you just print this 100-page school project for me?" – and you'll find you're using the printer more than you envisaged.

3 What sort of documents will you be printing? By now you probably have a rough idea what sort of printer you're in the market for. The next thing to consider is the type of thing you intend to print. Different applications require different printers – there's no one best choice.

Text-only word processors and programming

A dot matrix or inkjet printer will produce hard copy cheaply and without fuss. Unless you're dealing with huge documents, a laser printer would really be wasted on this type of output, which will mainly be looked at just by you.

You'll find you're using the printer more than you envisaged

Graphical word processors, music software

You'll need high resolution output to make the best use of the many excellent graphical word processors. Likewise, musical notation and scores won't look good unless you use an inkjet or laser.

Art and CAD programs

You could use the better 24-pin dot matrix printers for these programs, but you'd be much better off with an inkjet or laser printer.

Check which printer drivers your programs have. They probably favour Hewlett Packard's 300dpi DeskJet/LaserJet printers, so check that your proposed machine has the appropriate emulations.

DTP and high-end graphics

You've guessed it, you need a laser printer. Actually, you could make do with a good inkjet, especially if you want to produce colour pages, but to get sharp text and graphics for newsletters and booklets and the like, a laser is lovely. Alternatively, you can use a print bureau (see page 52).

THE WORLD'S ONLY SELLING ST MAGAZINE

ST FORMAT

The inkjet printouts, above, were produced on a Hewlett Packard DeskJet 550C.

The Canon BJ-200, right, has a built-in sheetfeeder and produces high-quality printouts quickly.

THE WORLD'S ONLY SELL

ST FORMAT

Hewlett Packard's LaserJets are deservedly popular. The 4P is aimed at business users.

The example printouts (above) were produced on a Laserjet 4.

4 What specialist features do you require? Do you need colour? Even if you don't want colour printing right now, you might in the future. Find out if the printer you want can be upgraded to colour, or get a model that prints in both black and white and colour.

So far we've assumed you want to print on A4 paper. Most of the machines are geared to do just that, but you can get wide carriage versions of most models that output on to A3 paper. These obviously cost a bit more, but are better for the more 'pro' applications. They can usually print on to smaller A4 paper, too.

Find out how long it takes to print pages out. Once your ST has composed and sent the data, the quickest lasers can produce 12 copies of the page per minute. A dot matrix or inkjet can take ten minutes or more to print a DTP page, and the next copy will take just as long, because the data has to sent again for each copy. Cheaper lasers print four or six pages per minute (ppm).

PRINTER PITFALLS

Buyer beware: before you hand over the readies, make sure you haven't made a serious error. Here are three things to avoid like the plague:

GDI printers: GDI (Graphical Display Interface) printers only work with PCs. The PC has to be running *Windows*, (a program which mimics the GEM user interface on your ST) for the GDI printer to operate, so ST owners should steer clear.

If the printer also works under DOS (the older PC operating system) it should also work with your ST. If in any doubt, get a written assurance from the supplier that it will refund your money in the event of a problem.

Unusual makes: You know where you are with the big, well-known manufacturers, whereas an obscure make might be more trouble than it's worth. Some printers, such as early Amstrad printers and most Commodore machines, will only work with particular non-ST systems.

Buying on the cheap: Don't buy second-hand unless you know the seller or the history of the machine in question. If there's a genuine reason for the sale you might pick up a bargain, but be wary. If the printer is so good, why is it for sale?

It's a buyer's market, so drive a hard bargain, and see the printer in action with an ST. Remember, you have no legal comeback with private sales.

PRINTER UTILITIES

Here are two clever programs that help you get more from your printer. One's a bit expensive, while the other is very cheap, but they're both pretty good.

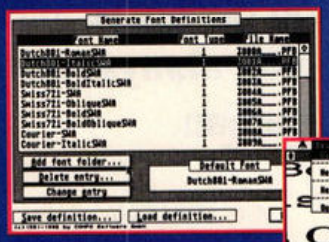
COMPOSCRIPT

£229, Compo Software Ltd, ☎ 01487 773582
1MByte STs, hard disk required

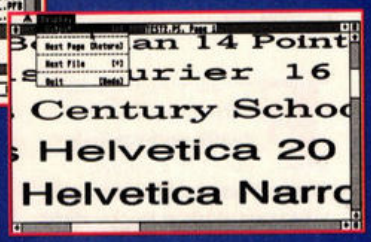
CompoScript (*STF* 38, 80%) enables you to print PostScript (PS) files on non-PS printers. It can also display a PS file to screen, and convert it into a graphics file which can be used with programs that do not support PS. The authors even claim that it can process PS files from other computer systems (IBM, Mac and Amiga).

To use *CompoScript* you need at least 1MByte of RAM and a hard disk, plus a printer that supports graphics. The program reads your PS file, and re-interprets it, substituting good-quality Bitstream clones of the classic Adobe fonts as required. A bitmapped image is created, and then output to your own humble non-PS printer.

It all seems very straightforward, but the high price puts *CompoScript* slightly out of reach of the average punter.



The set of fonts can be displayed, and you can add other suitable Type 1 PostScript fonts from a variety of sources.



The PostScript file can be previewed on screen before printing – handy if you want to look at a file that was created on another system.

MULTIPRINT

£9.95, FaST Club, 0115 9455250
All STs

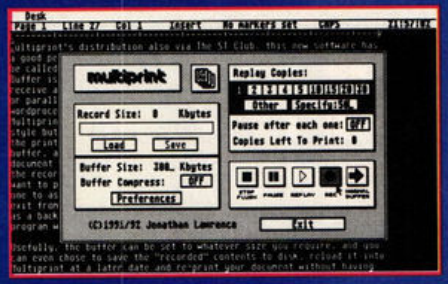
Whereas text output is fairly fast, everything slows to snail's pace as soon as you incorporate graphics. It can take anything up to twenty minutes to print out just one DTP page from *PageStream* or *Timeworks* on inkjet or dot matrix printers.

Consequently, very few ST owners even consider using a low-spec printer to produce multiple copies of documents. However, it can be done – a utility called *Multiprint* (*STF* 39, 90%) enables you to turn out as many copies as you want, at faster speeds than normal.

Multiprint operates as a Desk Accessory, and can thus be called up from within any GEM software you are running. A special buffer is set up, and this area in RAM receives and stores your printer output.

Suppose you are using your wordprocessor, and you're ready to print out a document. Call up *Multiprint*, click on Record, then print as normal. While the printer is receiving the output from the ST, so is the *Multiprint* buffer, and you end up with an extra 'copy' there. Once the document has been printed, call up *Multiprint* again, and click on the Stop button. Select how many extra copies you want, click on Replay, and exit. The extra copies are produced as a background task, enabling you to keep working while your printer churns out your document.

You can even save the 'recorded' data to disk, reload the file into *Multiprint* at a later date and re-print your document – without having to load the program that originally produced it. In addition, you can set *Multiprint* to compress the saved buffer contents, which will reduce the file size by up to 40 per cent if the document contains graphics. All-in-all, Multiprint makes producing multiple copies painless.



If you aren't using the Record function to intercept data, you can activate the Normal mode, which speeds up printing by smoothing the flow of information.

Off to the printers

If you can only afford a modest printer, but want top quality results, don't despair. You can always use a professional print bureau.

For really high quality output, do what media professionals do – use a bureau. These specialised businesses take your work in floppy disk form and print your documents on bromide or film. You give the result to a printing firm, which can then reproduce your poster, newsletter or novel in quantity.

Many of the flashy adverts, brochures, books and magazines you see every day have been produced this way.

Even though the publishing world generally uses Apple Macintoshes or PC computers, your ST is capable of producing equally good results. All you need is the right programs and an ST-friendly bureau. We've located three firms who know all about dealing with ST output, and once you know the ins and outs, you may be able to find a local bureau who can help.

All you need is the right programs and an ST-friendly print bureau

So how do bureaux work? Instead of using conventional machines like lasers or inkjets, bureaux use imagesetters. These machines are big, hideously expensive and totally unsuitable for the home user, so don't even think about getting one yourself.

Imagesetters 'print' by firing a laser beam directly on to the surface of the media, which is then developed using a photographic process. The

GLORIOUS TECHNICOLOUR

Even if you only have a monochrome (black ink) printer, there are cunning ways to get full colour output from it.

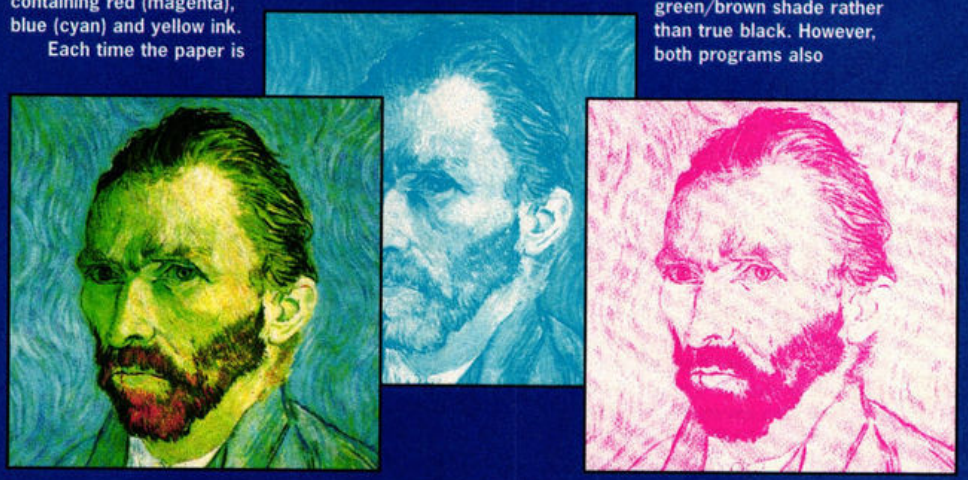
There are two programs you can use: *HPChrome* for mono DeskJets (or *BJChrome* for Bubblejet printers) and *Imagecopy Colour*.

Both enable you to produce colour output by printing multiple passes on the same sheet of paper using different colour inks. This involves using empty DeskJet or Bubblejet cartridges which have been cleaned out and refilled with coloured ink. To produce a full colour picture you need three cartridges, containing red (magenta), blue (cyan) and yellow ink.

Each time the paper is put through the printer you have to change cartridge (both programs prompt you), and the overprinting of the separate colours results in a wide range of hues.

Black is produced by printing all three colours together, resulting in a very dark green/brown shade rather than true black. However, both programs also

Imagecopy enables colour separations to be output on inkjet, using three or four single-colour ink cartridges. You can do the same thing on a dot matrix printer, but repeatedly changing ribbons gets a bit fiddly.



It's amazing what you can do with your ST, the right software and the services of a Bureau! Just look at the professional standard of these ST-originated publications.

ST-FRIENDLY BUREAUX

Here are three bureaux that won't say, "S what?" when you mention you computer. It's always a good idea to discuss your requirements before you send files for output, so give them a call for price lists, brochures and advice.

The CY Services Imagesetting Bureau
52 Beech Ave, New Blasford, Nottingham NG7 7LQ
Tel: 0115 9605377
Fax: 0115 9623715
Modem: 0115 9692782

The man to speak to here is David Hughes, who uses a Linotronic 300 imagesetter with a DMC interface, working from Atari computers. He can handle any files produced from *Calamus*, *Calamus SL* and *DA's Layout*, and output on to A4 or A3 bromide or film. You can send your files via modem (by prior arrangement), or on floppy disks or SyQuest cartridges. CY Services will also scan photos for you, so you can include pictures in your documents.

AL Publishing Services
8 Roslin Square, Roslin Road, London W3 8DH
Tel: 0181 9920636
Fax: 0181 9932718
Modem: 0181 9934133.
This West London bureau opens for business at 6.30am, so it must be busy! Like CY Services, it has a Linotronic 300 imagesetter, but AL Publishing is mainly geared up for PostScript work and won't be able to help you with *Calamus* files.

***PageStream* files are output on to A3 or A4 bromide or film. Angela Jones or Tony Baker will be pleased to chat with you, and they have a printing operation too, should you need mass production. AL Publishing will also scan photographs, and even sells PostScript fonts.**

Sumner Type
The Desktop Centre, 17-19 Blackwater Street, London, SE22 8RS
Tel: 0181 6933364
Fax: 0181 6936936
Modem: 0181 2993933

Clare Cowen runs Sumner Type, which is under the same roof as ST specialists System Solutions. She uses Ataris linked to a DTC 3000 imagesetter, and handles all non-PostScript work, including *First Word Plus*, *Fleet Street Publisher*, *Papyrus*, *Calamus*, *DA's Layout* and *DA's Vector* documents.

In common with the other two bureaux, output can be on A4 and A3 bromide or film, and you can send your files on disk or via modem. Summer Type handles work for a wide variety of ST-using customers – everything from *The Miner* to System Solution's glossy colour catalogue.

result is very smooth, detailed output at up to 2,540dpi, on either bromide paper or film.

Bromide is a high quality art paper with a very white, shiny surface. Bromides are ideal for old-fashioned cutting and pasting techniques, such as stripping logos into other work. Film is a bit like the acetate that is used for overhead projector transparencies–it's smooth, transparent and fairly stiff. Film is the medium of choice for prestige printing jobs, and it's definitely better for colour separation work.

Both media support either 1,270 or 2,540dpi, so the deciding factor is usually your printing firm. If your printer works from bromide he has to make a PMT (Photo Mechanical Transfer) from it, in order to make a printing plate. If your output is on film, the printer can make a plate directly, saving time and money.

The result is very smooth, detailed output at up to 2,540 dots per inch

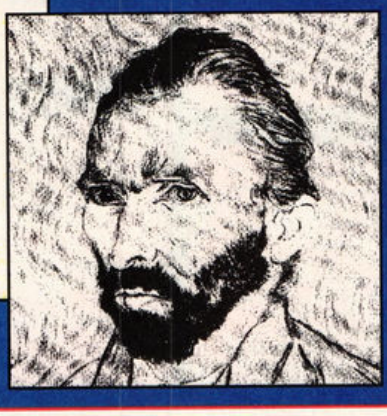
An A4 page at 1,270dpi on bromide will cost about £5, compared to £7.50 on film. Most bureaux offer you a discount on big jobs, and there will usually be a minimum charge, so don't send them just one page. Remember that VAT and postage will be extra.

To avoid wasting film or bromide, always find out exactly what your printer needs before giving the bureau the go-ahead. *stf*

www.stformat.com

enable you to make a final pass using a standard black cartridge if your picture contains large areas of dark or black sections.

HPChrome is a very accommodating program which runs on any ST from a humble 520 upwards, in all screen resolutions. *Imagecopy Colour* also runs on all basic STs, but version 3.5 needs at least 1MByte of RAM. *HPChrome* is shareware (contact any good PD library), while the FaST Club (☎ 0115 945 5250) can supply various versions of *Imagecopy*.



PS: POSTSCRIPT

PostScript is the publishing industry's favourite 'standard'. Most imagesetters and professional-standard laser printers use this page description language, which was developed by Adobe Corporation.

PostScript output devices include a chip that contains proprietary fonts in a mathematically defined format. Suppose, for example, that the page you've designed contains an 80pt Helvetica headline, with body copy in 12pt Roman-style text. When you print it to a PostScript device, the document just sends a message saying, "Print the following text in PostScript font number XX at 80pt, then print the remaining text in font number YY at 12pt." Because the font descriptions are mathematical, they can be scaled up easily. The position of the text on the page is also sent, and changes of style, font size and so can all be incorporated.

With PostScript you don't waste time transmitting loads of bit-mapped data – the fonts are already in the PostScript device, and they're of the highest quality. Unfortunately, not many ST programs can save documents in PostScript format. However, *PageStream* does, so you should be able to take a *PageStream* output file to any bureau in the world – assuming the bureau has the fonts you've used. Make sure you write the files to a DOS-compatible floppy disk.

It's a huge disappointment that neither *SpeedoGDOS* nor *NVDI 3* has printer drivers for PostScript devices. If they did, all the ST's *GDOS*-compatible software could be output beautifully by any bureau.

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M.123 C.I.A. WORLD FACTBOOK: Facts and figures on countries. (4 disks £6.00)
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C.7 VANTERM V4: Excellent multi-function comms program
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AUTHORS

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ST Answers

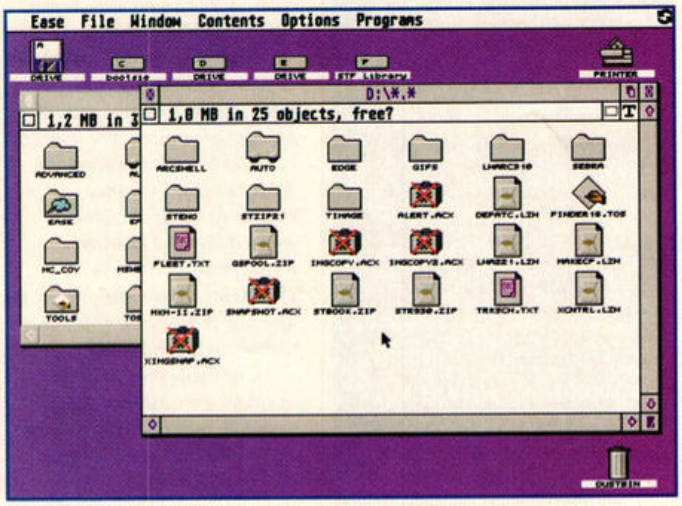
Clive Parker puts on his propeller, switches to ST emulation mode and opens up the ST Answers mail-bag. Er, it's a box, actually.

BAD ROM

Q Thanks for your advice in issue 69 about pressing the space bar during the boot sequence of TOS 2.06 to abort the memory and system check. It has saved me a lot of time.

A few months after TOS 2.06 was installed in my STFM, the error message "Warning: Bad ROM CRC in chip E" started to appear every time I booted up. The engineer at Atari Workshop (where the upgrade was fitted) told me that the best thing to do was to wait until something actually went wrong with my ST, because that would be easier track down than trying to trace what was wrong with Chip E.

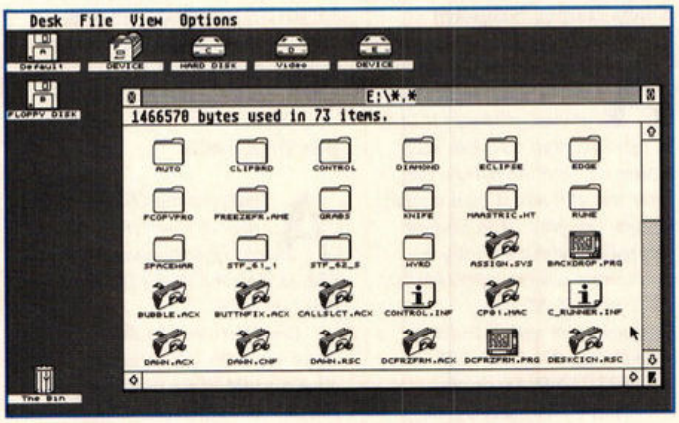
In the two to three years since, I've only ever had faults caused by software problems. However, the message still appears every time I boot up. Do you have any idea what the problem is with Chip E?
Nigel Garvey, Warwick



This is *Ease* running under *MagiCMac* on an Apple Macintosh. Sorry about that. You can't make your STE look like this unless you use a colour graphic card and a VGA monitor. It helps if you have lots of money too.

A Er, no. Not really. The CRC (cyclic redundancy check) is the way the system checks that the data in the ROMs is correct. The data on the ROM is a certain size, so the system checks that it is the right size, and compares the data on the chip with a checksum. If the two figures don't match, even by as little as one bit in size, an error message is generated.

As the engineer said, if your ST is working properly, it's probably safe to ignore the error message for the time being. On the other hand, if the TOS upgrade was still under guarantee when you started to get the error message, it should have been replaced by the supplier.



The famous TOS 2.06 in action – you can't install a better set of ROMs.

LIKE A FALCON

Q I have a 520STE and I want to upgrade it. Can I install TOS 4 from the Falcon030 into the STE? If I get a VGA monitor, will I get the same display as the Falcon? Also, can I add a Marpet XtraRAM +8, and does it come complete with 8MByte of RAM?
Paul Applebee, Dunstable

A You can't install TOS 4 from the Falcon030 into your STE – or any ST, for that matter. The Falcon is not an ST, it's a completely different machine which uses an advanced version of TOS and GEM.

If you use a VGA monitor with your ST, you'll still only get the standard low, medium and high resolution modes. To get higher resolutions, you have to install a colour graphics card offering at least 16-bit graphics. Contact System Solutions (☎ 01735 832212) and ask about

HARMLESS?

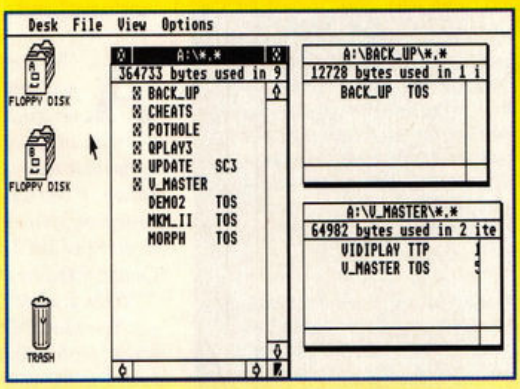
Is it possible to reverse the vertical mouse direction without a virus being present? Or have I got a harmless – so far – virus which is reset proof and can beat *Ultimate Virus Killer 6*? I have checked all my disks with *UVK* and they all check out okay.

Also, could you tell me whether it is safe to unplug the mouse and plug in a second joystick when the power is on?
Mark, Aylesbury

As far as I know, only the Ghost Virus reverses the mouse direction – and UVK detects this virus every time. If your disks check out okay, you may have a hardware problem. Borrow a mouse from a friend and see if this makes a difference.

And there's no such thing as a harmless virus, they all have the potential to erase information on floppy disks.

Swapping the mouse for a joystick when the power is on could potentially damage your ST, although I have never actually heard of anyone ever blowing up their ST this way. It's a good idea to have both joysticks plugged in when you boot up your game. If you have to boot a game from the desktop, use the keyboard [Alternate] key with the cursor keypad keys to load it.



The deadly Ghost Virus in action. Note how the cursor direction has been reversed.

QUICKIES

I have a 4MByte STFM and Hewlett Packard 500C inkjet printer, connected with a parallel cable. Unfortunately I can't get the printer to actually print anything, although it works perfectly in self-test mode.

What interface do I need to transfer my ST Basic programs to the printer?

M G Beech, Ramsgate

You don't need another interface to get the printer to work with your ST Basic programs, that's what the parallel lead is for. To print text on screen you use the PRINT command. To print text on paper you must use the LPRINT command. It's as simple as that. The printer manual has a full list of commands explaining how to print using colour.

Getting your printer to work with other software may be more of a problem. For printing graphic images, use Imagecopy Colour 3.5 *from the FaST Club (☎ 0115 945 5250). It was reviewed in* ST FORMAT *67 and costs £30. To print out from your word processor, you need to go to printer driver preferences and select the printer driver for the HP Deskjet 500C.*

I have a 520STE with a memory upgrade, but I'm not sure how much memory I have. All the SIMM slots are full, and two of the SIMMs have "Frontier STE 1Mb" printed on them. I have run a system information program and it says I have a 1040 STE. How much memory have I got?

Paul Morris, Walsall

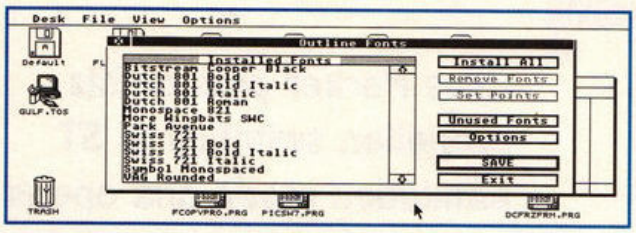
You've answered your own question, Paul. A 1040 STE is the 1MByte version of the machine, so you have a 1MByte STE.

I'm having a problem with the [Alternate][Help] keyboard shortcut to print the screen. I only seem to be able to print about 75 per cent of the available screen width. Do I need a wide-carriage printer to print the complete screen?

Mike Grabarz, Risborough

No, you don't need a wide-carriage printer. The problem lies with the piece of code in the ST ROM that dumps the screen to the printer. This routine is around ten years old and thinks that every printer in the world is a 9-pin Epson FX-80, so it uses the driver for that printer.

If you get Imagecopy Colour 3 *from the FaST Club (☎ 0115 945 5250), you can grab the screen image, store it on disk and print it out on a large range of mono and colour printers.*



SpeedoGDOS, which is now available on both the Falcon030 and the ST, gives you access to loads of lovely fonts, but you'll need a fair amount of RAM to use it.

its selection of graphics cards and monitors. Be warned, graphics cards for the ST are very expensive and tricky to install.

You can add an XtraRAM +8 to your STE if it has TOS 2.06 installed, and already contains 4MByte of memory. The upgrade is available with or without the 8MByte SIMM – it may be cheaper to source the SIMM yourself. Contact Marpet Developments on ☎ 01423 712600 for the current price of the upgrade; 8MByte SIMMs currently cost around £200.

One final point: all these upgrades are very expensive. It would be cheaper to buy a Falcon and a VGA monitor, and you'd still have your ST for software that's not compatible with the Falcon030.

DANSE MACABRE

Q I have replaced my old ST with a Falcon030, and have installed all my favourite customisation programs on the hard drive, including several in the Auto folder. One of the programs I installed was *GDOS*.

I installed and configured the ASSIGN.SYS file and rebooted the system. The message "Atari GDOS release 1.1 resident" appeared on the screen, followed by "Unable to alloc AES bit buffer." Then the Falcon crashed.

I have deleted *GDOS* from the hard drive and my Falcon now boots up okay. What's wrong with the program?

Anthony Leech, Cullompton

A *The version of* GDOS *you have is an old one designed for use with the ST only, and as such, it's not compatible with your Atari Falcon. If you want to use a font system on your Falcon, you need to get* SpeedoGDOS 5.0 *from Compo Software (☎ 01487 773582). It costs £59.*

SpeedoGDOS *uses its own special outline fonts, so you won't be able to use your old* GDOS *fonts. On the other hand, you can use* SpeedoGDOS *on the ST, but to use it properly you need at least 2MByte of RAM.*

WORDS RULE, OK

Q My son has a 520 STE, which he used to use for playing games. Now he seems to have given up in favour of other things.

I've taken a computer course and I love word processing. Which is the best word processor program for the 520 STE? I really need something which is easy to use. I am mainly interested in creating letters and invoices.

I have seen second-hand printers for sale, what make and type should I get? Should I buy a second-hand printer?

By the way, what is public domain software and why is it so cheap?

Diana Harper, Nannerch

A *Any STE word processor worth using really needs at least 1MByte (1024K) of memory. Your STE has 512K unless it's been upgraded – ask your son. If it hasn't been upgraded, you can get a 512K plug-in upgrade for about £10. If you don't think you can upgrade the STE yourself, Marpet Developments will fit the extra memory for about £35. Call ☎ 01423 712600 for details.*

That's Write 2 *is a good, easy-to-use word processor. It has plenty of options, nice fonts and plenty of printer drivers – this last being especially important. It costs £99.99, and you can get it from Compo (☎ 01487 773582).*

Turn to page 49 for a guide to printer types and costs. It's often a false economy to buy a second-hand printer – your software may not have the correct printer driver for it (a printer driver is a small piece of code that tells the printer how to print a word processor document). Getting ribbons for older printers can also be tricky.

Public domain programs are usually programs that have been written by enthusiasts in their spare time. The authors of PD software often give their software away so that everyone can benefit from it. That's why it's so cheap.

Shareware is similar to public domain software, except that the author requests a small payment for the program if you use it on a regular basis. Shareware fees normally range between £5 and £20. Many PD libraries advertise in ST FORMAT *and there's a list of PD libraries in our directory (page 73).*

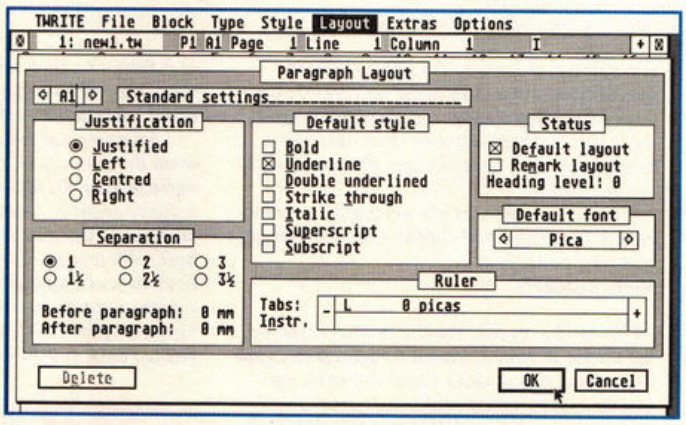
MULTIPLICITY

Q I have a new Atari Falcon030 and I'm very happy with it. However, the version of *MultiTOS* supplied with it is 1.04, whereas the latest version is 1.08. Where can I get *MultiTOS 1.08* and how much does it cost?

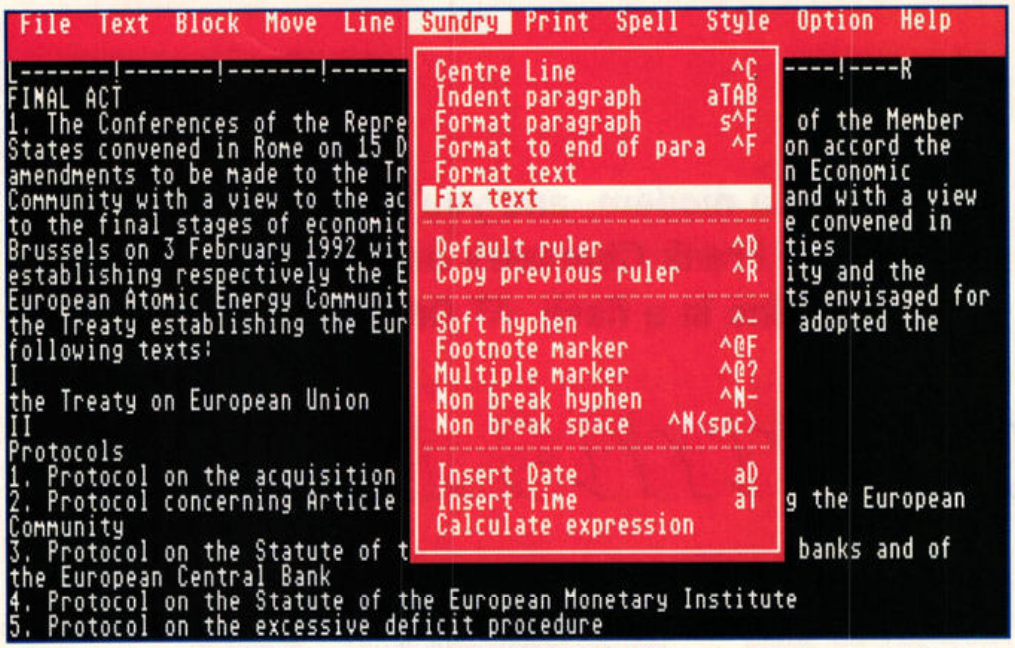
Ben Hills, Wells

A *HiSoft is the official supplier of MultiTOS, and the latest version costs £49.00. Call ☎ 01525 718181 to place an order.*

Remember that MultiTOS *slows down the system and is often unstable if the programs you run are not* MultiTOS *compatible. Unless you really have to run more than one program at once,*



That's write that's write that's write that's write, I really love your tiger light. That's neat that's neat that's neat that's neat, I really love your tiger feet. *(You've lost it, Clive – Karen)*



It's that *Protext* picture again. If you want to take advantage of the offer in *ST FORMAT* 41, you're almost three years too late. Sorry.

there's no need to use MultiTOS. *You can get along quite happily with whichever version of TOS 4 you have in your Falcon.*

OLD BUT GOOD

Q Back in issue 41 of *ST FORMAT*, you gave away *Protext 4.3* on the extra Cover Disk, and it's a brilliant program. In the magazine there is an application form for the manual, dictionary and conversion program. Is the offer still valid after all this time?

Is it possible to format Atari disks so that I can read ASCII files created in *Protext* in *Word Perfect* on a PC? I have an Atari STE with TOS 1.62. If this isn't possible, is there another way to transfer ASCII files to *Word Perfect?*

Matthew Taylor, Horsham

A *Blimey, you're a bit optimistic aren't you? Offers associated with Cover Disk programs rarely last longer than two months. The* Protext *offer is now almost three years old, so you're definitely out of luck there.*

Another bit of bad news is that Arnor, the company that developed and marketed Protext, *has gone into receivership (see News, issue 72).*

Fortunately, Compo Software is now selling Protext 6.6 *for £74.95, and is also offering upgrades from earlier versions of the program. Call ☎ 01487 773582 for details. We don't know if there is going to be any further development of* Protext.

According to Atari, all STs with TOS 1.4 and above format disks to the PC MS-DOS standard as long as you use the desktop formatting option. You shouldn't have a problem because you have TOS 1.62. In reality, though, many PCs seem unable to read disks formatted on STs.

You can get round this problem by formatting your 720K disks on a PC. Your ST can read them without any problems. Alternatively, you can get a copy of a public domain program called DC Formatter *from any good PD library.*

SPEED

Q I'm thinking of replacing the Motorola 68000 processor in my ST with the 68010 to accelerate it. I've read that the 68010 is a direct replacement for the 68000 and runs at 10MHz rather than the standard 8MHz. Do I need to change any other hardware in my ST?

Stephen Levy, Kirby

A *You shouldn't have any problems switching the processors, but it's not really worth the effort. Unless you increase the clock speed of your ST, replacing the processor won't make it run any faster. The standard clock speed of the ST is 8MHz, and it is the clock that controls the speed of the processor, not the other way around.*

What you actually need is a hardware accelerator – a board consisting of a fast processor with its own clock. Contact System Solutions on 01753 832212 about its range of hardware accelerators.

QUICKIES

I tried to copy my Cover Disk on to a blank disk, but my ST tells me it is the wrong source disk.
Timothy Fisher, Evesham

This problem arises when you try to use the ST's built-in disk copying program. For example, if one disk is formatted to ten sectors and 80 tracks and the other disk is formatted to nine sectors and 80 tracks, the ST gets confused and gives up. Your best bet is to use the Back Up *program we include on the Cover Disk every month to duplicate your disks.*

I am thinking of getting a hard drive. Could I use a bare SCSI drive or should I buy a complete drive like the Gasteiner one?
Pete Arnell, Bristol

You need to buy a complete drive with SCSI interface, case and power supply unit built-in. Most suppliers of ST hardware supply a SCSI drive complete with a special interface called a host adaptor. The host adaptor converts SCSI data to the ACSI data used by the ST's hard drive interface. For a complete guide to ST hard drives, see issue 73.

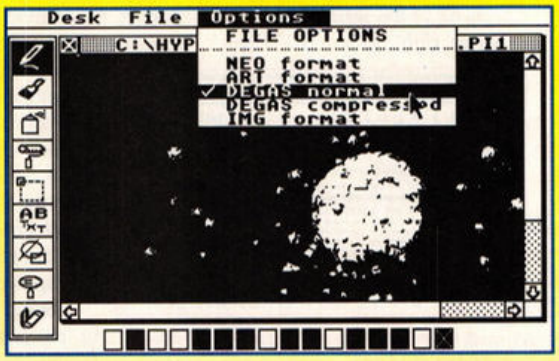
E-mail your questions and tips to Clive at: cparker@futurenet.co.uk or clive@netmag.cityscape.co.uk (please put 'STA' in the subject line), or post them to: ST Answers, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon, BA1 2BW.

HACKERS

I want to know how to use Degas colour images in *First Word Plus*. I have modified (hacked) the printer hex file, enabling me to use coloured text on my Star LC100 colour printer. Information for printing colour images is also included in the hex file.

Unfortunately, all my images are in Degas PI1 format and I am unable to load them into *First Word Plus*. How can I get my images into *First Word* Plus and print them in colour?
Mr G D Wood, Cannock

In order to get your Degas pictures into* First Word Plus, *you need to convert them to GEM Image (IMG) format. HyperPaint 2 (which featured on Cover Disk 54) will do this for you. All you have to do is load the Degas image into HyperPaint 2 in low resolution, then save it as an Image file – just select Image format from the menu when you are saving the picture. It only takes a few seconds for each picture.



HyperPaint 2 enables you to convert *Degas* files to GEM Image format. Smart.

Just bought a modem, and you're not sure how to get started? Frank Charlton's beginner's guide will get you on-line in a flash. AT OK, okay?

alt.comms.stf@

We've received a lot of questions recently about one particular subject: getting started with a new modem. Consequently, we're devoting this month's page to that very subject. We're too generous.

SOFTWARE

As well as a modem and an ST, you'll need a few pieces of software.

First, choose your comms program. There are quite a lot to choose from, both PD and commercial, and different packages will appeal to different users. Try out as many different programs as you can until you find one you like.

A good comms package should be easy to get into, but have the power you'll need later tucked away out of sight. My personal recommendations are *TeddyTerm* for STs, and *ConNect* for Falcons.

TeddyTerm is a very powerful package which runs in medium or high resolution, but you need at least 1MByte of memory to use it. If you're using a 520ST, it's worth looking at the old favourite, *VanTerm 4*. *ConNect* is excellent for Falcon use, because it supports all of the serial port speeds, right up to 115,200 bps. Both packages can 'learn' your logon procedure for each BBS and save it to disk, making connections much easier.

Next, you'll need a suite of archiving programs. Files stored on BBS systems are compressed to save space and download time. If you can't get on-line to get the software you want, and don't have a friend with a modem, check your favourite PD Library. Both FloppyShop and 16/32 carry good selections of comms programs – see page 73 for contact addresses.

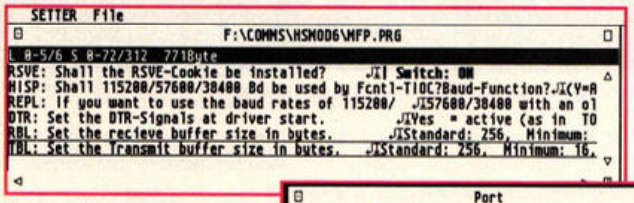
SERIAL FIXES

Many of you have also shown concern about problems with uploading to a BBS, and so-called 'serial port fixes'.

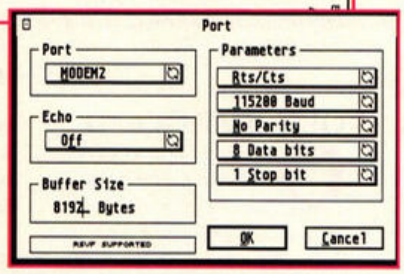
When your ST sends data to the modem, the modem needs to be able to tell your ST when to stop for a bit while it sends the data it has. This is 'flow control', and there are two methods: software (XON/XOFF) and hardware (RTS/CTS). Avoid software control; the hardware method is much less troublesome. The problem here is that most – if not all – versions of TOS have a bug in the routines which handle flow control to the serial port. A common symptom is that when you try to upload something, the transfer rate will continually drop back by a few K. Your modem is literally receiving data from the ST faster than it can cope with, and can't tell the ST to stop correctly.

Serial port 'fixes' or 'patches' replace the bugged code with a bug-free, more efficient routine. To do this, you just pop one of these fixes into your Auto folder so it runs when you boot your machine. There are lots of them about, but our experience has found that only one works reliably for most people: *HSMODEM6*.

HSMODEM6 contains different versions for the various Atari machines – you need MFP.PRG for an ST, and SCC.PRG for a Falcon. The manual explains how to configure and install it, and it should cure your flow control hassles right away. It's as indispensable as the comms software itself.



HSMODEM6's GEMmed configuration program makes setting it up simple.



Every comms package will set the RS232 speed for you – so don't use the Control Panel Accessory or CPX to set the speed.

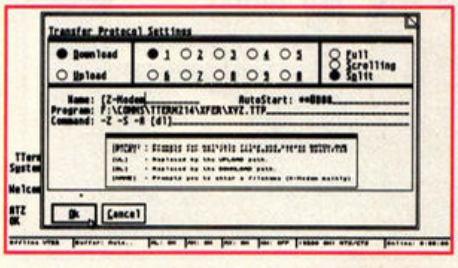
PORT SPEEDS

If you have a 2,400 bps modem without error correction and data compression (most are like this), you should tell your comms program to set the serial port to run at 2,400. With a compressing modem, you need to run the port faster, to allow the compression hardware room to work. If you have a rare 2,400 compressing modem, set the port to 9,600.

For normal 14,400 modems with compression (about 99 per cent of them) you should set your port at 19,200. Don't worry that the software doesn't seem to have a port speed of 14,400 – the flow control will stop the modem's buffer from overflowing.

With a 28,800 modem, you'll need to try a few speeds. If your Atari supports it, try the highest speed, such as 115,200 on a Falcon. Nip to the comms software's terminal screen, type AT and hit [RETURN]. If you see OK displayed on the screen, leave the port like that.

Some modems will lock their port at 38,400 though – if yours is like this, you'll see either nothing or a few garbage characters with the port set too high. Just drop to 38,400 and you'll be okay.



TeddyTerm 2.14: great for 1MByte STs, and available from any good PD Library or BBS.

E-mail your comms questions to frank@tachyon.demon.co.uk (please put STA in the subject line), or snail mail them to alt.comms.stf, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW.

This month Don Maple presents the longest assembly listing ever seen in *ST FORMAT* – possibly. Start counting those lines...

Assembly Line

And now for something completely different. Up until now this column has always been illustrated with short snippets of code. This month you'll find a complete program listing.

BMAPFIX2 is a relatively short program – a patch, to be exact – written when the Falcon first came out. All TOS versions have problems with the RS-232 port, and the Falcon's TOS is no different.

ON THE MAP

After the introduction of Ataris with multiple RS-232 ports, a new feature called Bconmap was added to the OS. This is really a table of pointers to relevant serial routines – in theory there's one set of routines for each port. It starts with Bconmap 6, which points to the MFP chip routines. Bconmap 7 and 8 point to SCC B and A routines.

The problem with the Falcon is that the MFP is not connected to the serial port. This creates a 'hole' in the table at Bconmap 6, because the Falcon boots with the default set to 7. What makes matters worse is that the number of mappable devices is mistakenly set to one, which confuses the OS into thinking that the only valid Bconamp is 6 (the first), while at the same time it defaults to 7 (the second).

This, in turn, means a change from 7 to the nonexistent 6 is allowed because 6 is the first and – according to the confused OS – only valid mappable device. Ironically, it's impossible to change to the valid Bconmap 8 – the LAN port. Once it is set to 6, the OS refuses to revert back to 7, thereby freezing the machine.

The answer? Change the number of mappable devices to three, right? Not quite... Setting the number to three fools the OS into thinking Bconmap 6 though 8 are all valid – but 6 doesn't exist.

This method actually does work up to a point – and was used in the first version of BMAPFIX – because even though a change to the nonexistent 6 is allowed, at least it can be reverted back to 7 or 8 without re-booting.

BMAPFIX2 then ironed out this last inconvenience by copying the routines for Bconmap 7 over Bconmap 6. This, in effect, re-directs Bconmap 6 to 7, enabling older programs with fixed Bconmap assignment to work on the Falcon – as long as they don't access the hardware directly.

Since BMAPFIX2 is not resident it can be run either from the Auto folder or from the Desktop. It can even be run multiple times.

As a footnote, Atari tried to fix Bconmap with FPATCH1, which was totally ineffective. This is why BMAPFIX1 was written. Atari then used a similar strategy in FPATCH2. However, it wasn't until BMAPFIX2, with its re-direction, that the problem was fixed for good.

Send all your assembly queries to Assembly Line, *ST FORMAT*, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.

PANEL ONE PANEL ONE PANEL ONE PANEL ONE

```
;-----------
; BMAPFIX2 (c) Don Maple
;-----------

                move.w #$20,-(sp)           ;enter super
                trap #1
                addq.l #6,sp
                move.l d0,-(sp)             ;save SP for when exiting super

                moveq.l #$ffffffff,d7
                movea.l $5a0,a0             ;get cookie jar address
                cmpa.w #0,a0                ;is there one?
                beq.s nocookie              ;no
getcookie:
                move.l 4(a0),d0             ;get cookie value
                move.l (a0),d1              ;get cookie id
                lea.l 8(a0),a0              ;point to next cookie
                beq.s nocookie              ;end of cookie jar
                cmpi.l #'_MCH',d1
                bne.s getcookie
                move.l d0,d7                ;_MCH found, return its value
nocookie:
                move.w #$20,-(sp)           ;exit super, SP already on stack
                trap #1
                addq.l #6,sp

                lea nofix(pc),a6            ;default to no need for patch

                swap.w d7                   ;get high word
                cmpi.w #3,d7                ;Falcon?
                bne.s exit                  ;nope

                move.w #0,-(sp)             ;is there Bconmap?
                move.w #44,-(sp)
                trap #14
                addq.l #4,sp
                tst.l d0
                bne.s exit                  ;no Bconmap on this machine

                move.w #-2,-(sp)            ;get pointer to Bconmap table
                move.w #44,-(sp)
                trap #14
                addq.l #4,sp
                cmpi.l #44,d0
                beq.s exit                  ;no Bconmap on this machine

                movea.l d0,a0               ;address of map table
                move.w #3,4(a0)             ;change number of Bconmaps to 3

                movea.l (a0),a0             ;get address of Bconmap 6 defaults
                lea 24(a0),a1               ;point to Bconmap 7 defaults

                moveq #5,d0
redirect:
                move.l (a1)+,(a0)+          ;copy Bconmap 7 over Bconmap 6
                dbf d0,redirect

                lea fix(pc),a6

exit:
                move.l a6,-(sp)             ;print message
                move.w #9,-(sp)
                trap #1
                addq.l #6,sp

                clr.w -(sp)                 ;and exit
                trap #1

                .DATA

fix:
                .DC.b $d,$a
                .DC.b $1b,'p'
                .DC.b ' BMAPFIX 2.0: Falcon Bconmap fixed ',$d,$a
                .DC.b $1b,'q'
                .DC.b ' Ω $7C9 Don_Maple @ kr.maus.de',$d,$a
                .DC.b ' donmaple @ cix.compulink.co.uk',$d,$a,0

nofix:
                .DC.b 7,$d,$a
                .DC.b $1b,'p'
                .DC.b ' BMAPFIX 2.0: Bconmap fix not required! ',$d,$a
                .DC.b $1b,'q'
                .DC.b ' Ω $7C9 Don_Maple @ kr.maus.de',$d,$a
                .DC.b ' donmaple @ cix.compulink.co.uk',$d,$a,7,0

                .END
```

Mac Marsden swoops bat-like from the sky, scoops up your GFA queries in his jaws, crunches them up and spits out the answers. Probably.

GFA Workshop

SORT ME OUT!

Q I need to re-sort a list of names – actually it's my video collection. I need to be able to sort them alphabetically and also by record creation date. What is the quickest and most effective way of achieving this?
Andrew Court, Livingstone

A *If you only had one field – if, say, you held all of your information in an array a$(100) – then I would suggest you use QSORT(). However, you mention that you also hold other data, in which case I would use a customised sort function.*

This involves looking at the ASCII value of the record field you wish to sort by, and moving the highest value (A=65, Z=94) to the end of the array. Repeat this until the record list is in alphabetical order. In the example below, I have set up a character array and number array to hold ten pieces of data.

```
DIM a$(10)
DIM b(10)
FOR f=1 TO 10
    a$(f)=CHR$((RND*25)+64)
    b(f)=f
NEXT f
PRINT "Unsorted data"
PRINT,"Video","Date Created"
FOR f=1 TO 10
    PRINT
"record>";f,a$(f),b(f)
NEXT f
```

In the above code, a$(x) holds a randomly chosen uppercase letter and b(1) to b(10) hold the values 1 to 10 respectively. This could be the order in which you entered the data, but in your case it would be the record creation date. The data is then displayed on screen. Next, we need two FOR loops:

```
FOR f=1 TO 10
    FOR g=1 TO 10
```

The setting up of the two FOR loops is very important. The F loop has to run through our array ten times (we have ten data records). The G loop also runs through the list ten times for every increase in the F loop. Within the G loop we have:

```
IF a$(f)<a$(g)
temp$=a$(g)
a$(g)=a$(f)
a$(f)=temp$
```

The IF statement looks to see if a$(f) has a value less than a$(g). If this is the case, the next three lines then swap the values in a$(f) and a$(g), using temp$ as a temporary storage area.

```
    t=b(g)
    b(g)=b(f)
    b(f)=t
    ENDIF
```

The values held in b(f) and b(g) are also swapped, which keeps them 'attached' to the corresponding a$(x).

```
    NEXT g
NEXT f
```

The code below then prints out the sorted data, which should now be saved to disk.

```
PRINT "Sorted data"
PRINT,"Video","Date Created"
FOR f=1 TO 10
    PRINT
"record>";f,a$(f),b(f)
NEXT f
~INP(2) ' Hold current
screen until return is
pressed
```

If you want to sort the records by the Date created, alter the IF statement so it reads:

```
If b(f)<b(g)
```

The rest of the code remains the same.

An open question: What would happen if in our array (a$(),b()), we only had five slots filled with data? How would we solve the problem? (That's two questions – Karen)

```
Unsorted data
          Video          Date Created
record)1  O              1
record)2  U              2
record)3  K              3
record)4  G              4
record)5  E              5
record)6  A              6
record)7  A              7
record)8  M              8
record)9  I              9
record)10 W              10
Sorted data
          Video          Date Created
record)1  A              7
record)2  E              5
record)3  G              4
record)4  K              3
record)5  M              8
record)6  O              1
record)7  U              2
record)8  V              9
record)9  W              10
record)10 X              6
```

The two lists of data – note how the 'date created' values have stayed with the corresponding data after sorting.

SLOW PRINTING

Q I want to make type appear on the screen as if it were coming from a teleprinter or a slow modem connection. This is to make people read the text word by word. I have tried the PAUSE command, but this just wrecks the program. Is there an easier way to do this?
Francis Charles, Penrith

A *The easiest way to slow down the printing of separate characters on screen is to use a FOR loop which can be increased or decreased to give you the result you desire.*

```
a$="Get the most out of your
Atari ST - on sale now!"
FOR f=1 TO LEN(a$)
    PRINT MID$(a$,f,1);
    FOR g=1 TO 2000
    NEXT g
NEXT f
```

In the above code, the first run through of the FOR loop prints the letter 'S'. Now we have to wait for the G loop to run 2,000 times. These operations are then repeated until F has a value of the length of a$.

This method is heavy on memory unless you use a routine to detect a specified character, say the hash (#) sign, which indicates that a new line is required.

```
a$="Get the most out of your
Atari ST - on sale now!#From
all good book stores..."
FOR f=1 TO LEN(a$)
    IF MID$(a$,f,1)="#"
    PRINT
    ELSE
      PRINT MID$(a$,f,1);
    ENDIF
    FOR g=1 TO 2000
    NEXT g
NEXT f
```

In the above code every time a # is detected a new line is printed, but the # is omitted.

TIP of the MONTH

Still using the IF statement? Why not begin using the SELECT and CASE functions? These commands make branching possible by SELECTing your variable (which may be a number (x) or letters (a$)). In our example, 'x' can have a value between 1 and 10.

```
x=RANDOM(10)+1
 SELECT x
 CASE 1 to 5
    PRINT "x has a value between 1 and 5"
 CASE 6 to 10
    PRINT "x has a value between 6 and 10"
ENDSELECT
```

If you have any questions, or would like to see a particular subject covered, please write to Mac at GFA Workshop, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW or e-mail him at mac@mentor.demon.co.uk

Despite recent attempts to replace him with a sophisticated artificial intelligence computer, Frank Charlton is here again to soothe your STOS pains.

STOS Corner

CUE PLAYBACK...

Q I am writing my first program in *STOS*. I only know some of the language, and some assembly language. I've almost finished, but what I want to do now is have some stereo music from *Quartet* playing on the title screen, which displays a picture in *Spectrum 512* format. I have a Microdeal Playback cartridge, which gives stereo output even on an STFM.

The player routines from *Quartet* aren't for *STOS*, and only play in mono. The ones supplied with Playback work in stereo, but don't give instructions on using them with *STOS*. I need some code in *STOS* and assembly to play music back in three ways: mono for STFM, stereo for the Playback cartridge, and stereo for STE owners.

Richard Fullaway, Kingsworthy

A *Unfortunately, Richard, I'm not an assembly programmer, and I don't have access to either a Playback cartridge or the routines supplied with it.*

There is a Quartet *replay routine for* STOS *users knocking about, and you should be able to pick it up from any PD Library with a decent* STOS *collection. The routine does play music back in stereo for STE users, but has no provision for the Playback cartridge. If anyone has written working routines which can play any music back in stereo via Playback, please get in touch and we'll feature them.*

I should also point out that you're going to have problems trying to play Quartet *music at the same time as displaying a* Spectrum 512 *picture. Both routines are rather heavy on the ST's processor, and won't happily co-exist with each other. It's a bit less critical on an STE thanks to the DMA hardware, but an STFM can't manage it, I'm afraid. The* Quartet *routines in particular are so CPU-intensive that the mouse needs to be disabled, because moving it slows down the music. Sorry I couldn't be more help.*

JOY OF LINKS

Q Thank you for answering my query about data transmission in issue 72. I have a further query for you on this subject, though.

In your reply you mention that the ST's MIDI ports can transfer data in excess of 30,000 baud. How do I go about setting the speed in *STOS?* Is it already set when the ST is first switched on?

Andrew Robertson, Strathclyde

A *Glad to help, Andrew. Unlike the modem port which can operate at different speeds, the ST's MIDI ports only have one speed. You don't need to configure any speed parameters, which is another reason why they're a better choice for multiplayer link games.*

If you're not convinced that a game can be greatly improved by the addition of a link, take a look at a linked game of Substation. *We played it at the Spotlight Show, and Nick and I were almost at each other's throats - it was much more fun. Oh, and Nick cheats, too.*

The multiplayer link option makes Substation a whole lot of fun.

STOS MAILING LIST

The *STOS* Mailing List on the Internet is alive. Les Greenhalgh, who previously ran the list at stos@bath.ac.uk, has left University to make his way in the big bad world. Rather than see the list closed, Anthony Jacques has stepped in and found a way to carry on at a new e-mail address. To join the mailing list, send a message to stos-request@man.ac.uk with a line in the message as follows:

```
subscribe stos
yourname@your.email.address
```

To send mail to everyone on the list, address the e-mail to stos@man.ac.uk. Be patient if you don't see any replies right away, as Anthony is away on summer vacation. By the time you read this, the new term will be starting, so the list should be active again quite soon. Lots of kudos to Anthony for sorting this out, and Les should re-appear in the list when he gets a new Net account.

Keep in touch with other netsurfing *STOS* users, thanks to the *STOS* Mailing List.

DOWN UNDER

Q I am finding it very hard to get *STOSser* disk mags here in Australia. Can you please let me know where I might find them on the Internet, as they really are the only way I can get Atari software these days.

Mike Murphy, Australia

A *There is a limited selection available on the vast University of Michigan site (ftp atari.archive.umich.edu, or try one of the more accessible mirrors such as src.doc.ic.ac.uk), but there are only a few issues and they're way out of date.*

One option would be to find a Netter who is willing to send you the disks via good old snailmail.

Stosser is an excellent source of STOS info, but where do you find it in Australia?

There are plans afoot to make the full selection of STOSser *disks available via ftp, starting with recent issues and gradually going back, but nothing is confirmed yet. More news as I get it - since you're so far away, I'll e-mail you.*

Send your *STOS* queries to: *STOS* Corner, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW, or e-mail your questions to: frank@tachyon.demon.co.uk (please put STA in the subject line).

This month Mac Marsden checks the date, ports himself to another system and looks out the window. Confused? Well, it's what you asked for.

HiSoft C Centre

AM I DATED?

Q I have been following your short series on HiSoft C Interpreter regularly and would like to ask a couple of questions before I dash out and buy the manual.

First, is there a command which will return the current date? And second, is there any way in which I can make the contents of an array either all upper-case letters or all lower-case letters?

Marty Fields, Planet Earth

A *Here are the answers to your dilemmas, Marty. The command that returns the current date is STRDATE. To see how it works, examine Panel One.*

As far as changing case goes, you are spoilt for choice. There are two commands for each operation:

- *TOUPPER and STRUPR will return a character array to upper case*
- *TOLOWER and STRLWR will return a character array to lower case.*

In the example in Panel Two, I have chosen to alter the array mac[] which initially holds the string 'ST FORMAT'. Through the FOR loop we are passing every letter in the array one by one, altering each one as we go to lower case.

The reason there are two sets of commands is that the TOxxx commands are for ANSI, and the STRxxx commands are for Unix systems. However, all commands will work equally well on any of the Atari machines.

FAIR EXCHANGE

Q I am slightly irritated by the fact that HiSoft's C header files and source code files appear to be tokenised, making portability (one of C's main benefits) impossible. Could you tell me whether there is any way to make the package use ASCII files instead?

Graham Courtney, Paignton, Devon

A *If you examine the* HiSoft C Interpreter *manual, Appendix D (Porting Programs) mentions that you have to enter the EDITOR mode from the FILE menu. Load the desired file, then save it in this mode is as standard ASCII.*

You may find, though, that compiler written C programs are incompatible (variables may not have the same name as the library function), or they may run more slowly. HiSoft C uses 32-bit integers as standard, so be careful if you are transporting code that expects 16-bit integers.

WINDOW CLEANER

Q Please, please help me create a window, and then clear it, so that I can print, say two pages of instructions that change when a key is pressed.

George Brown, Shanklin, Isle of White

A *George, anything to oblige. The short listing in Panel Three will help you on the way.*

Try altering the window position (20,20,400,150) and the title of the window until you become comfortable with creating and using windows. ***stf***

Send your C questions to Mac at HiSoft C Centre, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW, or e-mail him at: mac@mentor.demon.co.uk (please put STA in the subject line).

PANEL ONE PANEL ONE

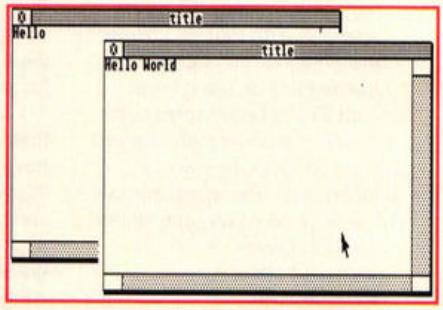
```
void main()
{
    char *date;
    char buffer[9];
    date = strdate(buffer);

    printf("Today's date is: %s\n",strdate(buffer));
    evnt_keybd();
```

PANEL TWO

```
void main()
{
    char mac[]="ST FORMAT";
    int f;
    for(f=0;f<9;f++)
    {
       mac[f]=tolower(mac[f]);
/* mac[f]=tolower(mac[f]); would change the array to upper-
case. Try altering ST FORMAT to lowercase in char mac[] and
change tolower to read toupper */
    }
    printf("\nThe uppercase letters are now >%s",mac);
    evnt_keybd();
}
```

PANEL THREE

```
main()
{
int window;
/* initialise window as integer /*
window = open_window(2307, 20, 20, 400, 150, "title", "");
/* set window co-ordinates and form window on screen */
print_window(window, "Hello");
/* print "hello" in the Window */
    evnt_keybd();
/* wait for a key to be pressed */
    clear_window(window);
/* clear the current window */
    print_window(window, "Hello World");
/* print new message */
    evnt_keybd();
/* wait for a key to be pressed */
    close_window(window);
/* close window */
}
```



These two windows have been merged into one to show the results of creating a window and printing two messages to it.

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The Score

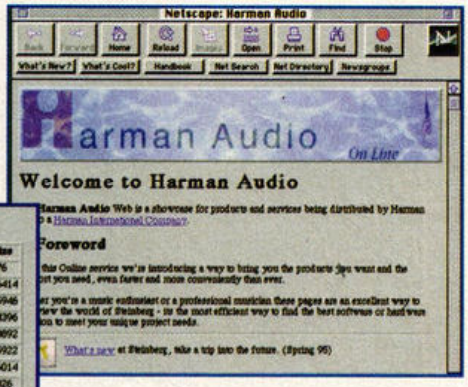
And on radio 6, Andy Curtis is about to start the final installment of the MIDI jargon ultra-buster. Switch over now, folks, or you'll miss the happy ending.

Harman on the Web

Harman Audio, the UK distributor of Steinberg products, has opened a World Wide Web site. It provides a wealth of information about *Cubase* and related products for various platforms, including the Atari. You'll also find details of Steinberg's Internet service, which is based in Germany.

The Harman site is comprehensive and well-thought out, and it's certainly worth a visit. You can e-mail Harman Audio's Steinberg department with queries about the various products, or use it to access other Steinberg-related sites in the UK.

If you have Web access, point your browser at: http://www.harman.co.uk/. Alternatively, you can e-mail Harman at: Feedback@harmanuk.demon.co.uk for technical support or product information.



Harman Audio has launched itself on to the Net with this first rate Web service.

Atari Version Chart May 95'

Product	Platform	Version	Date	Size
Avalon	Atari	2.10.00	11.9.91	2676
Cubase Audio Falcon	Atari	2.03.00	02.02.95	596414
Cubase CBX D5	Atari	1.02.00	01.06.94	525948
Cubase Score	Atari	2.00.06	29.11.94	364396
Cubase ST 3.0x	Atari	3.10.00	27.10.93	370892
Cubase Lite	Atari	1.00.00	02.03.92	205922
Cubest	Atari	2.00.00	09.08.91	216014
Cubtrax	Atari	1.00.00	27.10.93	73026
DMP7 DTM	Atari	3.0 B9		83186
Keyslot	Atari		26.05.92	1136
Masterscore	Atari	2.00.00	01.01.92	300767
MIMIX	Atari	1.25.00	06.09.91	89495
MROS	Atari	3.42.00	02.06.94	38796
MROS ACI.Drv	Atari		12.12.94	4061
MROS Export Drv	Atari		30.09.93	2954

This chart enables you to pinpoint the version number of any Steinberg product, together with its release date.

THE K.AT

£79, Digital Awareness, ☎ 0181 598 8081

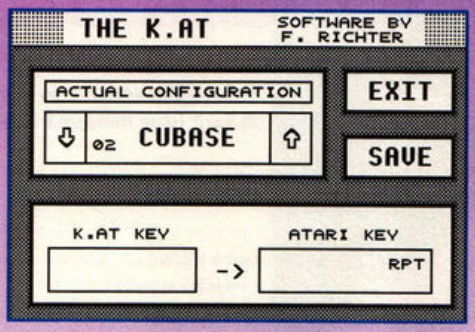
The K.AT is a complete remote control system.

The K.AT is a small device which plugs into the joystick port of your ST and provides a comprehensive remote control facility. A simple accessory enables you to configure it to perform almost any combination of key presses that you desire – just press the K.AT key you wish to use, then enter the key or key combination you wish to assign. It's as simple as that.

The K.AT is very useful for recording and sequencing. The buttons are already marked up for Play, Record, Rewind and many other common sequencer functions, and sets of key presses for *Cubase* and *Creator* are supplied. However, it is so easy to create your own sets that you'll find yourself using the K.AT for a variety of functions. We even managed to configure it for playing several games.

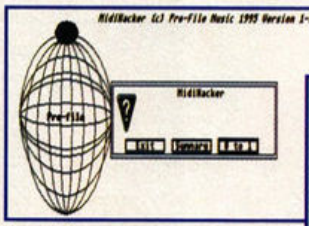
The K.AT is capable, neatly designed and a real joy to use. You are no longer tied to the computer screen, because all the common sequencer controls used for putting down real-time tracks are available wherever you need them. The generous length of cable supplied with the K.AT enables you to place it wherever you want – so, if you fancy liberating yourself from your ST, the K.AT could be just the thing you've been looking for.

STF RATING: 89%

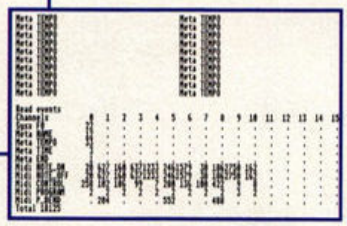


The simple accessory supplied with The K.AT enables you to create your own remote control sets.

MIDI HACKER



MidiHacker may not be attractive program, but it gets the job done.



£9.95, Profile Entertainment, ☎ 0115 9245454

This is the product we've all been waiting for: a simple program which converts type 0 MIDI files into type 1 MIDI files.

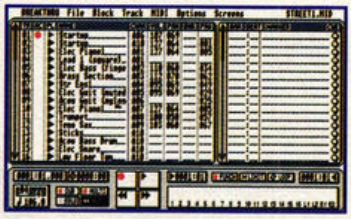
A type 0 MIDI file will appear on your sequencer as a single track, which may actually contain many different parts. Some sequencers simply cannot cope with data in this format, so along comes *MidiHacker* to convert type 0 files to the more friendly expanded type 1 files. A type 1 file lists each part individually.

As a bonus, *MidiHacker* also adds the correct General MIDI name for each track as it converts the file. This makes the result very easy to work with.

MidiHacker has a basic dialog box and file selector interface – it's not fancy, but it works. Simply select the type 0 file to convert, wait a couple of minutes for the file to be converted, and then select a path and file name for the result. *MidiHacker* runs on all STs in both high and medium resolutions, and it worked perfectly with every file we tried it on.

If you need to convert type 0 MIDI files into type 1 files, this program is ideal. It would benefit from an more graphical interface, but the functionality is spot on. Buy with confidence.

STF RATING: 82%



The converted file loads into *Breakthrough* without any problems. Each instrument is named correctly.

www.stformat.com

General MIDI

General MIDI has become increasingly important to those of us who need our music to be portable between locations and MIDI setups. Commercial MIDI files are all in GM or the hybrid GS format – but how are they constructed, and how easy is it to create a GM file?

The answer is that it is pretty easy to create a GM file, even if you don't have a GM synth. There are a few rules you will have to learn to obey, however. For the time being we will ignore GS, because it is a hybrid of the GM format, and not all machines support it properly. If you keep to the following rules, your MIDI file will play on any GM badged synth or module.

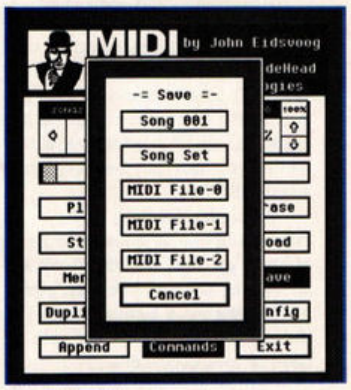
On this month's Cover Disk you will find a GM file called FUNKY.MID. This was constructed using *Cubase* and a simple GM module, and is completely GM standard. Feel free to poke and prod the file to see how it is laid out and put together.

Our example is saved in MIDI type 1 format, which makes it easy for sequencers to load. All the tracks are displayed as individual entries in your sequencer, with their correct names.

If MIDI type 0 format is used, all the parts are put together into one massive track which contains all the information for the piece. Many MIDI file producers use this format, because it is neat and most MIDI file players handle it without problems. However, if you wish to work with a computer sequencer type 0 files are not much use, because you are unable to see what is going on.

If you have files which seem to be in type 0 format, a program like *MidiHacker* (reviewed opposite) will be of great use, as it inserts the correct names for each part as well as expanding all the tracks out for easy editing.

If you want to create type 0 MIDI files yourself, *MIDI Spy* will do the job for you. You can get a copy from System Solutions (☎ 0181 6931919).

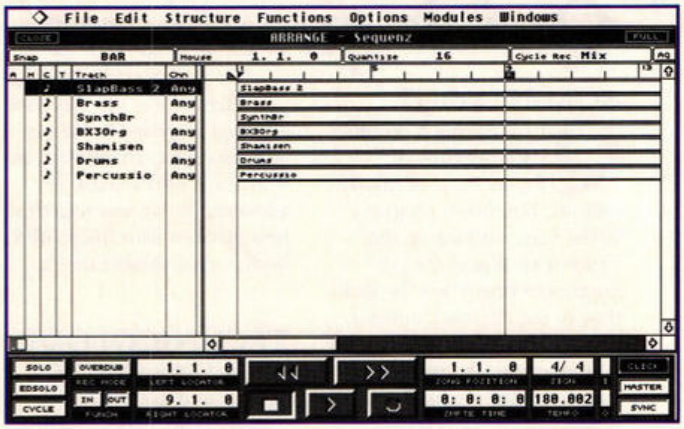


MIDI Spy is one of those rare utilities which can save in MIDI type 0 format.

Program changes

One of the pivotal components of GM is unified sounds and program changes. Every GM synth has a similar set of sounds – they aren't identical, but they're very similar. A program change number is associated with each sound, enabling sounds to be selected reliably from within sequencer data for each track. If you select program 1, you will have a piano ready to play; if you choose program 62, a brass section will tune up, and so on through your MIDI orchestra.

We have included a full list of GM program changes on this month's Cover Disk. If you print it out, you will have each sound and its program change number at your fingertips.



This is how our demo file looks when it is loaded into *Cubase*. The part names should appear in your sequencer when you load the file, too.

Turn up the sound

MIDI files need to be mixed, just as any piece of music is mixed, so volume settings need to be registered as well as program change numbers. GM synths tend to default to a volume of 100, so make sure you establish a set value for each instrument you use. You can vary it as the piece progresses.

Study the chart (right) and keep your file within the parameters stated. Keep an eye on polyphony, so as not to transgress the 24-note limit, and make sure there are at least eight notes available at all times for the drum part.

Volume and program change data can take a split second to register on your instrument after the data is sent, so it is a good idea to set up an 'empty' bar, which contains just this data, at the start of your piece. This ensures that your file starts out with all the right sounds and volumes. Establish the tempo using a master track or global tempo setting, and it will be saved with the MIDI file.

That's it, then – apart from the small matter of writing the tune, that is. Remember to save your work in type 0 or type 1 format so that everyone can load it, not just those with the same sequencer as you.

GM PARAMETERS

Overall polyphony	24 notes
Program changes	0-127
Drum polyphony	8 notes
Drum MIDI channel	10
Volume default	100
Volume range	0-127

MIDI JARGON ULTRA-BUSTER PART FOUR

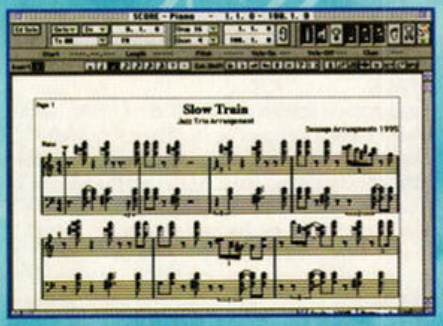
The final part of our long-running MIDI ultra-jargon buster saga unfolds this month. Listen up, girls and boys.

Running Status

Recent sequencers support this new standard for faster transmission of MIDI. All but the oldest of synthesizers can respond to MIDI data with running status.

Score Edit

Usually this is an edit page within a sequencer package, but stand-alone score editing packages are also available. A score edit page enables you to work with standard music notation derived from real-time MIDI input. The scope of such editors varies widely, but when they are implemented well, they are instruments of great power for composers and arrangers.



Score edit pages make score layout and printing a piece of cake. You can even play your music in from a keyboard, rather than writing it from scratch.

Step Entry

The process of entering notes on a sequencer without actually playing them at tempo. A note value is selected, together with other note parameters, and is then pasted into a sequence. Intricate musical sections can be created with little technical skill. Very handy.

Synchronisation

An external converter can be used to sync a multitrack tape player with a sequencer. This enables live vocals to be played alongside computer-driven sequences without timing errors creeping in.

System Exclusive

Every synth manufacturer has its own set of system-exclusive messages which are recognised only by its brand of synths.

System exclusivity is very handy when specific setup information is sent – all the other MIDI devices simply ignore the Sysex messages not intended for them.

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Quick questions

BOMBED OUT

Q I am having a problem with my copy of *Replay 16*, particularly with the Drumbeat program. When I am working on the patterns section of the program, selecting either the Real-time or the Playback buttons to hear my newly-made pattern causes the program to crash with the playback dialog box frozen on the screen. I then have to re-boot my system and start again.

Is this a known fault in the program, or is it my system? I have a 2MByte STE with TOS 1.62 and I use a Phillips 8833 colour monitor.

Errol Waite, London.

A *We were unable to recreate your errors on our machines with* Replay 16 *and the Drumbeat program, so it is possible that you have a memory problem.*

Alternatively, you may have a corrupt program file. We suggest you contact HiSoft/AVR on ☎ 01525 718181 and ask for assistance. If you have registered your purchase with HiSoft/AVR, it offers a full support service.

TECHNICOLOUR

Q I have a 1040STFM and use MIDI software, hence I have a monochrome monitor. My problem is that I do not know where to get hold of a colour emulator (if, indeed, one exists) to run all the software on your Cover Disks. Can you tell me where to get one, or more usefully, stick one on your excellent Cover Disk for myself and other colour-challenged ST users?

Rory Hollins, Edinburgh

A *There are a couple of colour emulators around, neither of which is 100 per cent reliable. Games software which needs to auto-boot is usually completely incompatible with colour emulators, for example. However, with a bit of experimentation, you may be able to get some programs working adequately. If you look on this month's Cover Disk you might get a pleasant surprise.*

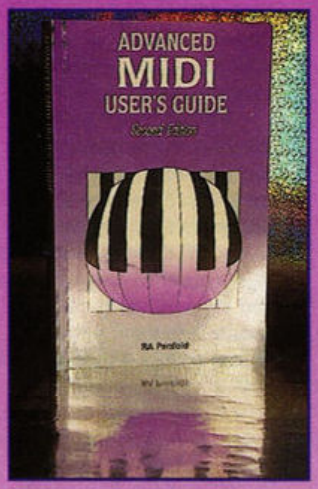
By far the best thing to do is to use a little portable television for colour work, with a simple RF lead from your ST to the television. The image quality is good enough for games and you get that all-important colour. And you can watch Star Trek, *too.* ***stf***

THE SCORE

Each month The Score brings you the latest ST-related MIDI news and reviews, and answers your MIDI and music queries. Tell us what you'd like to see, and we'll do our best to provide it. Write to: The Score, *ST FORMAT*, 30 Monmouth St, Bath, Avon BA1 2BW or e-mail Andy at: andy@adlib.co.uk.

THE ADVANCED MIDI USER'S GUIDE

by RA Penfold (Second edition)
ISBN 1-87775-39-2
£10.95, PC Publishing
☎ 01732 770893



***The Advanced MIDI User's Guide* is written mainly from a technical point of view. Don't hold your breath for lots of up-to-date tips on exploiting your MIDI system to the full, though.**

***The Advanced MIDI User's Guide* promises to help you get more out of your MIDI system. Much, if not all, of the content is valid – but it does tend to sound more relevant to 1991, when the book was originally written, than to the present day.**

***The Advanced MIDI User's Guide* is written mainly from a scientific and technical point of view, rather than from the standpoint of a musician. Basic MIDI theory is covered in detail, including the construction of MIDI messages, but there is rarely more than the most cursory mention of practical applications for this knowledge.**

Mr Penfold appears to be well informed and enthusiastic about monophonic synthesizers and early polyphonic instruments, but talks in hushed tones of multi-timbral instruments as though they are still almost the stuff of dreams. Mixed in with the technical descriptions are some surprisingly simplistic statements, such as:

> **"...first connect two units together with a [MIDI] cable that is known to be functioning properly... Next replace the good lead with the suspect one. If this does not provide a link between the two MIDI units, then the cable is faulty."**

Is this really what we need to hear in an advanced MIDI user's guide? The description for a hard drive is also somewhat dated:

> **"...the capacity of a hard disk is typically equal to that of about sixty floppy disks."**

By our calculations, if the disks were 720K floppies, this would give you around 43MByte. In 1991 this statement might have been true, but you don't get much eight-track direct-to-disk recording in 43MByte (about a minute's worth, in fact).

Regrettably, this book is relentlessly unfulfilling all the way through. Perhaps the author should have written a new book for 1995, rather than trying to update the 1991 edition. There is simply so much more that could and should have been covered in a book like this.

If you need a fairly basic technical guide to some aspects of MIDI, you may find this book an interesting read. If, however, you are looking for a punchy, up-to-date MIDI power guide, you will have to look elsewhere.

STF RATING: 46%

MIDI JARGON ULTRA-BUSTER PART FOUR

Tempo
Simply the speed at which your sequence runs. Sequencer speeds usually range from around 25 to 250 beats per minute (bpm).

Thru Box
A device which provides two or more parallel MIDI out lines from a MIDI output. It is useful when MIDI chaining is inappropriate.

Timing Resolution
The smallest timing increment which a sequencer can distinguish, measured in parts per quarter note (ppqn). A low resolution sequencer can sometimes struggle to reproduce your input performance accurately.

Touch Sensitivity
Keyboards which feature touch sensitivity (also known as velocity sensitivity) can differentiate between a hard strike of a key and a soft one, and can detect the graduations in between.

Track
Each named line on a sequencer is known as a track. Each track can be assigned any MIDI channel and several tracks can share the same MIDI channel if required. Parts are the blocks of data on a track, and all of the tracks used in a piece are known as the arrangement or song. Tracks make sequencing easy for the user.

Undo
Most sequencers have a single level undo facility which enables you to remove the last action or recording.

Velocity
The speed with which a key is hit is related to how hard the key is hit. Velocity is MIDI's way of 'seeing' how hard a key has been hit and converting it to MIDI data.

Volume
Each MIDI channel has a volume setting from 0-127. If you need to limit the overall volume of a MIDI channel, this value can be altered. It is also useful for creating fade-in effects.

Wind Controller
An alternative to using a MIDI keyboard to input MIDI data. Wind controllers can be laid out like conventional wind instruments and used to control any other MIDI device. They can create very convincing wind instrument effects.

Zoom
Many of the edit pages in sequencers have zoom functions. They enable you to discover those annoying little errors and set them right.

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To get to grips with the PC you could...

...read through all these weighty tomes

(and you'd become a complete computer bore)

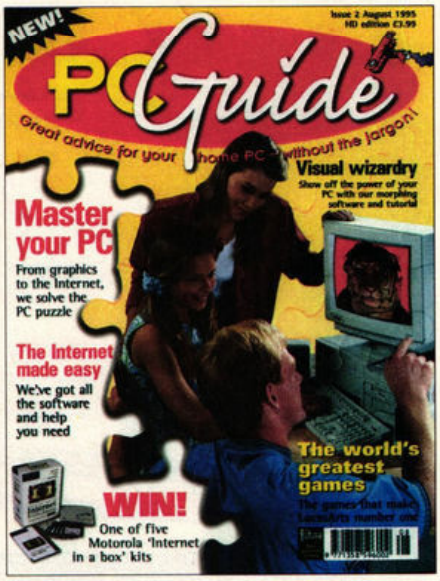
...or you could just read *PC Guide*

(and people will still want to talk to you at parties)

PC Guide

Issue two, on sale
Thursday 13th July

You don't have to be a computer boffin to get the most out of your PC at home. Not any more. *PC Guide* is the first PC magazine on the news-stands which treats you like a human being. We don't load our pages with meaningless jargon. We don't overwhelm you with pointless technical facts. Instead, we offer straight-talking advice on using your home PC, explaining how to get to grips with the machine and exactly how you and your family can exploit it to the full. At last there's somewhere to turn when you want advice that makes sense.



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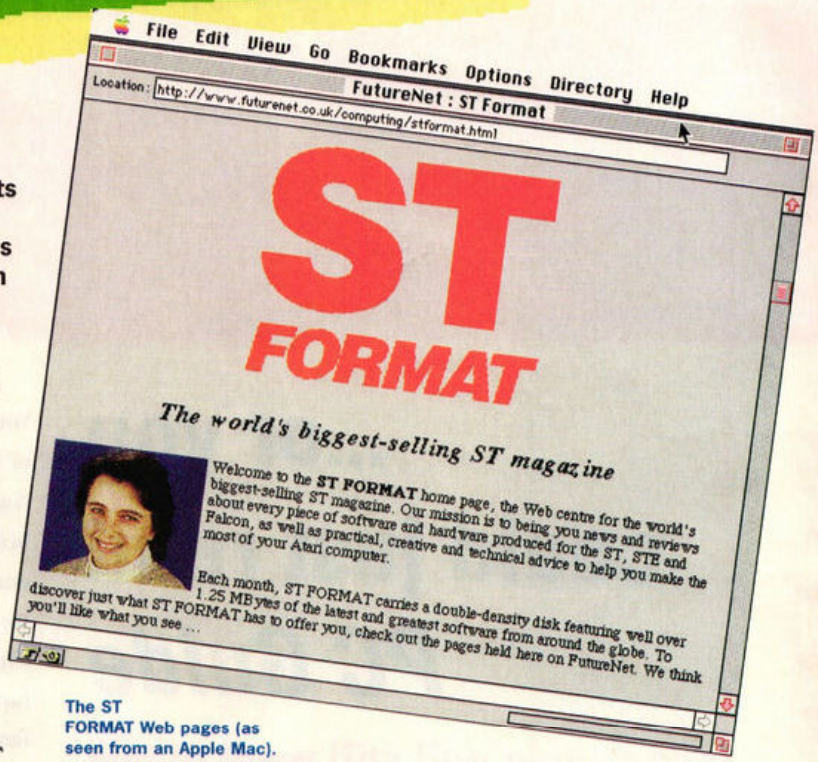
FutureNet

Over the last few months, *ST FORMAT* has been expounding the virtues of the Internet. Proud boasts have been made about the impact this electronic media will have on all our lives. Now that future has arrived! *ST FORMAT* has stepped on to the Net with its very own page on the World Wide Web.

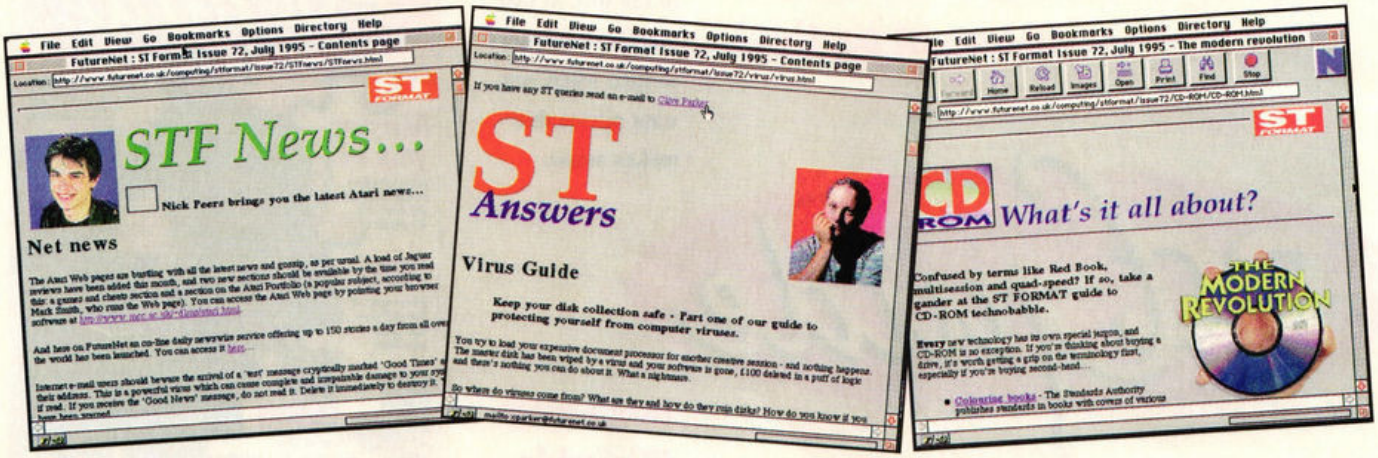
The *ST FORMAT* home page enables you to check out next month's features, e-mail the team, search for back issues, pick up the latest news, buy mail order products, take out a subscription or even read reviews of the latest PD.

As well as *ST FORMAT*, FutureNet also carries snippets and features from other Future Publishing magazines, including *.net*, *Edge*, *Ultimate Future Games*, *Future Music*, *Total Guitar*, *Classic CD*, *Cycling Plus*, and *MBUK*. So why not pay us a visit soon?

Karen Lewell.



The ST FORMAT Web pages (as seen from an Apple Mac).



http://www.futurenet.co.uk

www.stformat.com

Boot disks

Nick Peers returns, clutching a disk bursting full of accessories and boot programs for desktop publishers everywhere.

You've got your desktop publishing package – be it *Calamus*, *Papyrus*, *Pagestream* or *Easy Text Professional* – now what you need is a selection of boot programs and accessories to boost your machine's performance and reduce the time you spend switching between different programs or waiting for screen redraws.

Most desktop publishing programs come packed with extras, such as spell-checkers and limited graphical tools. Nevertheless, there are still external programs and accessories which can be used to improve them further.

Boot programs

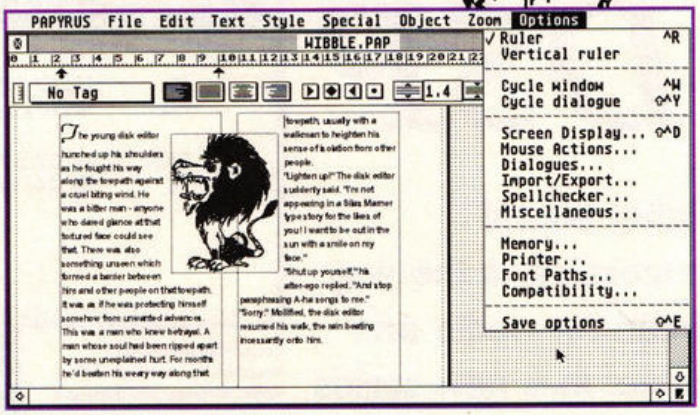
The most important add-on for DTP is a screen accelerator. Even if you have a hardware accelerator installed (such as the Pak 68/3, reviewed in issue 70), a dedicated screen accelerator can still speed up redraws. The only package seriously worth considering is *NVDI 3* (*STF* 71, 97%). Use this, and you'll soon become dependant on it.

If you're using *Papyrus* or *Easy Text Vector Professional*, you'll need *SpeedoGDOS* installed in your AUTO folder to be able to use vector-based fonts in your documents. The latest version of *SpeedoGDOS* also enables you to use TrueType and PostScript fonts in your documents. What's more, it comes with an Accessory which makes it possible to install and remove fonts quickly and easily. *Calamus* uses its own internal vector fonts and has no need for the program.

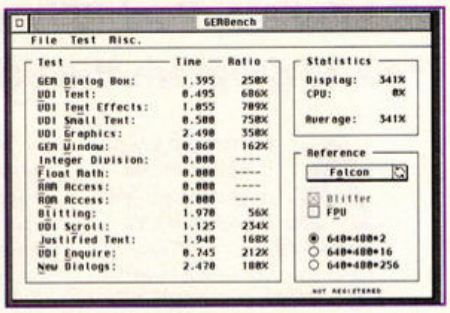
The final boot program you might consider is a utility to increase your screen resolution. This enables you to boot up your machine with a larger screen, which is useful for fine DTP that may be cramped by your normal resolution. ST owners can use *Monster*, an ancient PD program that enables you to increase the current resolution by up to five times. Not all of the screen is shown at once though – you must use the mouse to scroll around it.

You need a selection of boot programs and accessories to boost performance

Falcon owners can utilise *Screenblaster 2* (*STF* 65, 90%). This hardware/software combination can install screens of up to 1280x960 pixels in up to 256 colours. Unlike *Monster*, it shows the entire screen, which could lead to problems on lower resolution monitors.



Papyrus is fast, and version 4, due for release very soon, is even faster. Just imagine combining it with *NVDI*!



NVDI can increase screen updates by nearly 350% on the Falcon. On the more humble STFM the speed increase is around 620%. Well worth considering, eh?

Accessories

If you're new to your desktop publisher, you'll appreciate some on-line help. The FaST Club markets a series of hypertext files for all the DTP programs mentioned – we'll be reviewing *Mastering Calligrapher* next month. All are installed as Accessories, and take you on guided tours of your program, making it easier to get to grips with.

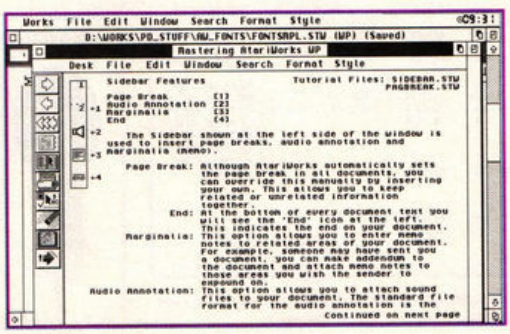
Although many desktop publishing packages have built-in text editors, these are often pretty limited (editing tools are largely non-existent, and they're often slow too). If you want to be able to create or amend ASCII text on the fly, you need *SpiritEd*. This ingenious text editor runs as an Accessory, and featured on Cover Disk 70.

Finally, what happens if you've got your text all ready, and you're about to import that wonderful picture, only to realise you forgot to convert it? Well, you could save your document, quit the program, load in an image conversion utility, convert the image, and so on. Alternatively, you could use *Imagecopy* in its Accessory form. This enables you to convert images quickly without leaving the comfort of your desktop publishing program.

And there you have it, the perfect boot disk for DTP.

Where to next?

Next month Frank Charlton shows you how to create a boot disk for art packages, complete with boot programs and Accessories to unlock your creative talent. *stf*



Mastering AtariWorks is just one in the ever increasing range of on-line help accessories from the FaST Club.

WHERE TO GO...

NVDI 3: £49.95, System Solutions, ☎ 01753 832212
SpeedoGDOS 5.0: £59 (upgrades £29.99), Compo Software, ☎ 01487 773582
Screenblaster 2: £69, Compo Software, ☎ 01487 773582,
Imagecopy 4: £34.95 (upgrades available), FaST Club, ☎ 0115 945 5250
CalAssistant (£19.95), **CalAssistant SL** (£29.95), **PageAssistant** (£29.95), **Mastering AtariWorks** (£29.95), **Mastering Calligrapher** (£TBA) and **Mastering Papyrus** (£TBA) are all from the FaST Club, as above

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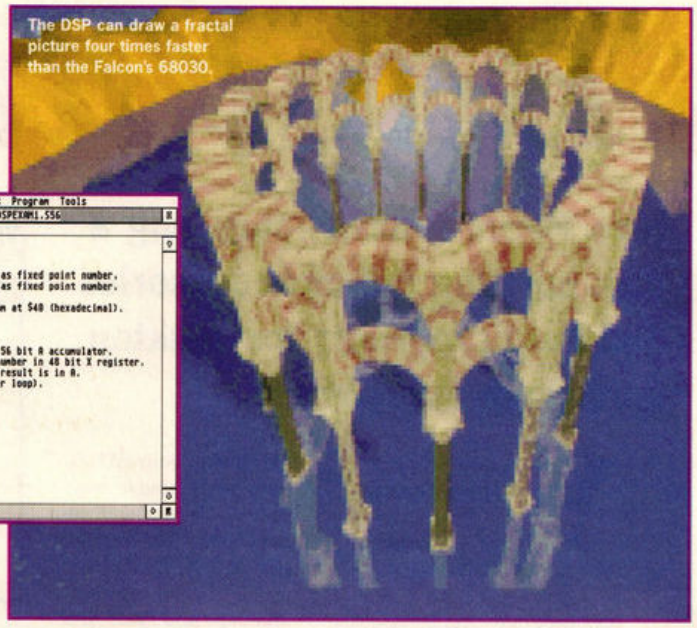
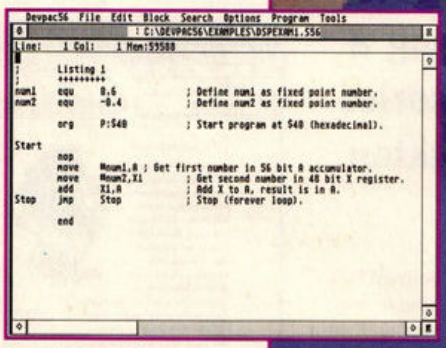
Project DSP


The DSP can draw a fractal picture four times faster than the Falcon's 68030.



DevpacDSP provides an integrated environment with editor, compiler, and debugger.

Digital Signal Processing is the way ahead for audio and music. In a new series of tutorials, Paul Hills shows you how to program the Falcon's DSP.

Anyone who has just bought a Falcon might be justified in feeling a little disappointed with it. This statement may sound surprising, but it is not a criticism of the amazing capabilities of the machine. It is the stunning lack of technical documentation which has brought me to say such a thing. In fact, the only reference to the magic little beastie inside is, "Features a 32MHz Motorola 56001 DSP."

Luckily, HiSoft has released *DevpacDSP*, a truly invaluable tool for getting at the digital signal processor. There is also a PD 56001 assembler, called *A56*, which subscribers will find on this month's Wonder Disk (it is also available from PD libraries). It isn't as powerful as *DevpacDSP*, but it will still assemble and run your programs. Every 56001 program shown in this course works with both *DevpacDSP* and *A56*.

So, what exactly is signal processing? The world is full of signals – sounds, different types of light, pressures, temperatures and so on. In all these cases, our bodies have 'sensors' to measure these signals. Our ears, eyes and skin measure the signals and send values to an extremely powerful computer, the brain, which processes them and makes some sense of it all.

The brain works with electrical representations of continuously varying signals, such as light intensity and sound volume. These continuously variable signals are called analog signals. The brain is effectively a powerful analog computer.

We can make a digital computer and equip it with sensors that will measure the world around it, enabling it to make decisions. However, the sensors measure analog signals, and the computer works with digital numbers, so an Analog to Digital Converter (ADC) is required. If the computer has to make a varied response to the signals, it will probably also need a Digital to Analog Converter (DAC) to produce an appropriate output. We end up with a system like the one shown below.

The digital computer doesn't have to be a DSP. It could be a normal microprocessor, or even a desktop computer, but DSPs have been specially designed to perform this task. They have dedicated hardware and instructions on board which enable them to do this task more efficiently than any other type of processor.

The DSP really comes into its own when it is used as an audio processor

The Falcon's DSP is not limited to signal processing – it is capable of many tasks. Signal processing requires some mathematical operations – particularly multiplication and addition – to be done at high speed, so the DSP is optimised to do these quickly. It could therefore be used as a numeric co-processor, or as a stand-alone maths processor.

DSP in action

In a desktop computer, signals are really limited to light (video) and sound (audio). However, it isn't easy to use the DSP to create stunningly fast graphics for games, because it has no direct connection to any of the Falcon's video hardware, or indeed to its memory and keyboard. All that sort of information must be channelled via the 68030, which slows things down.

That said, games are starting to appear that use the DSP to make maths-intensive graphics really fly. If any processing needs to be done on a video image, such as that done by many ST and Falcon image processing programs, the DSP is well suited to the job.

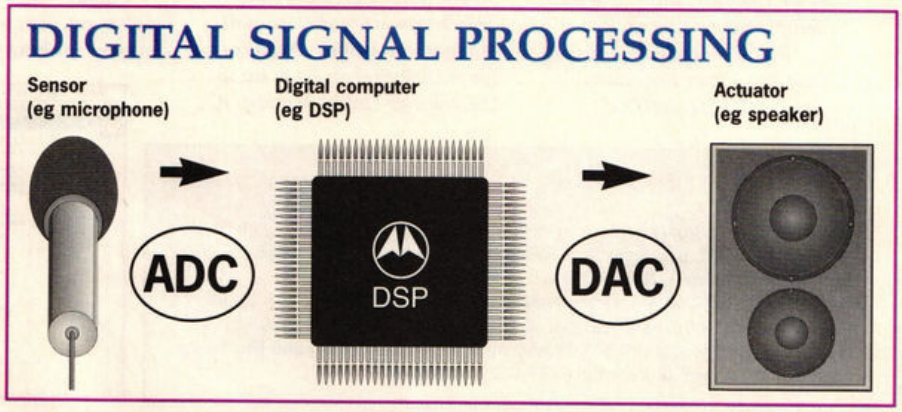
The DSP really comes into its own when it is used as an audio processor. The Falcon is

```
                ;       Listing 2
                ;       =========
                ;       In this example, we will calculate the answer the equation
                ;                       A = (bv * cv) + (dv * ev)

P:0040                  org     P:$40           ; Start program at $40 (hexadecim.
P:0040          Start
P:0040 60F400           move    #bv,R0                          ; Point to X memo.
P:0041 001000
P:0042 64F400           move    #cv,R4                          ; Point to Y memo.
P:0043 001000
P:0044 000000           nop                                     ; Pause for pipel.
P:0045 F95800           move    X:(R0)+,X0 Y:(R4)+,Y0           ; Get first two n.
P:0046 C08080           mpy     X0,Y0,A    X:(R0),X0  Y:(R4),Y0 ; Multiply and put
P:0047 200002           mac     X0,Y0,A                         ; in A. Get next .
                                                                ; Multiply then tr
                                                                ; and add to the
                                                                ; previous answer.
P:0048 0AF080 Finish    jmp     Finish                          ; Stay here.
P:0049 000048


X:1000                  org     X:$1000
X:1000 400001 bv        dc      0.5000001
X:1001 600000 dv        dc      0.75

Y:1000                  org     Y:$1000
```
A56, the public domain assembler, just scrolls its output up the screen as it goes. There is no editor or debugger.



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THAT DSP JARGON IN FULL

Analog to Digital Converter (ADC)
The ADC converts a waveform, such as an audio signal, into digital data which can be stored and dealt with by the computer.

CODEC
The COder/DECoder. This is a chip in the Falcon that integrates an Analog to Digital Convertor and a Digital to Analog Convertor in one package. Both are 16 bits wide and can operate at 50,000 samples per second, which is better than CD quality.

Digital to Analog Converter (DAC)
The DAC converts the numbers stored in the computer into a real world (analog) signal.

Digital Filter
A filter takes frequencies out of a signal selectively. A High Pass filter, for example, takes low frequencies out, leaving the high frequencies. A Low Pass filter takes high frequencies out.

A Notch filter takes out a thin range of frequencies, and can be useful for getting rid of mains hum, which is at 50Hz (60Hz in some countries). A Band Pass filter does the opposite – it lets through only a range of frequencies, removing higher and lower ones. A Comb filter removes some frequencies, and leaves others, in a shape which looks like a comb.

Digital Signal Processor (DSP)
A microprocessor specially geared to dealing with audio signals.

Fast Fourier Transform (FFT)
FFT is a mathematical method for finding out what frequencies are present in a signal.

Fixed Point Numbers
Fixed point numbers are numbers that have digits after the decimal point. For the 56001, most of the fixed point numbers are between -1.000 and +0.999.

Floating Point Numbers
Floating point numbers are like fixed point numbers, but they have a multiplier, called the exponent. For example

5.25355×10^8

In assembly language they are normally binary though, for example:

1.11110101 x B11010

Integer Numbers
An integer number is a number which has no digits after the decimal point. For example, 0, 1, 8, 255, and 3876896 are integers.

Sample
A sample is one measurement made by the Analog to Digital Converter of a waveform.

The Switch Matrix
This is part of a chip in the Falcon which determines which signal goes to the DSP, and where the signal from the DSP goes.

awash with audio capability as it is, but the DSP enables any one of the audio sources (Mic input, DSP port, DMA channel) to be used as an input, and any of the audio channels (Earphone output, DSP port, DMA channel) to be used as output. In the middle, the DSP can do the most weird and wonderful transformations of the audio signal. Alternatively, the DSP can be used to generate the signal itself.

DSP programming

The aim of this series is to teach you how to program the 56001, and how to use it with your Falcon. However, if you've got an ST, that doesn't mean that you can't do any digital signal processing, or that these tutorials are no use to you. DSP theory is the same whether you are using on a 68000, a mainframe computer, or a DSP. It's just that the DSP is the best and fastest way to process signals.

We'll be keeping the ST owners in mind throughout the series, and any useful programs for the DSP will be presented in 68000 assembly language as well (except the programs specifically for learning 56001 assembly language).

The series will also teach you about digital music and audio at its lowest level, including how to sample sounds, and how to process them with the 56001, or a 68000. The Falcon is capable of some astounding feats – all you need is a little knowledge.

APEX Media uses the DSP to speed up image processing.

Code taster

As a taste of things to come, let's look at a piece of 56001 assembly language. We can't do a 'Hello world' program, because the 56001 doesn't have direct access to the screen, so let's do something really simple – add two numbers together. The program in Panel One does just that.

If you are at all familiar with 68000 assembly language, the instructions in Panel One should be self-explanatory, but let's go through the program anyway.

The equ assembler directive is exactly the same as in 68000 assembly language (and every other assembly language). It assigns a value directly to a label. We could have typed:

```
move   #0.234,A
move   #0.345,X
```

instead, but it is common practice to define constants at the top of the program.

The org directive (short for origin) tells the assembler where in memory the program is to be put – in this case, at $0040 (the $ prefix indicates that the following number is hexadecimal).

The P: before the address tells the assembler to put the program in program memory. The DSP has more than one memory bank (more on this next month), so the assembler must be told which memory bank to use whenever an address is specified.

Start, on the next line, is just a label. Labels may use upper and lower case letters, numbers, and the underscore character. The nop instruction (no operation) is there because *DevpacDSP* doesn't like an immediate move as the first instruction in a program.

The next two instructions move the previously defined data into two of the registers. The first thing you'll notice is that the numbers are fixed point numbers, not integers. These registers can hold values between -1.0 and nearly +1.0.

The add instruction then adds the X1 to the A register, and places the result back in the A register. Job done.

To stop the DSP racing on and executing junk instructions after the add instruction, a continuous loop is placed at the end of the program. Don't worry about this hanging up the DSP as it would a 68000 – the 68030 can stop and start the DSP whenever it needs to.

Well, that's your first DSP56001 program. Not very exciting, we know, but once you've learnt a bit more about registers and fixed point fractional numbers next month, you'll be ready to write some more useful programs. ***stf***

Moon Speeder makes extensive use of the DSP – just one more reason why it can't run on a humble ST.

PANEL ONE

```
num1 equ 0.234                  ; Define num1 as fixed point number.
num2 equ 0.345                  ; Define num2 as fixed point number.

org         P:$0040             ; Start program at $40 (hexadecimal).

Start       nop                 ; Dummy first instruction.
    move    #num1,A             ; Get first number in 56 bit A accumulator.
    move    #num2,X1            ; Get second number in 48 bit X register.
    add     X1,A                ; Add X to A, result is in A.
Finish      jmp     Finish      ; Finish (forever loop)

end
```


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Magazines: ST FORMAT from issue 6, bulk purchase discount. 520 STFM (IBM) including software bundle, £90. 50MByte hard disk, £500. CM8833 II monitor, £100. Teletext receiver, £60. Good combination deals. Tel: 01582 458430.

New hardware to clear still boxed with instructions and guarantee. Atari STE E169. Colour monitor Sc1224 £120, 2MByte £55, Vortex IBM emulator £85. Roctek Drives £35. Tel: 0181 2872764.

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IMG Scanner £10, Outrun £3, James Pond £3, individual back copies of ST Review/User/FORMAT on request. Write to Mr H Milton at 1 Glendyke Rd, Liverpool, L18 6JR.

4MByte STE, joystick, trackball, external floppy, Phillips colour monitor CM8833 MKII, loads of software. £425 ono. Ask for Nick on 01243 586432.

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Interface I to modem for Spectrum and 2A Emulator working for ATARI 1040 ST. Phone 01494 462695.

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Megafile hard disk for 1040 STF. Also games wanted. Contact: A Beumer, Voorhorst 9, 7414 BA Deuenter, Holland or tel +3157004516.

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VIDI ST or Videomaster Digitiser wanted for Atari STE. Please ring with details on Darlington 01325-468411.

Suppliers, PDL's and customers for new classified ads disk. Send SAE and disk to Leonard Smales, 2 Avon Croft, Ossett, Wakefield, WF5 8QX for a free ATARI copy.

A copy of Graffix for ATARI STE. Please call Danny on 01843 232282. Also wanted a competent programmer for sample based project for ST. Same number.

Monitor stand for Phillips 8833II. Also cheap external hard drive (up to 100MByte). Phone Lee 01803 212289.

Copy of Disk Three of Dragons Lair 3 – Mordread. Mine has been corrupted! Willing to pay. Phone Lee on: 01803 212289.

Looking for SAM-2-DISK from Dattrax software and Breakthru 2 by Gajits technologies. Only originals! Please send your offers to: Oliver Puschatzki, Zeystr.20, 55120 Mainz/ GERMANY.

Still wanted – Hi Res Monitor and anything to do with Timeworks 2. Tel: 01585 482702.

Wanted: STACY or ST Notebook in working condition. Tel Ken on 01495 750669.

HELP! Lonely STE requires Silent Service 2, Storm Master and Micro Prose Grand Prix (Geof Crammond). Originals only with instructions. Call Phil anytime on: 0151 5311460.

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Wanted, urgently, Atari Portfolio, any software, books too. Has anyone got Killing Cloud for STE? Phone James on: 01527 546756 after 4.30pm.

Deja-Vu 2 and Shadow Gate. Tel: Chris 01502 562337 after 6pm.

Wanted – International Sports Challenge for STE, will pay £15. Telephone Scott before 7pm on: 01788 890986.

Wanted – good quality printer suitable for ST use. Must have original leads/manuals etc. Contact: Gary, 15 Goosecroft Gardens, Northallerton OL6 1EJ.

ATARI STE manual wanted – has anyone got one they no longer need? Tel: Colin 0181 5406750.

If I don't get a copy of Cannon Fodder for £10 or less I'll explode! Reply to Const at 133 Pembroke Road, Ilford, Essex, IG3 8PF.

Wanted: Shadow of the Beast II, Super Off Road, Stratego, Shocker Trap Dictionary, Oxyd Book. Send prices to: Bill, 6610 Gunton Wy, Stockton, CA, 95207, USA.

ATARI ST book with accessories. Tel: Fred 01222 396411 (daytime), 01443 203902 (evenings).

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ATARI Hi-Res Monitor: 24-pin mono/colour printer. Excellent condition only. Reasonably priced. Contact Ivan, 42 Dickson House, Ridgway Road, Hanley, Stoke-on-Trent, ST1 3BA.

ELITE II for STE. I am looking for a copy of this great game, needed ASAP. Phone anytime please, Tony: 01732 361455.

ST FORMAT Issue 71 required. Part 2 of Pable Paint Tutorial as well. Would reimburse all costs. Ian Lane, 25 Roman Way, Seaton, Devon, EX12 2NT.

Dragon's Breath with manual. Will pay £10 ono. Write to Matthew Leach, 3 East St, Doe Lea, Derbyshire, S44 5NP.

Moonstone the game, will pay rewardingly. Do not require box or manual. Phone Gregg: 01472 828057.

Wanted: Session PTNR version 2, or Session PTNR Profix. Cash and/or swap. Phone 00 353 21778168.

RPGs, eg: Zak McKraken, Manian Mansion. Write to Thomas M at 51 Windsor Place, Edinburgh, EH15 2AF.

Does anybody know if there is an ATARI user group in the Middlesex area? If so, please let me know. Tel: 01585 482702.

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Calling all programmers! If you have a good knowledge of ST hardware and are interested in developing new software and hardware, we want to hear from you. For more information, write to: Genesis Project, 21 Conquerors Hill, St. Albans, Herts AL4 8NS.

Anyone know where I can keep up-to-date with Jaguar hardware/software and reviews etc? Please write to: Rob, 36 Ings Close, South Kirkby, Pontefract, W. Yorks.

To Gordon Allen – please call back regarding cover disks – or write to 26 Barnardo St, London E1 9HD. Lost your number – sorry! Sven.

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Third dimension – 3D kit user group, monthly diskmag – £1.50. Datafiles, tutorials, routines. 85% ST FORMAT. Write: 19 Kipling Close, Lockwood, Huddersfield, Yorkshire, HD4 5HA. Tel: 01484-460888.

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Mark Smith's Atari Web Page: http://www.mcc.ac.uk/~dlms/atari.html

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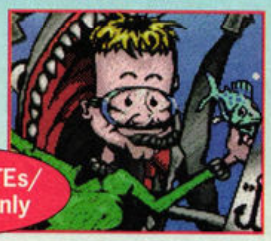

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PSYGNOSIS

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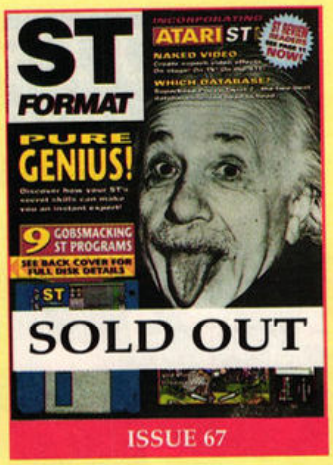
Disk: *Magic Storybook* and *BBS Directory* Inside: A World of Information – Net sites, how to set up your own BBS; *MagiC* vs *Geneva* Tutorials: *KAOSDesk, Twist 2, ST Disk Cat, AtariNOS*



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Inside: Pure Genius – explore your ST's powers; *Twist* and *Superbase Pro* head to head; ProTOS show Reviewed: *Obsession, Quill 2, Imagecopy Colour 3.5*

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Disk: *Stardust, Endurance, Route Finder* and more Inside: All you need to know about animation; ST First Aid course; programming tutorials Reviewed: *Zero-5, Metamorphosis...*

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Compact Office Management System (business), *Cops 'n' Robbers 2* (game), *Superboot 8.1* (disk utility)

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Modest (MOD file database), *Duckdash* (game), *Marcel Dictionary, AB Format* (disk utility)

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Better late than never, as my granny always used to say. Now, thanks to head gamesbuster Simon Forrester, you can make it to the reactor on time.

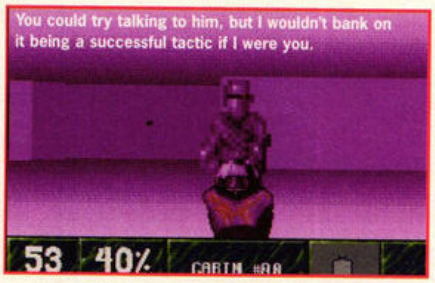
Gamesbusters

Substation Demo

If you've been having trouble completing issue 72's demo of Unique Developments' newest release, *Substation*, say a big thank you to M Davis from Camden, London. He has not only completed it, but also sent the working solution to us for everyone to share.

- Select your gun, and then clear all the immediately accessible areas. Pick a wall and follow it around, turning with it and going through any doors that are unlocked. Imagine that you're trailing your hand along it, and never let your fingertips leave it while you're navigating.
- Next, take the elevator immediately opposite the toilet with the first aid boxes, and go to the third floor. Again, if you clear all the accessible areas, you'll end up with the red access card.
- Use the same elevator to go to the second floor, and go into the room that's a direct right turn from the elevator you arrived in. Here you'll find the subgun, which is the next meaty weapon you get your hands on.
- Next, use the red card to get through the door opposite the elevator. Turn left when you get to the large square room on the other side. If you follow this corridor, you'll get to a large, open, roughly circular room. A right turn from here will take you to the game's second elevator.
- From here, you can go back down to level one, kill the guard waiting there and get the green card in the room behind the elevator shaft, before returning to level two.
- Make your way back to the first elevator, and go to level three, killing the two guards in the connected rooms. Turning right at the end of the rooms will take you to a green door, which you can now open.
- Once you're through this door, there's only really one path you can take. It will lead you to a large room with an inverted cross-shaped wall structure in the middle.

As you enter this room, turn right. You'll effectively be standing in a square room, with an exit in the middle of the wall you're facing. If you walk straight through this exit and keep walking up to the blank wall, you'll find that, lo and behold, you're facing a secret door. On the other side of this door you'll find a yellow card.



- Make your way back to the second elevator on level two, and travel to level three. Walk straight forward out of the lift through the two narrow rooms, and you'll come to a yellow door, on the other side of which is the exit point – walk up to the wall marked 'Exit' and press the space bar.

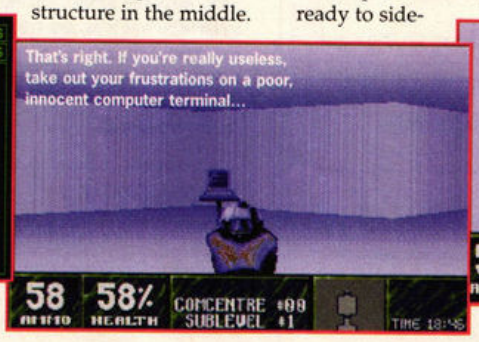
General tips

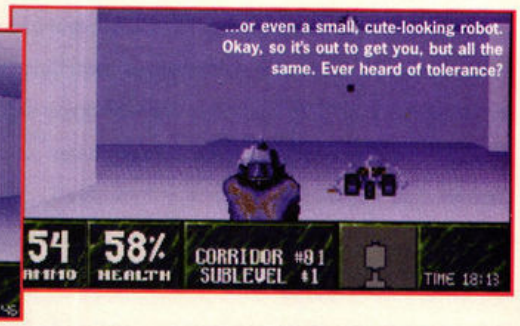
- When you're not sure exactly what's lurking behind a door, open it and back away, ready to sidestep any fire with the INS and CLR keys.
- Remember that you'll always get an audible warning of any bad guys if you quickly step into a room and then back out again.
- Save the subgun for the freaks in the radiation suits. When you use it, be ready to sidestep quickly (hold down shift) to avoid fireballs.
- Be careful when returning to level two, as more beasties will come out of the mysterious black doors on the level – the doors are effectively monster generators.
- Spiders take two shots to kill, scorpions take three, and soldiers take five. If you run out of subgun ammo when you're with the radiated freaks, use a bomb. If the worst comes to the worst and you get penned in, a bomb will kill them without quite finishing you off, even though you're standing on top of it.
- Hold down shift and run everywhere.

More, more

And if the demo solution isn't enough for you, just wait till next month. We'll be bringing you complete solutions to the first six levels of the full game.

Ah yes. Your adorable general, he of the 'drop them in it, and leave them to it' school of command.





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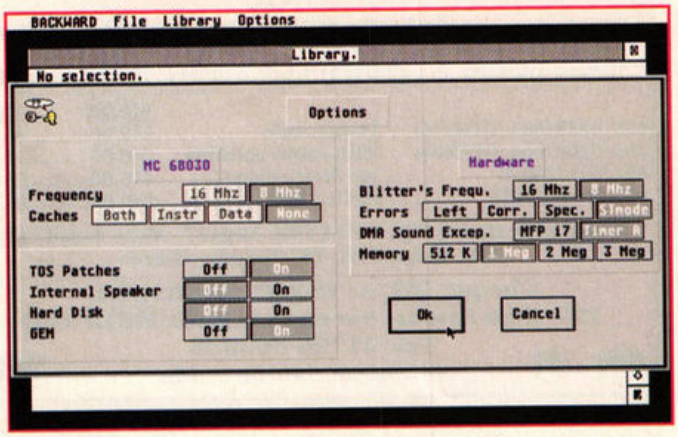


You can run Lemmings on a Falcon – if you've got Backward, that is.

Lemmings larks

Q I've recently bought a Falcon, and copies of *Lemmings* and *Lemmings 2* from your mail order section. However, I'm having serious problems getting the games to run with my version of *Backward*. How does it work?

A Blackberry, London

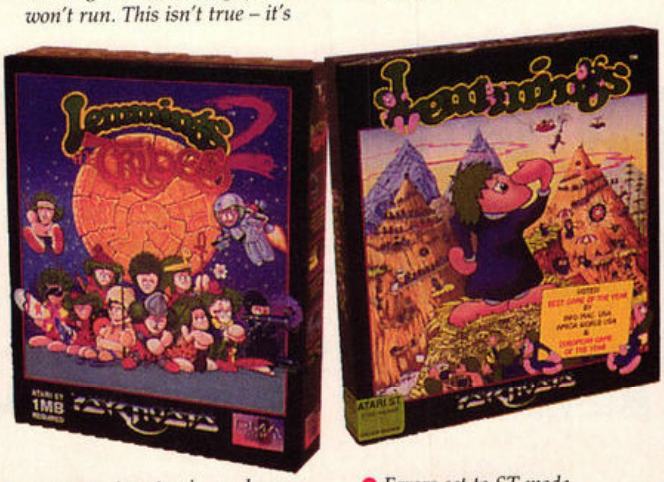
A *Hello there! It seems that the complexities of* Backward *have fooled quite a lot of Falcon owners into thinking that* Lemmings *just won't run. This isn't true – it's very easy to get going as long as you've got a rough idea of the kind of ST you want to emulate. Bear in mind that the following explanation works with* Backward 2 *or later.* Backward *is available from all good PD libraries and BBSs.*

First of all, install Backward *on your hard drive and run it, with the game you want to run inserted into the drive. When* Backward *has loaded, go to the options menu, and select Set-up. You should now be looking at a set of buttons and dials describing the ST you're about to emulate.*

On its default setting, the only parameter you have to change is the memory configuration – set it to the minimum required for the game you're trying to run. For Lemmings 1, *this will be 512K, and for* Lemmings 2 – The Tribes *you'll need a whole* 1MByte. *Click OK, and select Re-boot from the File menu to restart your Falcon as a smaller, less-powerful ST.*

While we're at it, you can set up Backward *to work with nearly all other games by using the same method. If you're worried about any of the other setup options, you should have:*

- *A frequency of 8MHz.*
- *No caches.*
- *TOS patches on.*



- *Errors set to ST mode.*
- *A blitter frequency of 8MHz*
- *DMA sound to timer A.*

If that doesn't work (which is very rare), give up. **stf**

If you've got some hints and tips to share, or need a little help from our intrepid Gamesbuster, write to:

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Feedback

ST FORMAT SEPT 1995

Forget Vicks Vapour Rub – if you need to clear your chest, Feedback is the best remedy...

Virus hoax

This is just a quick note to let you all know that the Good Times virus *(see news, STF 72)* is a total hoax. The warning message is the actual virus – it's totally harmless, but is spread around like a virus. The first thing I did when I received the warning message was to post it to everyone I know – human nature, I guess – and so it was spread. But it is a total hoax, I promise. The original writer of the warning message has now owned up and said that it was a load of crap, so there we go.

Anyway, keep up the good work on the magazine.

Dave Woodley, via e-mail

stf: *How embarrassing, I guess we receive this month's dunces cap. Anyway, thanks for letting us know.*

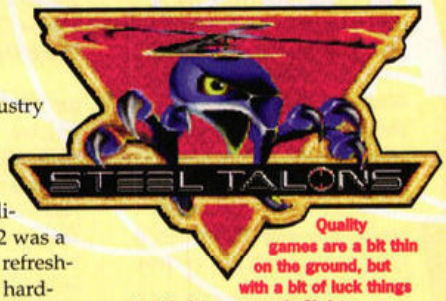
No games?

The rest of the industry may be collapsing around our ears, but your mag is steadily improving. Issue 72 was a great read and it was refreshing to see all the new hardware on display (I don't think I'll be getting either a Falcon Mark 2 or an Eagle until I win the lottery, though). The recent competitions have been good to see too – even when you do get the date wrong.

Just one thing bothers me, though: the lack of decent game coverage. Is this a decision on Karen's part – I hope not – or a lack of games generally? I enjoy the practical guides you've been running recently, but not at the expense of games pages.

Danny Gower, Liverpool

stf: *Thanks for the compliments, the whole team has worked extremely hard to produce the best magazine for ST users. Of course not everything is under our control, including the recent lack of games. We try to cover every commercial ST, STE and Falcon game released, either here in the UK or abroad. Unfortunately, there just aren't as many as there used to be.*



Quality games are a bit thin on the ground, but with a bit of luck things should pick up towards Christmas.

SHAGGY DOG STORY

Would it be possible for you to send another copy of the Between The Covers subscriber's newsletter for the August issue of ST FORMAT (number 73)? Unfortunately, my dog got hold of our copy before my husband had a chance to read it, so half of it is missing.
Tina Meekle, Crumpsall

stf: So, it's not only a darn fine read, but it tastes good too. Yes, Tina, I'll send you my own personal copy of the letter – just promise to feed the dog before it arrives, okay?

A little bird told us the Queen has similar problems with her corgis.

Off the team

I want to know why everyone is ranting on about *Team*. I've read several articles about it over the last couple of months and I must say I was very impressed. For once someone had produced what looked like a very good STE-specific game, something which is quite rare.

I am quite a footie fan – my favourite game is *Kick Off 2*, which I thought could never be surpassed. When I read about *Team*, however, I thought at last I'd found a game that might beat it.

Then I played the demo.

A word that rhymes with white sprang to mind. Okay, the graphics are good, but the sprites are too small, and the scrolling's a bit iffy. The worst thing about *Team*, though, is the fact that it's about as playable as a kick around with half a football. You kick the ball then break the joystick trying to make the sprite to run quickly enough to catch up with it, and you can't tackle without fouling a player. *Team* is totally unplayable and I'm glad I refrained from buying it until I'd seen the demo.

Richard Rowland, Banbury

stf: *Well, I'm pleased you found the demo useful, if only to discover that you don't like the game.*

The demo is a bit hard (we tried to encourage Impact to release an easier version, as we feel it doesn't truly reflect the game's learning curve). That said, you may not have given the game sufficient time – or training, if you like. The controls are very sensitive, and while this tends to result in wild lunging tackles at first, with practise it allows for a whole range of the fine touches that characterise world class football. Team is more akin to real on-the-field football, whereas Kick

PIXEL PAINTING

You know, sometimes we wonder whether we'd be better off printing the mag with potatoes, especially when we discover the careful blending work of a former Pixel Painting winner has disappeared into that black hole called the Linotron.

Still, we're a fairly optimistic bunch so we thought we'd have another go at showing you Ian West's creative masterpiece from issue 69. Oh, and if you're wondering about this month's winner, there isn't one, due to the lack of entries. Shame on you, stop sunbathing and get painting!

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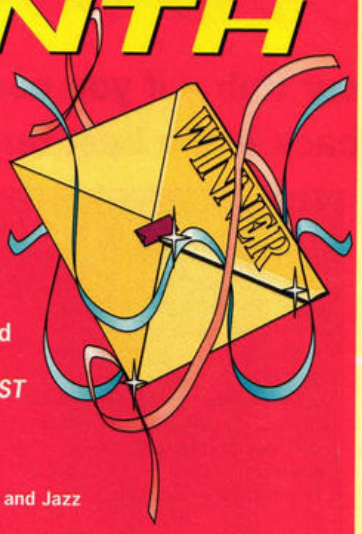
NEXT MONTH



Next month we'll be hosting the *ST FORMAT* PD Gold awards, featuring the top 50 public domain titles of all time. Will your personal favourite make it on to the podium? To find out, grab your tux and dicky bow and join us for a star-studded eight pages, live from the *ST FORMAT* offices.

Plus:

- The latest news on IoMega's Zip and Jazz drives
- Reviews of Titan's Exposé, HiSoft's *Twist 3* and FaST Club's *Imagecopy 4*
- Another packed ST Answers session
- All the latest ST news and views from around the globe...

ST FORMAT **ST FORMAT 75 on sale Tue 12 Sept**

ON THE CARDS

If there's a feature you'd like to see in a coming issue of *ST FORMAT*, please write to: On the Cards, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW and we'll do our best to fit it in.

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Off 2 is an arcade-style game. Perhaps, you prefer that style, but why not give Team *a few weeks and then make up your mind?*

A value judgement

I'm getting sick of people constantly moaning about *ST FORMAT*. I think you're doing a great job.

I've just taken out a subscription recently, and that really is value for money, especially with the free disk. To be honest, I can't understand why the whingers don't do the same – probably because if they did they'd have nothing left to moan about.

Ian Burton, Slough

stf: *Well, exactly. Why would anyone want to walk to the newsagents and spend an extra £1.50 when you can have ST FORMAT, and the free subscribers' disk, delivered to your door every month for £2.75 – or £2.50 if you pay by Direct Debit? It beats the hell out of me...*

DM, Fr, Pta

Could you clarify the costs involved in ordering items from you – it's not clear whether you have to pay the delivery fee twice if you are ordering back issues and reader offers simultaneously.

Also, it's not very clear what method of payment you should use when subscribing from within Europe. Some people I spoke to during an Atari fair would like to subscribe, but were afraid they'd be running a risk just enclosing a cheque.

D Koch, Darmstadt, Germany

stf: *The £4 delivery fee only has to be paid once, even if you're ordering a combination of back issues and reader offers.*

Overseas subscription payments can be made in several ways: you can use your Access or Visa card, a Eurocheque, or any cheque drawn in Sterling.

Space cadet

What a totally insane idea, having to re-format a blank disk and back up your Cover Disk on to it. Do you realise how expensive you have made your magazine for students? We pay a nice big price just to get the mag, and now we have to add another 60p for a blank disk. Sort it out! Grow another braincell to add to the one that's just about to die, and do something about it!

Robert Springett, Borough Green

stf: *Erm, yes. And exactly what did you have in mind? A benefit concert in aid of floppy-deprived students? A transcript of the programs so you can re-enter them if they become corrupted? A cover-mounted disk box with air conditioning and a dehumidifier to prevent damage?*

If you don't want to shell out for a blank disk, or save over one of your old ones, fine, go ahead and use the original Cover Disk, but don't come running to us when it gets corrupted and doesn't work.

Tracer trails

I'd like to know which is the best raytracing program for the Falcon. I know about *InShape* and *Xenomorf*. I've also heard about *APEX Media*, but I don't know whether this is raytracing software. I'd like to get the most powerful package and would appreciate any suggestions you have. Could you also tell me which packages need a maths co-processors?

Piero Desopo, Bologna, Italy

stf: APEX Media *is a wonderful program, but it's not a raytracer. Both* InShape *and* Xenomorf 2 *are very powerful, with* Xenomorf *having a slight edge in ease of use. Another one to look out for is* NeoN 3D, *a very powerful system indeed. Both* InShape *and* NeoN *need a maths co-processor to run, but* Xenomorf *will happily work without one.* NeoN *is being handled by Compo (☎ 01487 773582) and should be released soon. For info on* InShape *and* Xenomorf 2, *give 16/32 Systems a call on 01634 710788. You may also like to know that we'll be covering a range of raytracing techniques in issue 76, so stay tuned.* ***stf***

Send your letters to the editor, Karen Levell, at: Feedback, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon, BA1 2BW or e-mail: klevell@futurenet.co.uk. Letters may be edited for length and clarity.

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STRATEGY GAMES

L124 THE SANDS OF MARS (£3.00) by IZ Software. A sci-fi game that involves you in controlling the events governing the operating of a Martian Mining Corporation facility. As your resources increase, additional installations can be built, but not far away an alien menace lurks resentful of your intrusion into their world. 3D ' Creatovision' view showing terrain, your colony buildings and alien cities. Use your resources to build vehicles and installations. Explore the Martian planet and deal with problems as they arise including meeting quota targets, overcrowding, plague, alien attacks, etc. A deep and challenging game.

L105 CONQUEST 2 (1Mb, £3.00) by Ralph Effemy. The sequel to the immensely popular game CONQUEST. In this newer version you now have no less than five islands to conquer and rule. There are also more elements for you to control than in the earlier game and these include miners, weapon-makers, fishermen, boat-builders, lumberjacks, bakers, cattle, look-outs, knights, etc. This totally absorbing game was an ST FORMAT 'Game of the Month'.

L104 WAR OVER THE REICH (£3.00) by John M. Fowlston. Become the head of Britain's World War II Bomber Command then plan and execute a campaign of raids against twelve German cities. Flak, weather and enemy fighters will take a steady toll of your Lancasters, Halifaxes and Sterlings as the game progresses.

L98 WORLD AT WAR (£3.00) by Seaton Shareware Co-operative. A game of economic and military strategy on a grand scale for one to seven players. The objective is simple - total world domination. But to achieve it you'll need to build, arm and supply your military forces while attempting to capture the territory of your opponents. Played on a world map.

L22 GRAND PRIX MANAGER (£3.00) by S. Fowlston. A simulation game that has you running a Formula One Grand Prix team through as many seasons as you wish. Select from one of 15 recognised teams to run, including McLaren, Ferrari, Benetton etc. Hire and fire your own teams of specialists, including experts in aerodynamics, engines, etc and drivers from a list of 40. Test your cars to get the best from modifications and fine tune them to perfection, then race them against the other teams and drivers in a full season of Grand Prix races. Both half meg and one meg versions of the program are available.

L79 DARKLYTE II (1Mb, £3.00) by Howard Tilley. The sequel to the successful 'Darklyte' program on L.A.P.D disk no. G.288. This one is bigger and better with nearly double the graphics, over 8 times more audio and double the equipment! It is a sci-fi space/strategy game in which you must destroy the Darklyte forces. Reminiscent of the 'Space Crusade' game.

L118 THEY SOLD SEVERAL (£3.00) by Ben Weston. The five games on the disk are: THE UNMAGNIFICENT 15, a simple Wild West shoot'em up game; CLAN, a Hamurabi type game where you must prove yourself a capable leader and help your clan grow and prosper; QUEST KNIGHT, a fantasy game played in plan perspective - recover the fabled 'Rose of Questoria'; LOGIC PROBLEMS, five challenging puzzles with electronic tagging to aid record keeping; LOGIC PROBLEMS II, more of the same.

L42 OUTWORLD (£2.50) by Glyn Carey. An arcade/strategy game in which you take control of a space colony with the sole task of keeping at least one member of the colony alive until it can escape into orbit. Crew die slowly if they run out of water, oxygen or food and so fresh supplies must be continually shipped in. Add to this the ever present threat of alien vessels launching attacks on vital areas of the colony and you'll soon find your work cut out.

L53 HOT DOG (£2.50) by A.A. Covell. A game of greyhound racing for 1 to 9 players which in practice gets more and more fun the more players are involved. Over 400 dogs permanently stored on disk. Study the odds, select your dog, make your bet, then watch them run.

L59 ARTHUR OF THE BRITONS (1Mb £3.00) by Ralph Effemey. A strategy game with arcade sequences in which you take control of King Arthur and his army of ancient Britons.

L60 CONQUEST (1Mb £3.00) by Ralph Effemey. A 'God' game in which your task is simply to survive for one year in the land of your choice. To do this you will need to rule wisely, strongly and efficiently. If you survive for the full year you'll be given the name of the next land you must conquer

ARCADE GAMES

L119 ASTEROIDIA (STE. £6.00) by Dave Munsie. The classic game 'Asteroids' revisited. This version features 3D rendered asteroids and a 360 degree scrolling playfield. It has good sound effects and digitised music. It is an arcade style game that requires little alien strategy but provides hours of fun. You are flying around in space trying to destroy all the asteroids that are heading towards your home planet. You'll also have to contend with little alien thingys that want to destroy your ship!

L120 ASTEROIDIA (STFM, £7.00) The STFM version of the above

L121 FRANTICK (STE, £7.50) by Dave Munsie. Welcome brave warrior to the kinetic combat simulator Frantick. Here is where loyal soldiers sharpen their skills at operating the Empire's secret weapon. To facilitate training and boost morale, bombs and increased blaster power are available to the quick. Ample bonuses are supplied for those with a taste of higher gratification.

L122 FRANTICK (STFM £7.50) The STFM version of the above.

L123 SQUARE OFF (£7.50) by Dave Munsie. Falling block puzzle game in the style of the classic 'Tetris'. This time though there is a melodic digitised soundtrack, fitting sound effects and a modern graphic display.

L93 PROJECT PURIFY (£3.00) by Mikael Lundberg. Purchase equipment for your spacecraft then attempt to clear twenty sectors of space debris 'Asteroids' style

L87 STORM 94 (1Mb STE, £3.00) As a member of an elite group of space marines you are designated to perform a one man reconnaissance mission of the space vessel LGH590 with which contact was lost 27 hours ago. It is expected that this will be mankind's first contact with non-human intelligent lifeforms and you are advised to proceed with extreme caution. On board the vessel you soon realise that the defective lift system is only working one way - downwards.. and there are 31 decks to make your way through before you can escape! Alien lifeforms abound on the ship which you traverse using an overhead view, 'Gauntlet' style. This is a serious blasting experience with 8 way scrolling, 30 on-screen sprites, sampled sound, etc.

L91 STORM 94 (1Mb, STFM, £3.00) As L87 above but for the STFM

L86 FLUFFIES (1Mb, £3.00) by Howard Tilley. A platform game across many levels as you guide a blue fluffy creature in an attempt to rescue his girlfriend who has gotten lost in one of the many castles and forests of Fluffyland. Careful though as there are traps and pitfalls along the way. Similar to the classic 'Rick Dangerous'

ARCADE GAMES

L80 MUNCHKIN (£2.50) by Digital Dreams. The perpetually popular Pacman pastime!

L116 STREETS (£3.00) by 999 Software. Drive your armed motor-car around the streets of the city collecting diamonds so carelessly dropped by fleeing gangsters. Use your on-board cannon to blast your way through obstructions whilst avoiding mines and mobster cars. There are five areas of the city in all to navigate and each is more dangerous than the last.

L117 FISH TANK (£3.00) by 999 Software. A game for younger players in which they take on the role of a little green fish in a fish tank populated by many larger, carnivorous fishes and other aquatic creatures. You must collect the poisonous food from the surface of the tank and drop it in the path of the other tank inhabitants to dispose of them. Keep your eye on the larger fishes though because they prefer the taste of little green fishes (like you) to the food you're offering!

L70 CHRONIC INVADERS (£2.50) by Digital Dreams. The 'Space Invaders' return in this reworking of the all time classic computer game.

L61 3D ASTEROIDS (1Mb £2.50) by Ralph Effemey. Based on the classic 'Asteroids' game - but in 3D! Your task, using the latest spacecraft fitted with defence shields, is to clear the space-ways of junk and asteroids. Asteroids and other items tumble towards you and must be destroyed by your lasers. Unfortunately though, there are also a few space pirates who'll attempt to stop you in your task. The full STOS source code for the game is also included on the disk.

ADVENTURE & ROLE PLAYING GAMES

L125 PATHS OF GLORY (£3.00) by IZ Software. A sword and sorcery role-playing game. Your task is to fulfill various quests by exploring dungeons, gathering treasure, slaying monsters and rescuing unfortunates in true fantasy adventure style. The game has a 3D isometric view of dungeon rooms showing all objects, characters and monsters in detail. It has multi character classes and hordes of marauding monsters. Three classes of spells (magical, priestly and elven). Locked and magical doors, traps and trap-doors, piles of treasure and magical items guarded by fierce monsters.

L115 DEMON II (1Mb, £3.00) by Howard Tilley. A fantasy adventure game with an overhead view. Wander around towns, sewers, etc. Visit buildings and speak to the residents as you seek adventure. Choose from six different character classes: Warrior, Assassin, Mage, Thief, Oracle and Medic. Detailed point and click interface.

L114 TIME MACHINE (£3.00) by PhantomSoft. A classy text based adventure with over 100 locations and over 40 excellent graphic screens. The game involves you travelling through time to collect six crystals needed to destroy a threat against present day Earth. The game has a comprehensive verb and noun list which should all but abolish your need to try and find the exact word to describe what you want to do.

L112 CRAGHAVEN (£2.50) An adventure in a fantasy land. After coming ashore in your rowing boat at the harbour town of Eyntown you set about exploring your new surroundings. It isn't long before you stumble across someone who sets you a mission that takes you to the desolate heart of the island and the castle of Craghaven.

L97 STONE COLD SOBER (£4.00) by Organised Chaos. A traditional adventure game but with a point and click interface.

L69 BIO-HAZARD (1Mb £3.00) by L.J. Greenhalgh. A 'Dungeonmaster/Captive' style adventure set onboard a star-cruiser in the depths of outer space. From a first person perspective there are corridors to explore, puzzles to solve, aliens to blast...

L21 DEAD OR ALIVE...(£3.00) A large, complex and humorous text adventure game from Organised Chaos. Taking a short cut home you call into a strange shop where the owner shows you a strange crystal. It renders you unconscious and when you come-to the shop has disappeared and your memory is blank!

L31 THE CURSE OF AZRIEL (2 disks, £4.00) by A.A. Covell. A superb graphic fantasy role playing/trading game. You start the game as a new captain of a merchant ship at anchor just outside the port of Aron's Bay. Your first ship is just a coastal vessel and unsuited to the rigours of travel across the vast oceans, but make a profit from your trading around the coastal ports and you'll soon be able to buy yourself and your men a larger, ocean-going vessel. Recruit and train men in the cities you visit. Visit inns, armourers, town mayors, fight pirates etc. Most of all though, you must try and restore law and order to the world of Lord Azriel (Now FALCON compatible!)

L41 MURDER ON THE ORION EXPRESS (£3.00) by Organised Chaos Software. A murder mystery game with an almost infinite variety of solutions, set on board a futuristic space-cruiser. You need to question other persons on the vessel, passengers and crew, to check out their alibis. If you take too long in tracking down the killer more and more murders take place eventually culminating in your own! The game has a graphic interface and is mouse driven.

L50 DEMON (£3.00) by Howard Tilley. Trapped in a stone cell your first task is to escape before the resident demon gets back. 3D view, monsters, pits, teleports, secret walls, magic system. It's got the lot!

PUZZLES

L110 QUICK FLIP (£3.00) by Nice Bytes. A mind-bending tile flipping game. Flip the tiles on a 4 x 4 grid in any of four directions to try and gain the maximum score. Bonus squares, magic squares and a timer all add to the suspense.

L106 CRAZY LETTERS (1Mb, £3.00) by Dunces Cap. A word search game in which you try and find a seven letter word hidden behind a grid of squares (a variation of Hangman). Also on the disk is a program to assist in the selection of UK lottery numbers.

L102 DCS COMPILATION #4 (£3.00). The fourth compilation disk from Dunces Cap Software. On this disk are BRAIN DAMAGE, eight very different games and fifteen stages to test your brain to the limit. SHAPES, make shapes from 16 different pieces thrown down at random on the monitor screen. LINK, join together the top left hand corner of the monitor screen with the bottom right hand corner by forming a chain from 16 playing pieces. QUIZICAL, a multi-choice question and answer game.

PUZZLES

L101 DCS COMPILATION #3 (£3.00). The third compilation disk of games from Dunces Cap Software. On this disk are: OUTRAGEOUS FORTUNE, a collection of logic and maths challenges to set your mind spinning. MATCH MAKER 2, four different games of matching symbols on hidden cards. FRAME OF MIND, a gambling game with five levels of play, including 'Wheel of Fate', 'Gambler', 'Gridstar', Pontoon' and 'Chopper'. CRYPTOGRAM, a two player game based loosely on the TV program 'Countdown'.

L100 DCS COMPILATION #2 (£3.00). The second compilation of games from Dunces Cap Software. On this disk are: QUEST FOR KNOWLEDGE (1Mb), you must seek out 12 hidden icons from mazes five screens wide and eight screens deep, then answer questions to claim them. REBOUND, a bat and ball game requiring determination, skill, stamina and patience. GALACTIC FRUITBOWL, a combination of two of your favourite arcade machines, the fruit machine and the trivia quiz. GREY MATTER, a word game with hundreds of everyday words to guess.

L99 DCS COMPILATION #1 (£3.00). The first compilation of games from Dunces Cap Software. On this disk are: ACECHASE, a gambling program in which you must find the ace from seven face down playing cards. THE WIZ, a fun program comprised of ten tests. MINDLOCK, a quiz program on general knowledge, mathematics and the English language. MATCHMAKER, match up hidden symbols from a hidden grid of squares. There are six levels of play.

L96 TILES IN SPACE (£3.00) by Inspiration. A computer version of the sliding tile puzzle game. i.e. Slide the tiles to make a picture.

L94 GRID MANIA (£3.00) by Nice Bytes. A word search game for 1 or 2 players. Each player attempts to find 15 words on grids of 324 letters. The game includes 'bonus words', 'magic scoring letters' and other extra features

L92 BAMBOOZLE (£3.00) by Nice Bytes. A puzzle game where you must turn all the symbols on a 25 square grid to higher scoring ones.

L88 BIRDS OF TANKS (£3.00) by Esa Myllyla. Guide your tank via an overhead view through a battlefield, destroying hidden mines with your minesweeper. An avoid and collect game.

L85 ZUFFERS (£3.00) by Terence Pearson. A puzzle game involving a race of microscopic creatures (the Zuffers) that you must rescue after a giant meteor has crashed into their planet. 30 levels of action as you attempt to guide them back to the safety of their shelters.

L84 WORD WIZARD (£3.00) by Nice Bytes. A one or two player word guessing game with different levels of difficulty.

L83 ZIGGY (£3.00) by Nice Bytes. A puzzle game that puts you in the role of 'Ziggy', an extra-terrestrial explorer faced with the problem of solving the 'Globes' puzzle set for him by the Lords of Thorak. The idea is to click on a globe in a 5 x 5 grid which will then cause another globe elsewhere on the grid to change in colour. Success in eventually turning the globes into diamonds helps towards the solution.

L75 FREAKED OUT (£3.00) by Chris Sharp. A joystick controlled puzzle game that sees you negotiating various screens in search of points and the quickest way to escape.

L74 NICE BYTES MEGA-PACK #1 (£3.00) Four puzzle games on one disk. ATOMOMIX, place atoms of varying energies onto a grid whilst attempting to obtain the highest energy possible. Care though, too much energy and they'll all explode. PURE LOGIC, a game based on Boolean logic. REGA, a tile flipping game on a 5 x 5 grid. Convert all the tiles to the same colour. LOGICA A three phase logic/puzzle game.

L66 HEARTBREAK (£3.00) by Steven Rozwadowski. An infuriating and highly addictive puzzle game played on a 7 x 7 grid where the challenge is to place assorted blocks into the grid to form lines of seven. Each tile has its own picture which offers points, multipliers, bombs, magnets, etc., all of which affect the other tiles. It's a sort of 'Tetris' game with an overhead view and it's incredibly addictive. You have been warned!

L11 PI SQUARED (£2.50) A puzzle game by Tony Martin. Starting with a square of random symbols you are challenged to turn them all to pi symbols within the given time. Increasing levels of difficulty.

L13 TWO LETTER COMBO (£2.50) Game Maker Kit #1 by Tony Martin. If you have a printer linked to your computer this program will allow you to print out and make the cards for your own word game. The aim of the game is simply to make the longest words you can think of from combinations of two letters.

L14 DICEY (£2.50) A challenging dice game by Tony Martin in the style of the classic 'Yahtzee'.

L40 GRIDWORD (£2.50) by Nice Bytes. A word game in which you attempt to make the longest word possible from a 16 x 16 grid of letters. The game has a wide range of difficulty settings.

L52 ENERGETIX (£3.00) by Nice Bytes. The year is 2070, ten years after the worst nuclear reactor explosion in history. Now the powers-that-be are pinning their hopes on a new source of power - the Active Fusion Resonance reactor. You are the test engineer given the job of proving the viability of this new reactor. However, first you must be sure of the exact procedures needed to run such a reactor... This is a puzzle game that challenges you to find those exact procedures. 1 or 2 players.

L58 NICE BYTES #1 (£2.50) A compilation of two programs by Nice Bytes from our Licenceware range. They are GRIDWORD: A word game for up to 4 players with various levels and options which enable players of varying abilities to play at their own level. REGA: A tile-flipping strategy game based on a 5 x 5 grid and including many extra features.

AUTHORS

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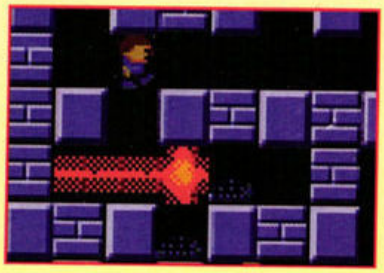

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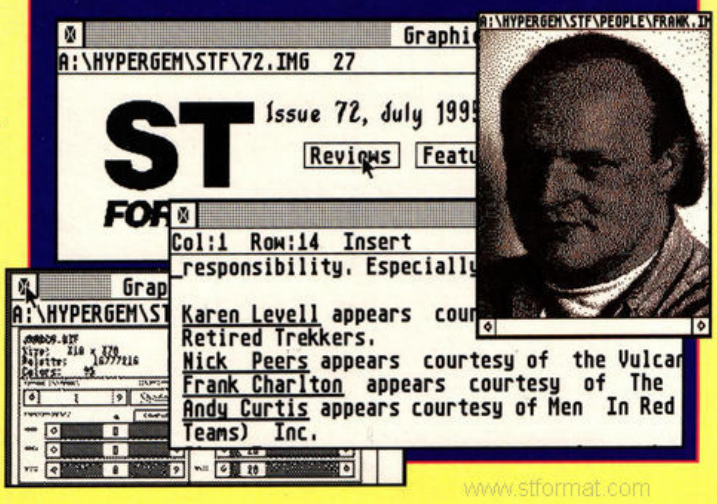

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