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ST FORMAT

ISSUE 56 | MARCH 1994 | £3.50

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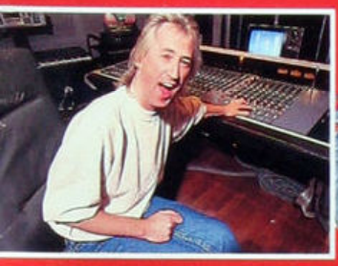

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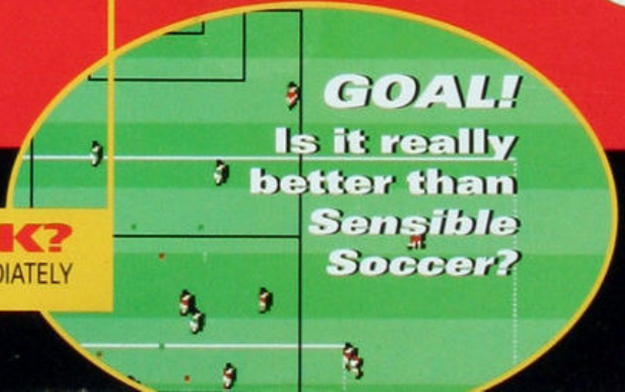

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  Exactly why the faces at Atari are all smiles
- **REVIEW: RAIDEN**
  What makes this the best version of the classic arcade game?
- **REVIEW: CRESCENT GALAXY**
  Meet Trevor McFur in this challenging shoot-'em-up
- **PRESENTING... IMAGITEC**
  Creators of some of the first Jaguar games

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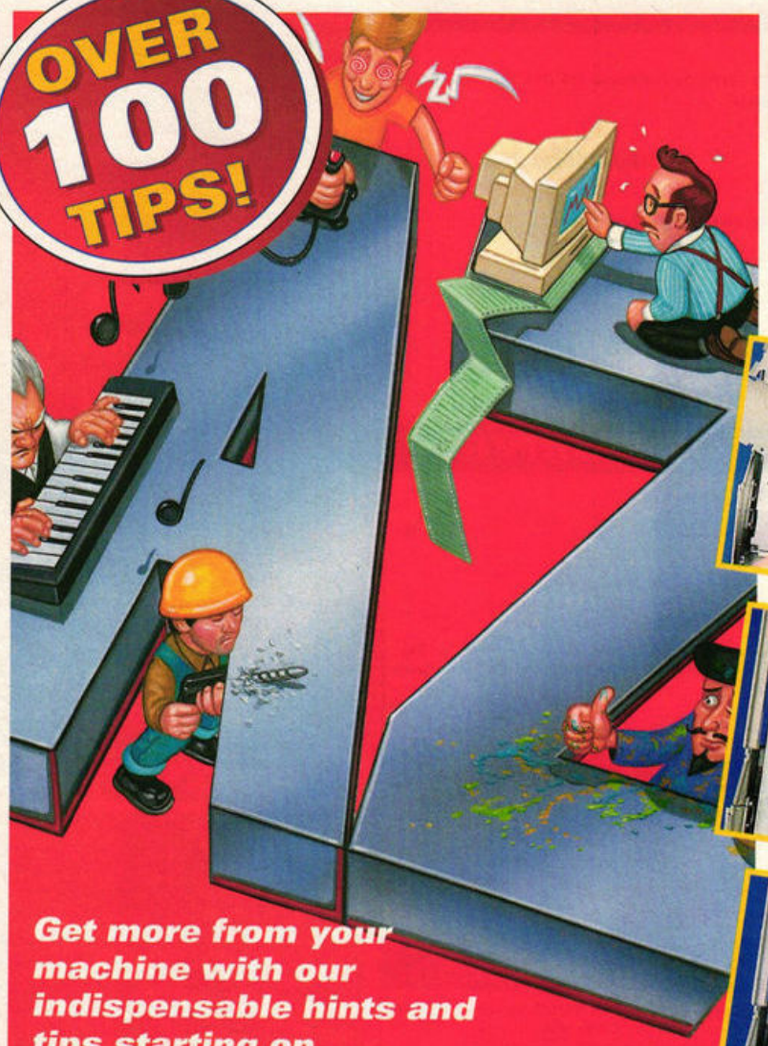
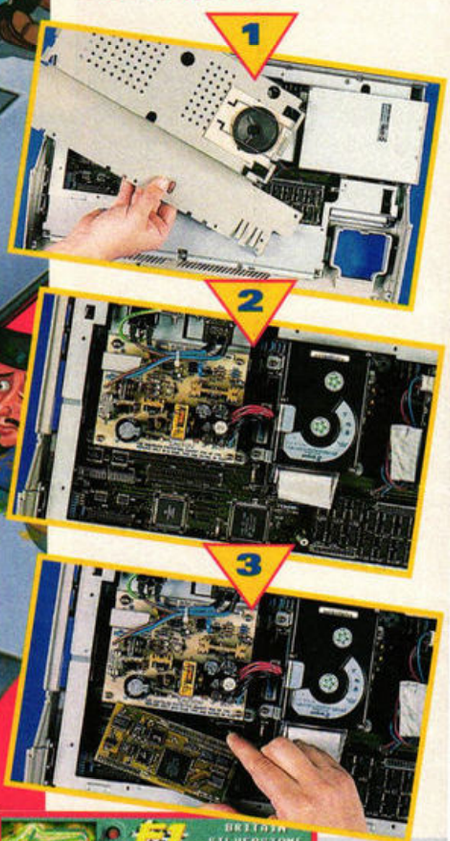


Get more from your machine with our indispensable hints and tips starting on Page 17

FALCON SPEED

Turn your Falcon into a 286 PC in a few simple steps...
See page 38



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ABC Jan – July 1993
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(fax 0225 337530)
Group Production Manager Judith Middleton
Production Coordinator Laurie Van Huss
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Production Controller Claire Thomas
Production Control Assistant Suzannah Angelo-Sparling
Paper Controller Fiona Deane
Printed in the UK by Garnett Dickinson Print Ltd of Rotherham
Publisher Colin Campbell
Managing Director Greg Ingham
Circulation Manager Jon Bickley (☎ 0225 442244)

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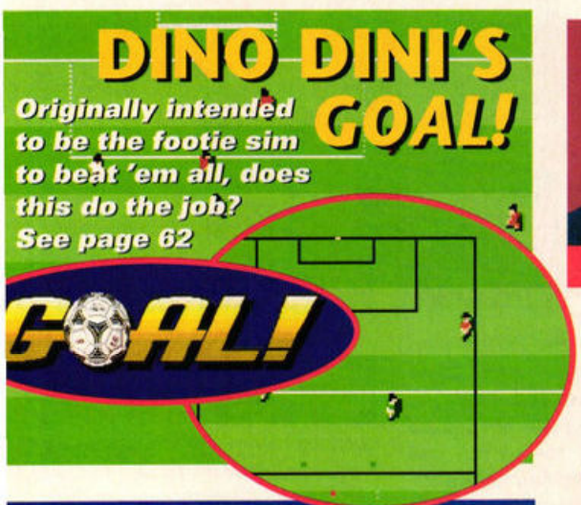
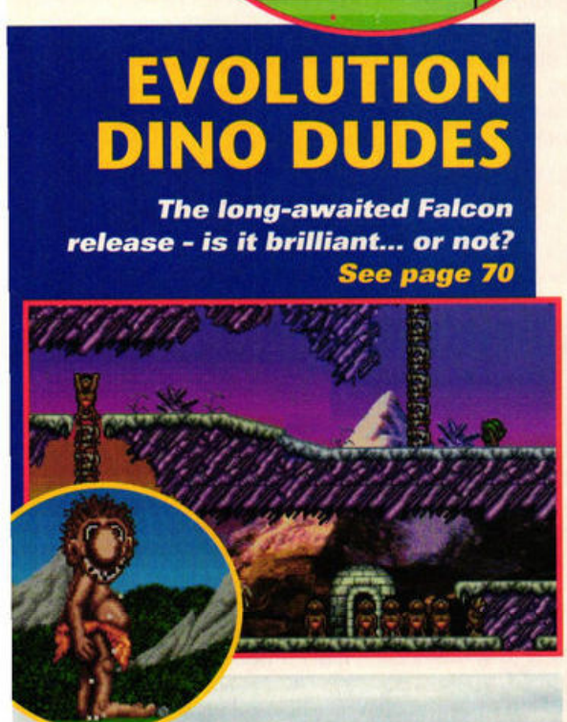
ST FORMAT ■ ISSUE 56 ■ MARCH 1994





TURN TO PAGE 10 FOR YOUR COVER DISK GUIDES

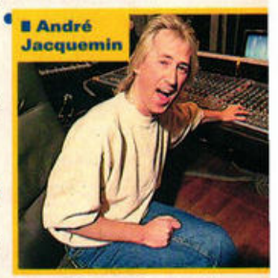
Paula Richards, Editor

A WORD FROM THE EDITOR

The best news we've had this month is that of the excellent sales of the Falcon, which seems largely to have happened as a result of the release of *Cubase Audio*. Just goes to show the loyalty of professional musicians towards Atari and their machines. Check out our special review of the program by Monty Python producer André Jacquemin, a man who's had over 23 years of experience in the music biz and is committed to using technology to get the best results. Check that out on page 88. The other massively excellent news, of course, is that the Jaguar seems to have gone down a storm all over the States, winning a selection of awards at the Las Vegas CES. Check out the Jaguar news on page 46.

Starting on page 17 we've got this huge seven page feature with over 100 hints and tips for using every bit of your ST – you're guaranteed to learn something new from the tasty bite-sized chunks we're giving you.

This month we've also got reviews of the long awaited *Goal!* (page 62) and *Evolution Dino Dudes* for the Falcon (page 70), so there's something to appeal to everyone. Great stuff.


André Jacquemin

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CUBASE AUDIO BOOSTS FALCON

The release of the professional quality music sequencer *Cubase Audio* from Steinberg has increased Atari Falcon sales by a ratio of up to five to one, according to close observers of how the machine is selling.

Retailer Paul Wiffen of Music Village commented: "*Cubase Audio* has helped sales of the Falcon immensely. Since the program was released we've sold about five times as many complete systems as the total number of individual machines we had sold before."

Music Village are currently supplying between 15 and 20 complete systems a month – a complete system being at least a 4MByte Falcon030, *Cubase Audio* and a 240MByte SCSI drive. "We sell the systems mainly to people who want the software," Paul continues, "and happen to need a Falcon to run it on." Although the £2,000 price tag for the system might seem high, it is comparatively small when you look at the other options available which start at around ten times that price.

"The release of *Cubase Audio* has increased Falcon sales by up to 5:1"

Although the Falcon has been reasonably popular among musicians to date, sales of the machine have been very disappointing compared to the expected sales figures announced by Atari in the middle of last year. The last available figures from Atari on Falcon sales (from the end of August 1993) estimate they have sold around 12,500 machines. Because of this, rumours have apparently been circulating that Atari are to drop the Falcon altogether. Atari stress that these rumours are unfounded, however, and with the release of *Cubase Audio* this would seem even less likely. Atari's Public Relations manager Peter Walker confirmed this with his remark to the effect that Steinberg are doing wonders for Falcon sales which are now reaching relatively high levels.

■ Joint ads with Atari and Harman probably helped sales.

Paul Wiffen is prepared for all eventualities, however: "If Atari stopped making Falcons I would buy as many of them as possible, because I know I can sell them. For a year or two, I can't see anything coming along for the same price."

■ For *ST FORMAT's* definitive review of *Cubase Audio* from professional composer and producer André Jacquemin, turn to page 88.

Games sales up over Christmas

ST games publishers are jubilant about the figures of their ST games over the Christmas period. There were only a handful of new full-price titles available, but together with the budget releases from The Hit Squad, GBH and Kixx XL, it seems Christmas 1993 was the best period of sales for some time.

Adrian Cale of Gametek, publishers of *Frontier,* said: "We're exceptionally pleased. Compared with the Amiga and PC it *[Frontier]* hasn't sold bucketloads, but it has sold well above the minimum needed to keep its position at number one in the ST chart."

Frontier is an exceptional case, though – when the ST version was released, it crept in to number seven in the all-formats Gallup chart, which gives an indication of the high number of ST copies sold.

US Gold also report excellent sales of ST budget games over the Christmas period. "The range has gone really, really well," enthused Bridgett Hirst of US Gold. "We've had more releases this year than last, so the Christmas period was very good." US Gold have a line-up of 60 titles for 1994, partly made up from the Sierra On-Line catalogue released through Kixx XL – so 1994 could be even more successful.

■ ***Xenon 2*** **and** ***Speedball*** **are just a couple of the top-selling ST games of the Christmas period.**

NEW SOFTWARE HOUSE TO SPECIALISE IN DEVELOPING ATARI SOFTWARE

Hey! Watch out! There's a new software house in town – and they're specialising in producing games for the Atari range of machines.

As Chris Dillon, Managing Director of the company, Caspian Software, explains: "We don't believe you can fully exploit the potential of a machine unless you concentrate on it specifically. We are different to other software houses because we are committed to producing the highest quality entertainment software just for the Atari range – no conversions, no ports, no compromises. And we are also the first software house to design games to use the features of the STE and Falcon to the full."

Despite their promises of BLiTTER enhanced graphics, DMA sound, compatibility with Atari's joypad and smooth hardware scrolling, as well as enhancements if you use your games from a hard drive or have extra memory, you're only going to see joypad compatibility with their first release, *Rock 'n' Roll Clams,* due out within the next couple of months. Chris describes it as a cutesy platform game but is at pains to point out that it's not really the sort of game they want to concentrate on, especially since it isn't enhanced for the STE, although it is compatible with the Falcon. They're more interested in bringing PC-style games to the ST

STES DECLARED A SELL-OUT

There are more STEs to come so don't despair if you can't find one immediately.

STEs were in such demand over Christmas that many retailers sold their entire stocks in December and now have a backlog of orders with Atari for new supplies. This effectively foils claims that the ST is a dead machine which no-one would dream of buying these days.

The demand for the STE surprised many people considering the way that sales of the machine have dropped off over the last year; Atari reckon they sold about 10,000 STEs up to Christmas 1993, clearing out UK stocks. Retailers have between 1,000 and 3,000 STEs on order from Atari, who say that stocks are to arrive in February.

Brian Cobley, general manager of First Computer Centre, told us that they ran out of STs early in November and have been unable to get any more in stock: "It's a great pity because there has been a lot interest in the STE this Christmas, we could have sold a lot more if we could have got some stocks in." Andy Leaning of SDL,also suggested they were unable to get stock in for Christmas leaving potential customers disappointed. Darryl Still of Atari was keen to emphasise the company's continued support of the STE, explaining that they would supply anyone who wanted any of their machines. He puts the demand down to the competitive price of the machine, and confesses that perhaps Atari failed to notice the interest in the machine because their minds were "on other things."

How they're actually going to fulfill the demand, however, is a matter of some debate. Darryl Still reckons they're going to replace overseas machines with UK TOSs, whereas PR Manager Peter Walker maintains Atari have gone back into production of STEs in Taiwan.

Practicalities aside, if you're still after an STE you should be able to get hold of one by the end of February.

ATARI SUPPORT FALCON IN PUBLIC. AT LAST

Atari are sponsoring a feature demonstrating D2D recording using *Cubase Audio* at this year's MIDI, Electronic Music and Recording Show (MEMS). The demonstration, running throughout all three days of the show, is arranged in conjunction with Compo Software. Neal O'Nions told *ST FORMAT*: "We've got a pretty large stand, so there's plenty of space to show off Atari's gear. We've put together several music packs, aimed at musicians who want to buy a whole setup including MIDI leads and stuff, and we'll be selling them at prices which music shops won't believe."

Sponsored by *Making Music* magazine, MEMS '94 is aimed at both professional musicians and beginners, offering seminars which try to demystify MIDI alongside demonstrations of the latest and best MIDI music gear.

Called the MIDI Music Show for the past five years, MEMS is being touted as the premier MIDI event. "It's the only show which is aimed at electronic music," said Julie Collins of Westminster Exhibitions, the show's organisers, "whereas the British Music Fair is aimed at all areas of music. We always aim the show at the forefront of technology. Whatever's exciting happening at NAM in the States, and the Frankfurt show, the exhibitors bring to our show."

As well as the Atari/Compo combo, other seminars include an demonstration of *Cubase Audio*, and a demo by Yamaha of their CBX-D5 Hard Disk Recorder in conjunction with *Cubase Audio*. Westminster Exhibitions are the company behind last year's disastrous Christmas International Computer Show, so let's hope they make a success of MEMS '94. It takes place at Wembley Conference Centre during the weekend of 22 – 24 April 1994. Tickets are £5 in advance from Westminster Exhibitions call ☎ 0222 512128.

SNIPPETS

More issues than ever

ST FORMAT is to publish an extra magazine every year, so instead of 12 issues there are now going to be a massive 13. *STF*'s publisher Colin Campbell claims he's made the decision for purely magnanimous reasons: "Just think, readers are going to get even more in-depth news coverage, more features, more Cover Disks and more useful hints and tips. And all for the same amount of money if they've subscribed." The team are naturally thrilled to have more work to do and would encourage you to subscribe – details are on page 58.

Calamus bargains

JCA Europe have slashed the price of their *Calamus* packages and are offering even more reductions if you send them any other DTP master disk. The new price for *Calamus 1.09n* is £89, down from £99, *Calamus S* drops by £36 to £299 and *SL* tumbles £76 to £499. The extra discounts are £10 for *Calamus 1.09n* and £50 off the price of *Calamus S* or *SL*, the discount offer is only valid until Saturday 30 April. Call JCA Europe on ☎ 0734 452416.

"Oops" indeed

We incorrectly stated in the *AtariWorks* feature last issue that the program uses the <Control> key for keyboard shortcuts contrary to the official Atari developers' documentation. In fact, Atari's style guide for programming the Falcon states that the <Control> key should be used, and not the <Alternate> key as we printed last month. Apologies to Hisoft. Grovel grovel.

Buggy DSPs? Not

Following last month's news story about the apparently buggy DSPs in the Falcon, Atari would like to point out that in fact the DSPs are not faulty. They do, however, agree that there are some software incompatibility problems between *Cubase Audio* and TOS v4.1. They comment: "It is more easily fixable by a small hardware modification and Atari, together with Steinberg, have authorised System Sokutions to make this amendment without infringing warranty." Well, that's their story, but it still seems strange to us that it's easier to fiddle about with the hardware than to produce a software patch.

Self-indulgent tale of woe

As *ST FORMAT* struggles to meet its deadline, tragedy struck our Falcon's hard drive partition D, it contains programs to preview and pictures we were going to use to illustrate our features. We were not happy, especially since partition C still had an extra MByte of space and we weren't using Atari's hard drive software anyway. We phoned Atari's technical support line who appeared unable to help us or shed any light on the problem. So if you have any ideas about how we can avoid such a disaster in the future, please write to Clive Parker at the usual address.

TEST OF ENDURANCE

A game of human survival and endurance comes to the ST courtesy of Silmarils, creators of the excellent *Ishar* series of adventures.

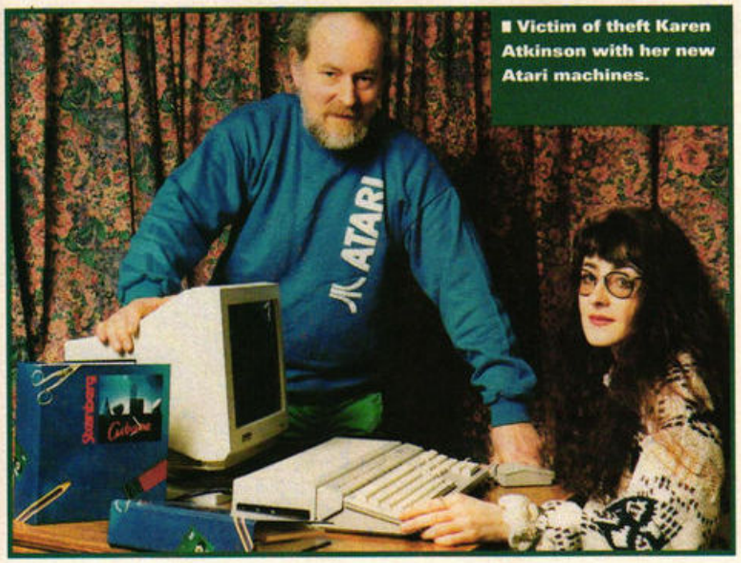
Robinson's Requiem puts you on a distant planet, where you are held prisoner by horrid monsters and aliens. Although your original mission was to investigate the planet, you find yourself having to escape from an alien prison, and then survive in a dense and hostile jungle using only your wits and a small survival kit.

Silmarils reckon they've built an entire eco-system into the game, so you have to battle against all manner of ills: disease, sunstroke, food poisoning and malaria. Also, you have to keep an eye on your own health, and even perform surgery on yourself if necessary. It all sounds rather disgusting, but Silmarils promise that it's all in the name of fun. Contact Daze Marketing on ☎ 071 328 2762 for further details, and watch out for a full review soon in *ST FORMAT*.

***Robinson's Requiem*, a game of survival on an alien planet. Battle the unfriendly aliens, and look after yourself using tools provided. Now please wash your hands.**

range of machines – their first game to exploit the STE and Falcon is to be a space shoot-'em-up which uses the BLiTTER chip. Expect to see that much later this year. For more information on Caspian Software and their games, get in touch with Chris Dillon on ☎ 071 263 8584.

ATARI SHOW ORGANISORS TO THE RESCUE



■ Victim of theft Karen Atkinson with her new Atari machines.

Compo Software, CGS and Titan Designs, the organisors of the recent Atari shows, donated over £1,000 worth of ST gear to the victim of a computer theft.

When music student Karen Atkinson had her entire ST setup, keyboards and sequencer stolen from her home in Newcastle on Boxing Day, she was rather fed up, to say the least, particularly since she was in the middle of a series of 25 radiotherapy sessions to treat her case of cancer of the womb. When the organisors of the Atari Shows heard about her plight they offered her a brand new setup including an ST, a monitor, *Cubase* and a Roland JV 30 keyboard, which she was happy to accept so now she can make music again to her heart's content.

Atari Shows announced for this year include a small tour of the north: the first's at Newcastle's Eldon Leisure Centre on Saturday 16 April from 10am – 5pm and the second's at Glasgow's Central Hotel, Gordon St, Glasgow on Sunday 17 April from 10am – 5pm.

RAIDED? NOT US!

New Age PDL has fallen foul of the copyright laws concerning sound sampling, according to industry rumours.

They were visited after a complaint was made concerning their disks. This follows the closure of the South West Software Library following a raid and a lengthy legal case in 1992.

Caroline Price of New Age was contacted by the Mechanical Copyright Protection Society (MCPS) who are concerned about PD disks containing sampled sound files of songs, in effect complete songs copied from CD using a sound sampler. After inspecting some of the disks they have been removed from the New Age catalogue at the request of the MCPS. Some other disks containing still images digitised from video tape have also been removed from sale.

Caroline commented: "We would like to stress that we have not closed down and we are carrying on our business as usual; we have not been raided. Some disks have been withdrawn from sale and we apologise for any inconvenience caused to any of our customers who have ordered any of these disks. No other action is being taken against us."

It is the actual act of sampling music from CD or tape without prior permission from the copyright holder that is illegal. The MCPS told us that, before it is legal to sample music from records to use in your own compositions, you must get permission from the owners of the copyrights of the piece, these are the sound recording copyright, normally owned by the record company, the work copyright, normally owned by the publisher of the music and the moral right, normally owned by the composer or author of the music.

Even when you have permisson to sample, you may still have to pay royalties to any or all of the owners of the various rights.

It's technically illegal to sample sound from any copyright source – CDs, tapes or videos – for your own use, but as long as the samples are not distributed or sold for profit, then the MCPS say that it is unlikely that they would ever take action against an individual for breach of copyright unless there is a specific complaint made.

The MCPS are on ☎ 081 769 4400 and New Age PDL are on ☎ 0702 526435.

PD LIBRARY FOR SALE

If you want to run your own PD library then now's your chance, Arrow PD are closing down and are selling off their entire catalogue of disks.

With over 450 disks in its catalogue, Arrow PDL have a wide selection of popular PD software including exclusive distribution rights to the *Ultimate Collection*. The owner, Andrew Down, is closing the library because he can no longer devote enough time to running it and would rather sell it than close it down. Andrew is looking for offers of around £400 for the collection of disks – an ST is not included in the price – and some blank disks and support software. All new orders received will be honoured or passed on to the new owner. If you're interested then write to Arrow PD, 6 Kents Orchard, Perry Street, South Chard, Somerset TA20 2QB.

PREVIEW: MUSICOM 2

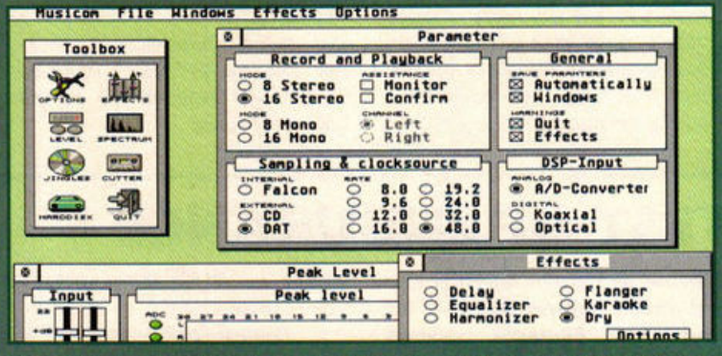
Compo's new version of *Musicom* for the Falcon, snappily called *Musicom 2*, is almost totally different from the original direct-to-disk recording program.

Neil O'Nions of Compo said *"Musicom 2* provides powerful digital audio for the non-professional."

The original version of *Musicom* is a simple to use program with a couple of main option screens and some basic DSP effect functions. In contrast, the new version has a full range of drop down menus and an on-screen set of toolbox icons that triggers the main functions.

A full range of sampling frequencies are available using either the Falcon's internal hardware as a clock source or external CD and DAT clocks can be input through the DSP port. Each clock source supplies a different range of sampling frequencies, the Falcon's own top rate is 49.2KHz, externally clocked DAT samples at 48KHz and CD samples at 44.1KHz. The original DSP effects module is still present along with ability to switch between sampling stereo, mono, 16-bit and 8-bit modes. A much improved hard drive management tool has been added along with full sample editing, on-screen signal levels, spectrum analyser and a jingle player enabling different samples to be strung together on a playlist. The pattern editor is a more powerful playback feature than the jingle player, enabling total control over sequencing of samples in any order. *Musicom 2* is priced at £79, but if you buy the first version of *Musicom* – which only costs you £49 – you get a voucher for a free upgrade to *Musicom 2*. What a bargain.

Call Compo on ☎ 0480 891819.



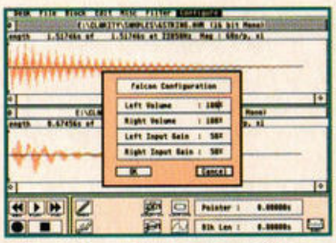
■ The new improved *Musicom* provides all the tools you need for direct to disk recording using your Falcon.

PREVIEW: CLARITY FALCON

Get your Falcon groovin' with Clarity Falcon, a stereo sound sample editor that uses the computer's built-in sampling hardware to perform direct-to-disk recording.

Essentially it's the updated and improved version of Microdeal's Replay 16 and Replay Stereo, comprising software, a hardware clock card and a phono to stereo-jack adaptor lead. It's the first sampling system developed by AVR that doesn't use the company's own external hardware to perform the sampling. This has given them much more leeway to concentrate on developing the software side of the system. If you're familiar with any of the AVR sample editors used on the ST you're going to feel right at home as soon as you run Clarity, the main screen is virtually identical to that of Replay 16. Everything works in exactly the same way so if you've moved up from the ST to the Falcon you can get straight to work.

"It looks as though Microdeal are onto another winner"



The Falcon Config screen is like the STE screen in Replay 16.

Clarity consists of two different versions of the editing software. Superficially they both look exactly the same, the difference is that one version of the program uses the Falcon's memory to store samples that it creates while the other version is the D2D variant of the program.

While other D2D systems for the Falcon have all followed each other down the path of DSP special effects, Clarity has concentrated on more functional sampling functions such as filters. The DSP effects are still there, Microdeal just haven't made a fuss about them. The Drumbeat MIDI sampling drum machine software is included as part of the package. At £99.95 for the complete package, it looks as though Microdeal are onto another winner. Watch out for the full review in *ST FORMAT* next month.

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D2D

Get to grips with direct to disk recording only in next month's issue of *ST FORMAT*

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MONTHLY MENU

F1
An exclusive playable demo of the best Formula One Grand Prix game ever to come out for your ST.
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Kid's colouring program.
Size: 192K **Page 12**

Audio Bass
Keep track of all your CDs, cassettes, DATs and MiniDiscs.
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Desk Effects
Customise your Desktop with your choice of fonts, animated mouse pointers and background pictures.
Size: 80K **Page 10**

Searcher Deluxe
Powerful and comprehensive disk search utility.
Uncompressed size: 54K **Page14**

Boot 60Hz
Modify all your disks to boot your ST at 60Hz for a larger display screen image.
Size: 2K **Page 13**

Mega 60Hz
Modify Mega STE disks so they boot at 60Hz and 8MHz.
Size: 2K **Page 12**

Cover Disk Backup
Back up that Cover Disk to ensure complete and utter safety!
Size: 13K **Page 13**

Tandem
Banish those disk-swapping blues by making your ST think that two drives are one.
Size: 2K **Page 13**

F1

BY: DOMARK
RESOLUTION: LOW
MACHINE:
ALL STS, NOT TOS 2.06
MINIMUM MEMORY: 1MBYTE
FILES:
VRM.PRG PLUS 50 DATA FILES

It's true, *F1* is the first racing game to be officially licensed by the FIA Formula 1 Championship, that's got to be mean the game's pretty good.

This is exactly why thousands of people follow motor racing, as your car flashes past the pits you plough headlong into a steel girder unexpectedly embedded in the centre of the track.

DESK EFFECTS

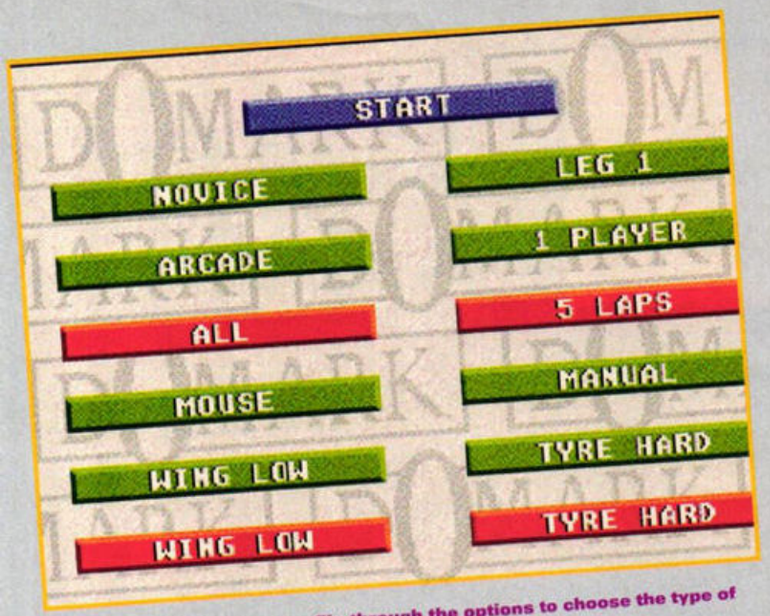
BY: ANONYMOUS
RESOLUTION:
LOW AND MEDIUM
MACHINE:
ALL STS, NOT TOS 2.6
MINIMUM MEMORY: 512K
FOLDER: DESKFX
FILES: DESKFX.PRG, DESKFX.PI1, DESKFX.PI2, DESKFX.MOU, DESKFX.FON, README, SIX OTHER FONTS AND MOUSE FILES
HARD DRIVE INSTALLABLE
SIZE: 80K
GET STARTED WITH: README, SEE OPPOSITE

Customise your Desktop by adding an interesting colourful background picture, installing a smart new screen font and animating your mouse pointer. Er, *why* exactly? Because the plain GEM Desktop is dull, dull, dull. *Desk Effects* doesn't do anything particularly useful for you, it just brightens things up a smidgenand makes the background a bit less boring.

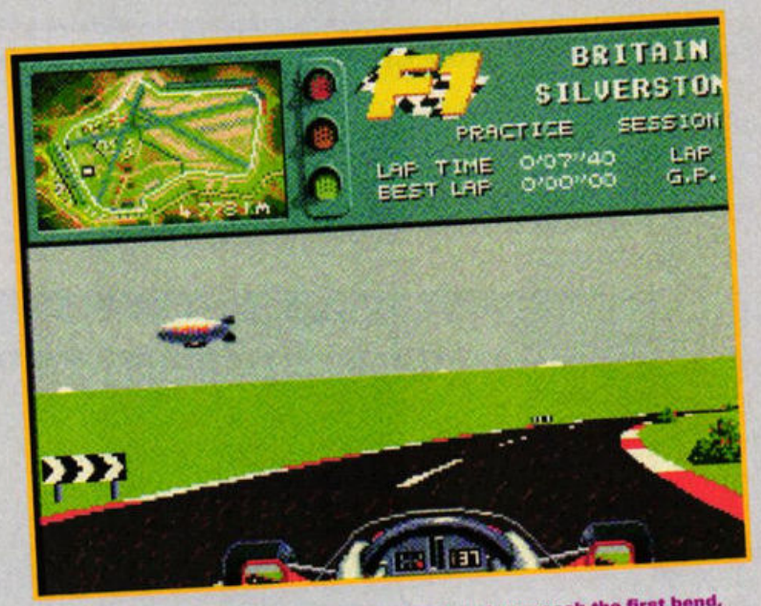
Copy the DESKFX folder to a blank disk; once all the files are transferred decide whether you want to run *Desk Effects* in low or medium resolution. You should always run *Desk Effects* by double-clicking on the DESKFX.PRG. You can put it in an Auto folder but because Auto folder programs always run in low resolution it can have some strange effects if you boot in medium resolution.

Desk Effects always looks for three files in the same folder as itself; the Desktop picture, the new font and the animated mouse pointer. It always looks for DESKFX.PI1 in low resolution, DESKFX.PI2 in medium resolution, DESKFX.FON and DESKFX.MOU. These files must always be in the same folder as DESKFX.PRG when you run it.

You can replace the supplied background pictures with any uncompressed *Degas* picture – just rename the picture you want to install on the Desktop to DESKFX.PI1 or DESKFX.PI2. There are three



Using the joystick you can flip through the options to choose the type of race you want to take part in.



In practice mode you zoom down the track and approach the first bend, it's a narrow right hander so be sure to brake into it.

FOLDER: F1
SIZE: 307K
MOUSE OR JOYSTICK
GET STARTED WITH: SEE BELOW

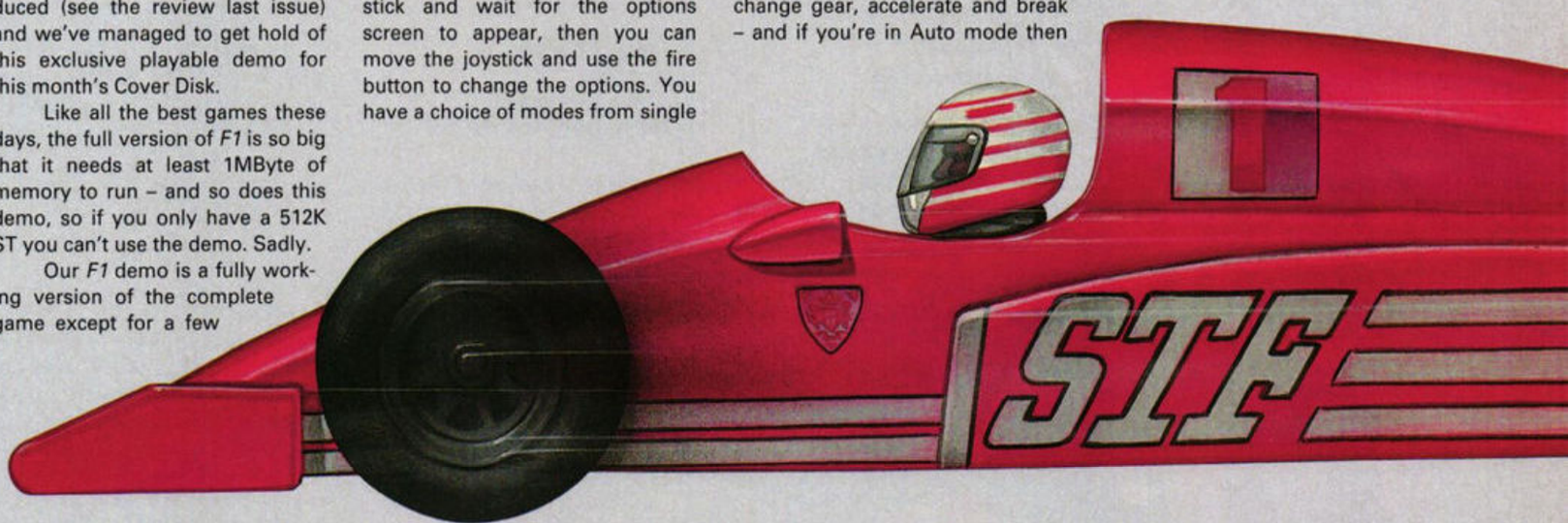
Domark have really done the business with *F1*, it's just about the best and fastest Formula One Grand Prix racing game ever produced (see the review last issue) and we've managed to get hold of this exclusive playable demo for this month's Cover Disk.

Like all the best games these days, the full version of *F1* is so big that it needs at least 1MByte of memory to run – and so does this demo, so if you only have a 512K ST you can't use the demo. Sadly.

Our *F1* demo is a fully working version of the complete game except for a few disabled menu options, you can only race at Silverstone and you are limited to a maximum of five laps. To get the game up and running all you have to do is double-click on the VRM.PRG file in the *F1* folder of your Cover Disk, sit back and wait for the demo to load.

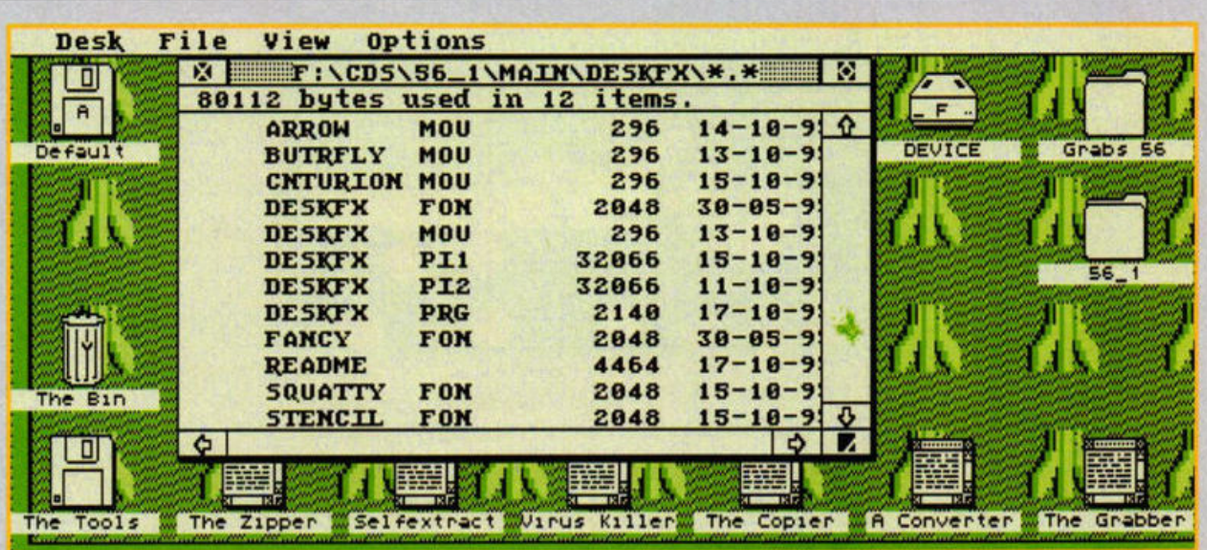
When the intro screen loads, press the fire button of your joystick and wait for the options screen to appear, then you can move the joystick and use the fire button to change the options. You have a choice of modes from single player practice to two-player championship mode. It's probably best to have a few practice sessions to start off with so you can get used to the way the car handles. It shouldn't take you too long because there are very few controls to learn, all you need to do is change gear, accelerate and break – and if you're in Auto mode then you don't even have to change gear, it's all done for you.

If you're not too sure about getting a racing game for your ST then the *F1* demo is the one that's going to persuade you to go out and get the full game. Why not give it a try and you'll love yourself for ever. Possibly.

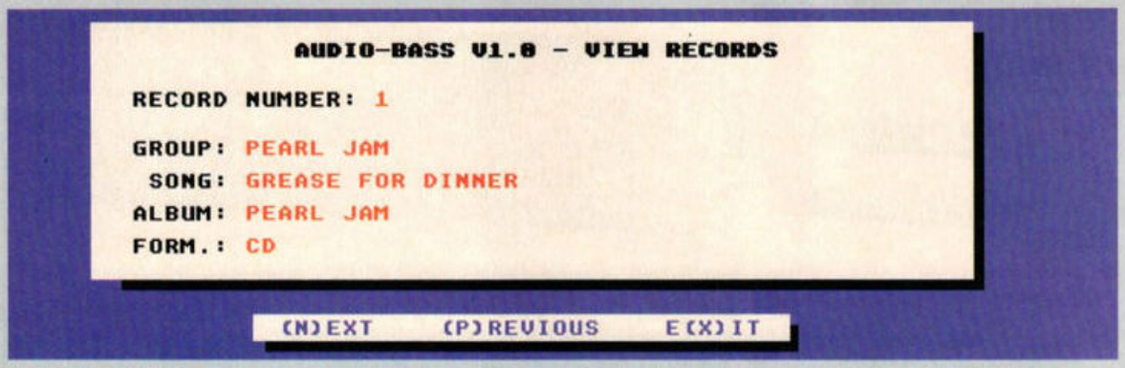


extra fonts and three extra animated mouse pointers for you to use. All you have to do is change the name of the font you want to install to DESKFX.FON and the mouse pointer file to DESKFX.MOU and the new files are loaded automatically.

So get a life for your ST and make it a touch less boring when you're busy with your word processing – fire up those *Desk Effects*.



Hmm, a snazzy Desktop picture of full of Atari logos, a more pleasing screen font and a mouse pointer shaped like a butterfly. Now you too can live life in the fast lane...



AUDIO BASS

BY: JAMES TILBURY
RESOLUTION: MEDIUM OR HIGH
MACHINE: ALL STS
MINIMUM MEMORY: 512K
FOLDER: AUDIO
FILES: AUDIOBAS.PRG, AUDIOBAS.DOC
HARD DRIVE INSTALLABLE
SIZE: 94K
GET STARTED WITH:
AUDIOBAS.DOC, SEE BELOW

An excellent mauve background sets off your music card file perfectly, *Audio Bass* keeps track of all your favourite songs in a handy card file database kind of way. It's groovy.

***Audio Bass* is a database** specifically for keeping track of your music collection whether it's on CD, cassette, record or MiniDisc. It's not just a straight listing of your albums, it's designed to enable you to keep track of each individual song by its title – all you have to do is remember the name of the song you want to find.

To get *Audio Bass* running copy the AUDIO folder to a blank disk or a hard drive, all you have to do then is run AUDIOBAS.PRG and select Create A File from the file menu. Enter a file name and go to the Records menu and choose Add Record. There are four fields on each card, you can enter the name of the artiste, the song title, the album name and the format the music is recorded on.

Once you have spent a few days entering the contents of your record collection your system is set up to find any song on any disc or tape using the search option, all you have to do is enter the name of the song you want to find and the card is displayed on-screen. It's 100% foolproof as long as you can remember the complete name of the song you want to find, so get those keys tapping and create your own disc catalogue.

MEGA 60HZ

BY: MÅRTEN LINDSTRÖM
RESOLUTION: LOW AND MEDIUM
MACHINE: MEGA STE ONLY
MINIMUM MEMORY: 512K
FOLDER: MEGA60
FILES: MEGA60HZ.PRG, BOOT60HZ.DOC
SIZE: 2K
GET STARTED WITH:
BOOT60HZ.DOC, SEE BELOW

***Mega 60Hz* is almost exactly** the same program as *Boot 60Hz* except that it's designed to work with the Mega STE.

It changes the monitor frequency to 60Hz in exactly the same way as the ST version of the program but it also changes the Mega STE's processor to 8MHz operating mode instead of 16MHz. Doing this enables many games to run on the Mega STE that were previously incompatible. You install the program to a blank disk in exactly the same way as explained in *Boot 60Hz* on the opposite page.

NEVER ENDING COLOURING BOOK

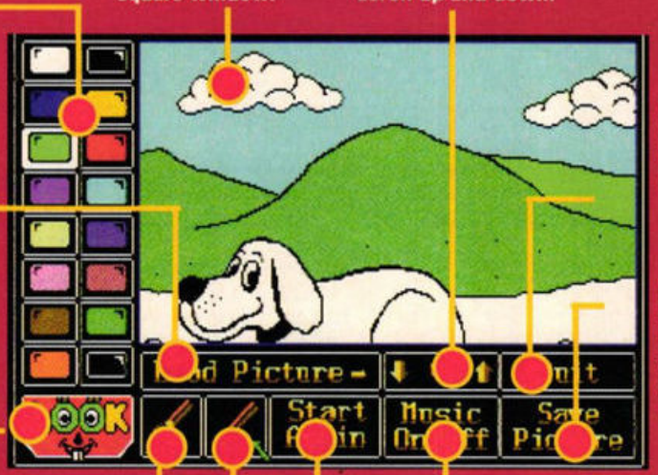
BY: TONESOFT
RESOLUTION: LOW
MACHINE:
ALL STS, NOT TOS 2.06
MINIMUM MEMORY: 512K
FILES: COLOUR.PRG, COLOUR.DOC, 25 DATA FILES IN COLOUR FOLDER
FOLDER: COLOUR
SIZE: 192K
GET STARTED WITH:
COLOUR DOC, SEE BELOW

The Never Ending Colouring Book (NECB) has been designed with younger children in mind, it's a simple-to-use art program that enables large line drawings to be coloured in using a simple point-and-click menu. As you get better at colouring in the pictures there are ten workscreens available enabling your own pictures to be designed and saved to disk that can be coloured in later.

The whole program is laid out in an easy to follow way, with large icons that even very young children can select easily with the mouse; it really is the ST equivalent of a colouring book and a lot less messy. Each picture you load triggers a different piece of background music, this is OK at first but soon begins to grate on your nerves after a time.

You can design your own pictures using *NECB* – there are ten screens left free for this purpose – using the two main drawing options, brush and pencil. Using the brush is the same as using the fill option on a conventional paint program to fill enclosed areas and you can use the pencil for finer detail. When you are designing on the workscreens it's best to use pencil mode and black ink to draw your pictures, but remember that when you save a new picture to disk, it over-writes the previous picture using the same file name and number. It's a good idea to get a collection of disks if you are going to produce lots of pictures.

WHAT'S WHERE IN THE PICTURE



- **Palette colours:** The currently selected colour is indicated by a white box around the chosen colour.
- **Work window:** You can see the loaded picture through the square window.
- **Picture number:** The number of the picture is displayed here,use arrows to scroll up and down.
- **Quit:** Exit the program and return to the Desktop.
- **Load picture:** Load a previously saved picture from disk.
- **Save picture:** Saves the coloured picture to disk using the default picture number.
- **Look:** Display the current picture full screen.
- **Brush:** Fill in enclosed areas of the picture with solid blocks of colour.
- **Pencil:** Draw on-screen using the current colour.
- **Start again:** Wipes all colour from the current picture.
- **Music on/off:** Toggle the jangly tunes on and off when they get on your nerves.

BOOT 60HZ

BY: MÅRTEN LINDSTRÖM
RESOLUTION:
LOW AND MEDIUM
MACHINE: ALL STS
MINIMUM MEMORY: 512K
FOLDER: MEGA60
FILES: BOOT60HZ.PRG, BOOT60HZ.DOC
SIZE: 2K
GET STARTED WITH:
BOOT60HZ.DOC, SEE BELOW

Using *Boot 60Hz* enables you to run all your programs – including games – at 60Hz on most colour monitors and TVs. So what? we hear you cry. Well, running a monitor at 60Hz instead of the standard 50Hz reduces screen flicker and increases the height of the display on your screen resulting in a bigger picture. You don't get any extra pixels or increased screen resolution, the picture is stretched so that it fills the screen.

Some TVs may not be able to cope with the increased display frequency; a good rule of thumb is to check if your ST is connected to your TV using a SCART socket, if it is then it should work without problems. Using 60Hz on a TV that can't cope with the higher frequency won't harm the TV, the picture just scrolls constantly until you reset your ST.

You must install the 60Hz boot program on a blank formatted disk, just follow these simple instructions. Run the BOOT60HZ.PRG on your backup copy of the Cover Disk and then wait for an alert box to appear. When the alert box appears put the blank disk in the drive and then click on the Understood box and the disk is modified. Click on OK to return to the Desktop.

To use your 60Hz boot disk put it in the disk drive and press the reset button, after *Boot 60Hz* runs eject the disk and insert your game disk and press <Return>. Your game now loads at the higher screen frequency.

***ST FORMAT* warning: never use BOOT60HZ.PRG to modify any game disks because it destroys the game's boot code. You should only ever modify blank formatted disks.**

EXTRACTING COMPRESSED PROGRAMS

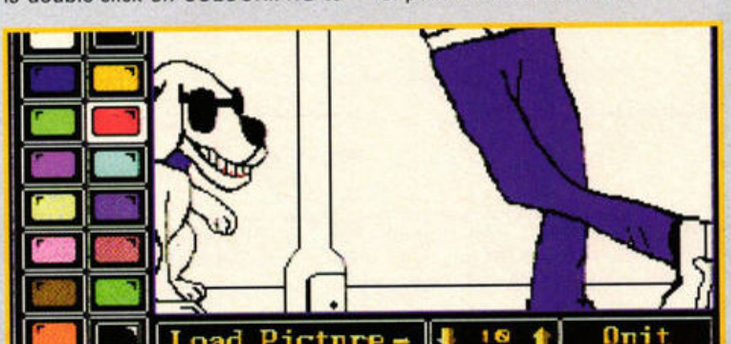
These decompressing instructions assume a single drive setup set to medium resolution

1. Format a blank disk and mark it as Disk B. This is the destination disk.
2. Get your backup copy of your Cover Disk, mark it as Disk A then put it into the disk drive. This is your source disk.
3. Click on the Drive A icon, a window opens with the folders on the Cover Disk displayed within it. If you can't see the Drive B icon, move the window so you can see it.
4. Double-click on the folder containing the file you want to copy so you can see the contents. Click on the file you are going to copy and keep the mouse button pressed, now drag the file over the top of the Drive B icon.
5. When the Drive B icon turns black release the mouse button. The Copy Files dialog box appears, click on OK to start the copy process.
6. An alert box appears telling you to put Disk B into Drive A. Do so, and click on OK. Your ST now tells you when to swap disks, follow the instructions on-screen and don't mix up the disks.
7. When the file is copied over completely, put the Cover Disk away and close all windows on screen. Put Disk B into the drive and click on the Drive A icon.
8. When the window opens double-click on the TOS file to start the extraction process, after a few minutes a message tells you to press <Return>. Follow the instructions – it knows best, you see.
9. You can now delete the TOS file from disk B. Follow the instructions in the magazine for the particular program you are using and read all doc files on the disk.
10. Repeat as necessary for any other self-extracting TOS files on the Cover Disk.

■ **Screens one to ten are pre-designed pictures ready to be coloured in, screens 11 to 20 are blank work screens for you to create your own pictures.**

To use the *Never Ending Colouring Book* copy the COLOUR folder, COLOUR.PRG and COLOUR.DOC from your backup Cover Disk to a blank disk – the program doesn't work if it's inside a folder so make sure you copy it directly to the blank disk. All you have to do now is double-click on COLOUR.PRG to run the program. Everything is mouse controlled, use the left button to choose options and the right button to exit from the drawing screen to the main menu.

It's all very simple to use and – as long as you turn off the music option – provides hours you with of peaceful entertainment.



■ **The main menu of *Never Ending Colouring Book* uses large friendly graphics that are easy for kids to pick with the mouse.**

TANDEM

BY: MÅRTEN LINDSTRÖM
RESOLUTION:
LOW AND MEDIUM
MACHINE: ANY ST
MINIMUM MEMORY: 512K
FOLDER: MEGA60
FILES:
TANDEM.PRG, TANDEM.DOC
SIZE: 2K
GET STARTED WITH:
BOOT60HZ.DOC, SEE BELOW

Many two disk games need loads of disk swapping during the game, resulting in long pauses while you swap disks and the drive re-reads the disk. Even if you have two disk drives you are normally stuck with using drive A because the programmers haven't bothered to write any drive B code into the game. *Tandem* is a small program that fools your ST into thinking that drive A and drive B are a single disk drive, when it looks for a filename to load into a game your ST automatically searches both disk drives as if they were one, in effect creating a single superdrive.

Tandem enables you to use most two disk games – but not all of them – with both drive A and drive B with a disk in each drive, *Tandem* doesn't work with games that autoboot.

All you have to do is run TANDEM.PRG in drive A and then run your game as normal by double-clicking on its program icon. Now you can sit back and enjoy your game without all that tedious disk swapping.

COVER DISK BACKUP

BY: BRIAN TILLEY
RESOLUTION:
ALL RESOLUTIONS
MACHINE: ALL STS
MINIMUM MEMORY: 512K
FOLDER: BACK_UP
FILES: BACK_UP.TOS
HARD DRIVE INSTALLABLE
SIZE: 13K
GET STARTED WITH: SEE BELOW

If you should accidentally drop your Cover Disk down an open manhole, or something else equally unlikely, then you'll lose all those wonderful programs we give you every month. That's why we always tell you to back up your Cover Disk. Twice.

To help you make your backup copy we've supplied BACK_UP.TOS on your Cover Disk, all you have to do is get a couple of blank disks ready and double-click on BACK_UP.TOS. Follow the on-screen instructions, always remembering that your Cover Disk is the source disk and the blank disk is the destination, and you'll soon have an exact duplicate of your Cover Disk tucked in your disk drive. Once you've made one backup it only takes a couple of minutes to make another one. So why not do it now? You know it's the sensible thing to do.

SEARCHER DELUXE

BY: ALEX NICHOLLS
RESOLUTION: MEDIUM AND HIGH
MACHINE: ALL STS
MINIMUM MEMORY: 512K
FOLDER: SEARCHER
FILES: SEARCHER.TOS
HARD DRIVE INSTALLABLE
UNCOMPRESSED SIZE: 54K
GET STARTED WITH: SEARCHER.TXT

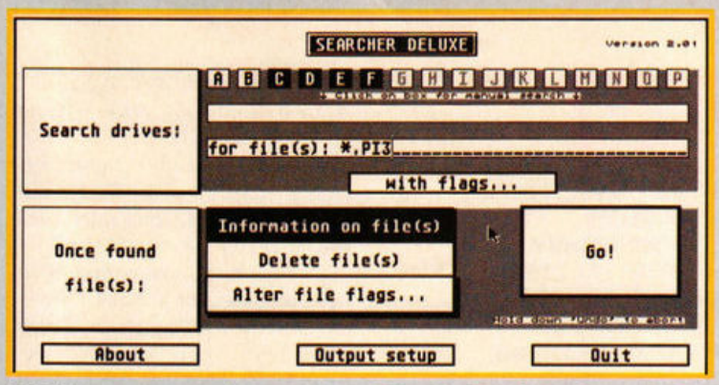
***Searcher Deluxe* is primarily** designed to be used with hard drive systems but it can be just as useful to use it when you're working on your floppy disk files.

Apart from its file searching abilities, *Searcher Deluxe* has many more useful functions and utilities tucked away within itself, it's not just a standard file search utility. You can use all of the usual file searching wildcards, substituting <*> and <?> for letters in the file name to find all possible matches. More useful than this is the ability to search by specific file attributes such as the date and time of a file, its size, if it's hidden, write-protected, a system or an archive file or any combination of all of these attributes.

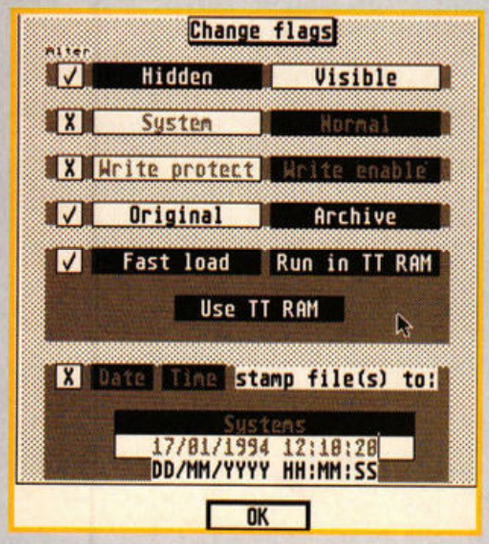
As an example you could look for all files with the file extender *.STF* created between June 1 1993 and July 1 1993 that are between 5K and 10K in size. You can also use *Searcher Deluxe* to alter the attributes of any file it finds, you can update any file with a new set of attributes automatically as the program finds it. You could set up *Searcher Deluxe* to hide all *Degas* files created before 1 January 1994 leaving just the current files visible when you open a drive window. Another way to use *Searcher* is as a disk catalogue program, simply set up the program to output all the file and path names to disk or printer.

Searcher is compressed so we could fit it onto the disk, copy SEARCHER.TOS to a blank disk and then double-click on it to decompress it. *Searcher* automatically unpacks itself ready to run, double-click on SEARCHER.PRG to run the program. Detailed instructions for using the many options are contained in the SEARCHER.TXT file that decompresses along with the program.

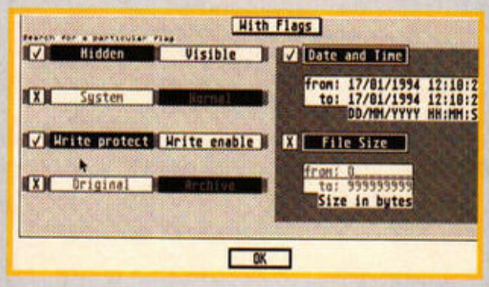
Remember, though, that *Searcher Deluxe* is a Shareware program, so if you find it useful send some cash to the author of the program; full details for registration are in the SEARCHER.TXT file on the disk.



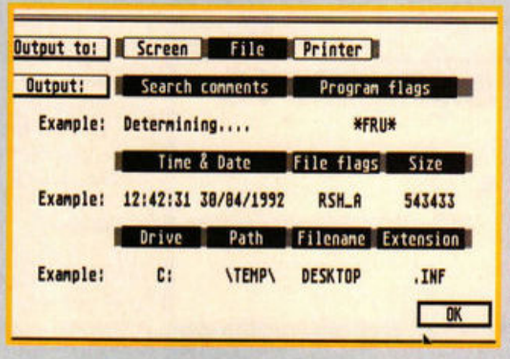
■ **Use the drive letter boxes to select the drives to be searched, *Searcher Deluxe* uses standard GEM wildcards in filenames enabling you to list all available matches on-screen or directly to a file or printer.**



■ **You don't just have to view the files on-screen when you've found them, *Searcher Deluxe* enables you to delete files or change their attributes. You can hide files, write-protect them, enable them to use TT RAM with an Xtra-RAM +8 board fitted or modify files to the current date and time.**



■ **Search parameters can be entered using the program's flags screen, you can search for files created between two specific dates, look for files of a specific size or look for hidden, visible, system and normal files.**



■ **You can either view the output on-screen or send the data to a printer or a disk file for a more permanent record. You can use É as a disk catalogue utility, a file modification tool or just to search for files and programs, it's up to you.**

TEN TIPS FOR COVER DISK SATISFACTION

1 Write-protect your Cover Disk by sliding the black tab so you can see through the hole; this prevents you from accidentally erasing data.

2 Make a backup copy using the *ST FORMAT Back-Up* program, see the instructions on page 13.

3 Always read the instructions for the program you are using on the Cover Disk pages and in any document file that is on the disk.

4 Never run software directly from the Cover Disk except the *Back-Up* program, and always use your backup disk.

5 Never try to decompress self-extracting TOS files on the Cover Disk, always copy them to a blank disk.

6 If you have any general problems with your ST, consult your manual. If you are still stuck then write to ST Answers, 30 Monmouth Street, Bath, BA1 2BW.

7 If you can't load, copy or back up your Cover Disk programs then you may have a faulty disk – it happens sometimes. Send the disk and a padded self-addressed envelope to:
ST FORMAT March Disk Returns, PO Box 21, Daventry, NN1 5BU
We pay the return postage. Don't send faulty disks to our Bath or Somerton offices because we don't keep stocks of Cover Disks there.

8 If you are having problems with a Cover Disk program go back and read the Cover Disk pages and any DOC files on the disk. If you still can't get the program running, call the *ST FORMAT* Cover Disk Hotline on ☎ 0225 442244 on Wednesdays between 2pm and 6pm only – we can't accept calls at any other time.

9 If you have other hardware or software queries, contact the manufacturer or publisher. Alternatively, ring the official Atari Helpline on ☎ 031 332 93233 between 6pm and 11pm Monday to Saturday and 8pm and 11pm on Sundays.

10 *ST FORMAT* Cover Disks are double-sided, if you have an old STFM and cannot read the Cover Disk then you should upgrade your ST to a double-sided drive.

WE WANT YOUR PROGRAMS!

We pay for your software – so if you've got anything that's good, original and preferably short that you think really deserves to go on *STF*'s Cover Disk, send it with this form and full documentation to Clive Parker, *ST FORMAT*, Cover Disk, 30 Monmouth Street, Bath, Avon BA1 2BW.

Name _____

Address _____

_____

Daytime phone _____ Program title _____

_____ Total size in K _____

On a separate sheet, explain concisely what the program does and why you happen to think it's so brilliant. Remember to: ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Keep a copy of your program, because we can't return any programs

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I hereby agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed _____

B17
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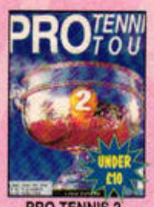

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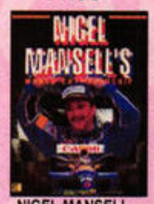
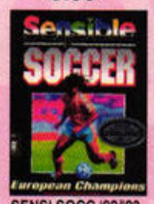


NIGEL MANSELL
18.49



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IMPORTANT PLEASE NOTE

G = requires at least 1 meg of to run.
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NTAGE TENNIS 18.49
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A to Z of tips

There are scores of things you can do to get more out of your ST - Clive Parker and Andy Nuttall take you gently through the alphabet with over 100 hints, tips and snippets of essential information to help you on your way

ACCELERATORS

If you're using your ST to run serious software in a business then you really should install an accelerator of some kind, it speeds up your ST saving time on almost every application you use. The TinyTurbo series of hardware accelerators and the NVDI software accelerator are just about the best you can get, they are both available from System Solutions.

Sent under plain cover, NVDI is stuffed with fast routines to make your ST zip along.

ADDAMS FAMILY

Enter L1191 as a password to begin the game with five hearts. Go left on the continue screen to enter a secret room.

***The Addams Family's* a constant chart-hit, especially now it's out on budget. Check out our tips for extra lives.**

ART

Best package: *Degas Elite* (First Computer Centre £24.99). You have a maximum of 16 colours with a standard ST, but striking effects can be created especially when using a combination of the same basic colour.

ATARI UK

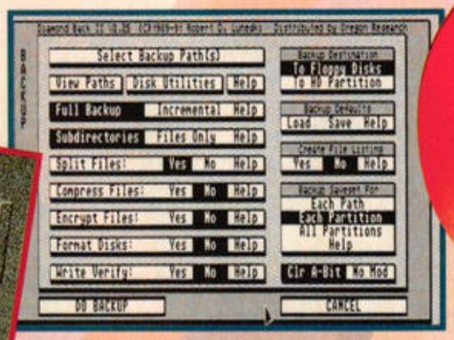
If you have a faulty ST call Atari customer services on ☎ 0753 533344 with details of the fault and the serial number of the faulty machine. They can provide you with a returns number and quote you the maximum cost of the repair.

ASCII

ASCII (American Standard Code for Information Interchange) is an acronym to describe the accepted method of transferring text between different platforms. If you want to transfer text to a PC or Mac from your ST, then you must save it in ASCII format.

BACKUPS

All your software should be backed up on a regular basis in case your disk box is struck by lightning or some other unexpected tragedy. Once important data is damaged it's very hard to reconstruct it.



Making backups is the most important and the most ignored method of keeping your software safe from harm.

BASIC

Learning BASIC is the easiest way to get started in programming, once you've learned how to structure a program in BASIC you can move on to learn C or assembly language.

BOOT DISK

On a floppy based system it's a good idea to have different boot disks for different tasks, it's best if you use different Desk Accessories and Auto folder programs for graphics, DTP, word processing and MIDI.

BOOT UP

Start up your ST by switching on the power (cold boot) or by pressing the reset button (warm boot). For safety reasons disks shouldn't be fully inserted in the drive for a cold boot because there is a chance that a power surge could cause a blank spot on your disk.

CAD

Acronym for Computer Aided Design. There's only one CAD package around to speak of, which is *GFA Draft Plus 3*. *ST FORMAT* gave this away on the Cover Disk of issue 34, so you should be able to pick it up for a song. Contact GFA for further details.

CHEAT

If you can't beat a game on your own, why not cheat? Try Gamebusters and Captain Blunder every month in *ST FORMAT*, or if you're really stuck in lots of games buy the Cheater's Digest from PJH Publishing.

COMMS

One of the best ways of ensuring continuing massive profits for British Telecom, using a modem enables you to keep in contact with other ST enthusiasts around the world. If you want to access any of the larger networks (AtariNet, FidoNet) then always use a local BBS that is a node for the net you want to use, this helps keep the phone bill down.

COVER DISK

Stick the *ST FORMAT* Cover Disk in your ST every month for the very best game demos and serious software that can be found on any ST magazine.

D2D

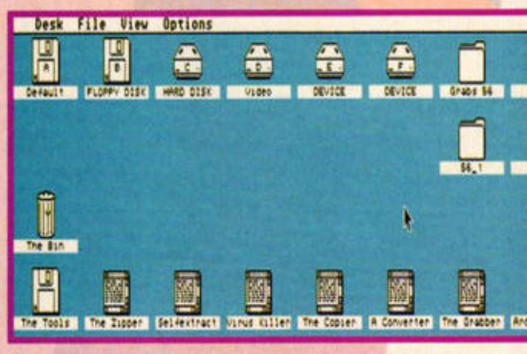
Acronym for direct-to-disk recording. The best package simply for D2D is *4T/FX* by, er, D2D Systems. For £299 you can record up to four tracks of digital sound, just like a digital multi-tracker.

DESK ACCESSORIES (DAS)

You can only load a maximum six Desk Accessories into memory at once, even this may be too many on a 520ST because each DA takes up valuable memory leaving less room for other software. Only load as many DAs as you need for a session; using a manager program like *Superboot* from the ST Club enables you to pick and choose the ones you need.

DESKTOP

On versions of TOS above 2.05 you can customise the Desktop to suit your specific needs. A neat trick is to save many differently configured NEWDESK.INF files to disk and then edit their names to suit the particular setup. You could have DTP.INF, SAMPLE.INF, WP.INF setups and load them when you want them using Read INF File in the Options menu.



Installing your most used programs on the Desktop makes your ST easier to use.

DIGITISING

To create good digitised images, you need a good quality video image to grab in the first place. If you grab from a slightly shaky video, you get a blurred image. Use a video player with a good freeze frame, or a video camera for the best results.

DTP

Professional desktop publishing packages cost loads of money – the best is *Calamus SL* from JCA Europe but it costs £575. A slightly cheaper, but nonetheless excellent, option is *Pagestream 2*, available from Silica Systems for £169.

EDUCATIONAL SOFTWARE

For 11 or 12 year olds, teach them maths and English using the ADI range of programs from Europress Software. Younger kids also

get the full treatment from Europress with the *Fun School* range, starting from five years old. Both sets of programs cost £25.99.

EMULATORS

You can run PC business software on your ST using a PC emulator. Remember you can't play PC games using an emulator; they're only designed to run business software. The PC Speed range from Compo Software includes one of the most reliable PC emulators you can get anywhere.

FALCON

When choosing a Falcon get at least 4MBytes of RAM and a hard drive, a 1MByte Falcon without a hard drive is virtually useless.

FLOPPY DISKS

Don't store any magnetic media near a television, monitor or audio speaker. The magnetic signals from these units can damage the disks.

FLOPPY DRIVES

It's a fallacy that floppy drive heads should be cleaned using a head cleaning disk on a regular basis – the abrasive material used in cleaning disks can cause wear on the drive heads. Normal use keeps the drive heads clean.

FONTS

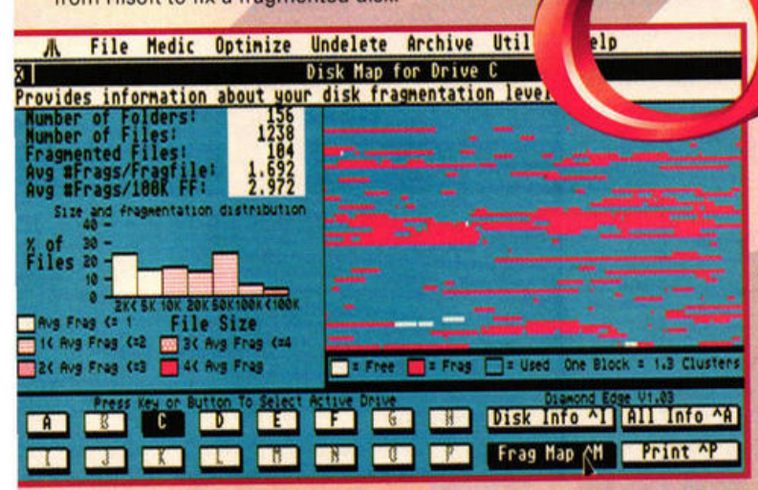
Fonts are more files that use up rakes of memory; only install the fonts you need for a particular document and you have more room to create multi-page masterpieces.

FORMATTING

If you want to get more data on a disk then you need a special formatting program, *Fastcopy Professional* available from the ST Club enables you to create customised disk formats. Never try and format a disk beyond the capabilities of your disk drives – most drives have trouble with more than ten sectors and 82 tracks.

FRAGMENTATION

After you've been using your hard drive for a few months, you see that data files takes longer to load and save. This is because when a drive starts to get full, big files may not be able to be stored as one long consecutive file but split into a series of chunks. This is called fragmentation. You can use *Diamond Edge* which costs £49.95 from Hisoft to fix a fragmented disk.

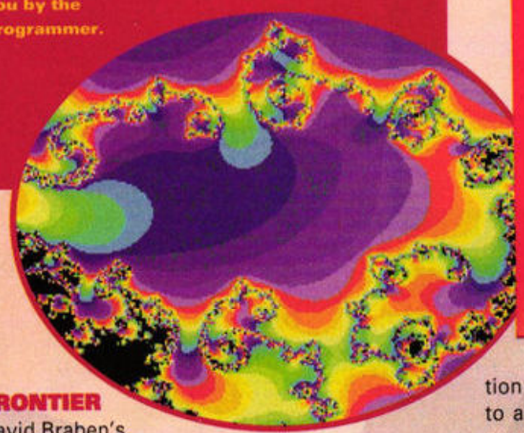


Just look at the state of this drive. File operations become very inefficient when a drive gets into this bad condition.

FRACTALS

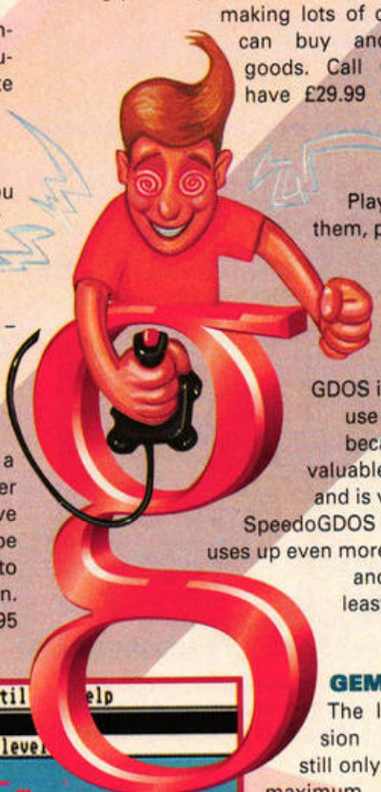
Fractals are mathematical equations which can be used to create beautiful graphic effects. For artists, this is a great way of creating new, original images – and it's amazing how easy they are to make. Try Fractal Landscape (see *ST FORMAT* issue 43) or a reputable Public Domain company for more inspiration.

Use mathematics to create beautiful fractal images such as this. Don't worry if you failed maths at school - all the hard work's done for you by the programmer.



FRONTIER

David Braben's excellent space trading game is difficult to play at first. Increase your chances legitimately by selling your ship and buying a cheaper one, thus making lots of credits so you can buy and sell more goods. Call Gametek and have £29.99 ready to part with.



GAMES

Play them. Lots of them, preferably until your eyes go square.

GDOS

Only install GDOS if you intend to use it immediately because it uses up valuable memory and is very slow. SpeedoGDOS is fast but uses up even more memory and needs at least 2MBytes to run.

GEM

The latest version of GEM still only permits a maximum of seven windows to be open. You can add a PD patch program to your Auto folder called *WINX* that enables you to open up to 40 GEM windows at any one time.

GRAPHICS

Your ST is fairly limited with just 16 colours, but you can squeeze more out of it with the right art package. *Spectrum 512* at £31.19 from Silica is a program which gives you a palette of 512 colours, and a good range of features.

HARD DRIVES

Treat hard drives with respect; never move them while they're running because you can cause a fatal head crash and destroy the disk platters inside. Yet another reason to back up your hard drive.

HIGH DENSITY DRIVES

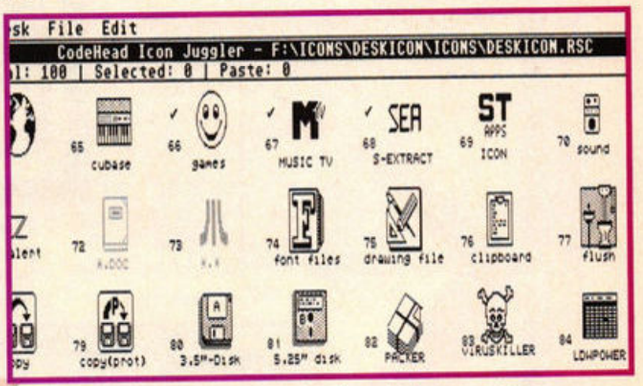
With file and program sizes getting bigger it's a good idea to add a high density drive to your ST, you can get twice as much information on a 1.44MByte high density disk compared to a standard 720K floppy. Analogic Computing supply a complete DIY HD drive kit for £69.95.

ICD PROFESSIONAL

Hard drives deserve the best formatting and partitioning software available, and this is it. The *ICD Professional Hard Drive Utilities* (£39.95 from System Solutions) are the most comprehensive hard drive tools you can buy; using them you can format practically any SCSI drive and, combined with an ICD host adaptor, you can use your ST with optical, floptical and CD-ROM drives.

ICONS

You can design your own screen icons for the TOS 2.06 and *NeoDesk* Desktops by using Icon Edit and Make Icon, two smart utilities both available from most PD libraries.



The ultimate in customisation, design your own unique Desktop icons to enhance your display. If you're stuck for good designs there are hundreds of icons available from PD libraries.

IDE DRIVE

The IDE (Intelligent Drive Electronics) drive is the compact internal hard drive found in the Falcon. When you buy a Falcon get the largest capacity drive you can afford because you definitely need the space.

JAGUAR
Buy one if you like games. Buy one if you don't like games, just in case you might one day.

JIMMY WHITE'S WHIRLWIND SNOOKER
You can get Archer MacLean's great snooker sim to constantly make 147 breaks by using this cheat. On the main menu select Trickshot, then hit <F7>, <F4> and <F1> in sequence. Now go to the options menu, and select 147 break.

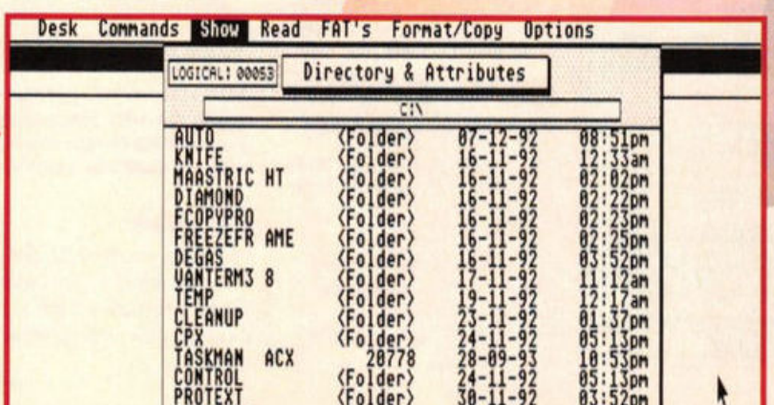
JOYSTICKS
A good joystick is important if you're serious about games. Power Play produce the best range, including the Competition Pro 5000 (£13.99) and the Zipstick with autofire (£14.99).

You must have a good joystick, but there are so many of them around where do you start? Try our tip for two of the best.

JPEG
Acronym for Joint Photographic Expert Group. One of the most efficient methods of compressing images, used by ST packages such as *GEM View* and *True Paint*.

KBYTES (K)
Almost the same as a Megabyte (MByte) but 1,024 times smaller. One KByte is equal to 1,024 bytes of information.

KNIFE ST
If you're trying to recover damaged or erased data then you need *Knife ST* (Hisoft 49.95), it's the most comprehensive and powerful disk recovery tool you can buy.



Knife ST tells you everything you need to know about any disk, whether it's a floppy or a hard drive. Be careful though, it's dead easy to destroy data with a disk editor.

LANGUAGES
Learning a programming language is hell, all that GOSUBing and GO TOing really gets you confused. The best way to learn a language is to use subliminal tapes at night with a pillow speaker, the language is unconsciously absorbed by your pre-frontal cortex while you sleep. When you wake up you find you can program perfectly. With any luck.

LEMMINGS

FUN

5 ldlcajnfck	20 jlflcknedw
10 ikhmdlckct	25 ccjjmfljdq
15 lcaolmdpcy	30 flcoklmodu

TRICKY

5 ohnlibadep	20 ijjlgmccfs
10 cmnllemiep	25 mcgnmlfhfl
15 mdmcgjmnel	30 hmgmcmomfu

TAXING

5 gekknmjbgj	20 gknnolhqgs
10 engijnlggo	25 lfnngcjnfh
15 oimelgalgk	30 ijhmfmfkhg

MAYHEM

5 hfanlmfphn	20 difijlmoiq
10 hldifineiv	25 nhlfifadjp
15 fajhmdijip	30 finllfiijq

TWO-PLAYER

5 ldkjajlfmy	15 kjanlmdpmx
10 ijhmdkjkms	20 hlfkjinens

LEMMINGS 2
On the first level of each tribe, save only one lemming. Go through all the levels with that one lemming, and get a gold medal for each. Return to the first levels, complete them to get the gold talisman.

***Lemmings 2*'s kinda like *Lemmings*, but you've got lots of different tribes with different skills. Take a single lemming out of each, and then just go for gold!**

LOTUS TURBO CHALLENGE 2
Enter the passwords as TURPENTINE and DEESIDE for infinite life.

MAINTENANCE
It is important to look after your ST gear, so that it gives you years of trouble-free computing. The bits that need most attention are the moving parts such as floppy and hard drives, and printers. Give your printer a spring clean every couple of months with some compressed air (£4.75 from Maplin's). Don't use disk head cleaners too often – floppies don't get dirty very quickly. If you have a hard drive, give it a once-over every few months using a program such as *Diamond Edge*.

MBYTES
The more MBytes of RAM in your ST the better. You can run bigger games, more powerful applications and make bigger sound samples.

MICE
Mice are nice but the original ST rat is sooooo slooooow. Get yourself a 400dpi mouse and the mouse cursor zooms across the screen, especially in high resolution mode. Gasteiner, Analogic, WeServe and First Computer Centre all sell quality 400dpi mice for under £20.

MIDI
Acronym for Musical Instrument Digital Interface. Connecting a MIDI-compatible keyboard to your ST is pretty easy, but if you connect both MIDI In and Out, and you play a note on your keyboard, the ST echoes that note back to your synth, so playing it twice. Make sure that you set the Local Echo option on your sequencer to Off.

MODEMS
The best advice for you if you're into comms is to buy the fastest modem you can afford and to log on during the cheap rate periods – this keeps the cost of your calls down.

MONITORS
Using a TV is fine if you only play games on your ST, but for graphics or word processing

Still the most popular ST monitor you can buy, and not too expensive.

you need a good monitor to prevent eye strain. Try the Philips CM8833 Mk2 from WeServe (£194) for a top quality picture and stereo sound.

MULTI-TASKING

MultiTOS is too large and too slow to run on an ST because it's designed for 68030 processors. If you want to multi-task with your ST then get *Geneva* (£59 from Compo), it's the new ST compatible multi-tasking operating system.

Now you can run two programs or more at the same time on an ordinary ST. *Geneva* from Compo Software is the perfect answer to all your multi-tasking requirements.

MUSIC

There's no more enjoyable hobby than creating music using a computer, because it requires very little music knowledge. Your ST is the best equipped computer there is for making music, so buy yourself a MIDI keyboard and a sequencer, and get composing!

n

NETWORKING

Using a network in your office can save you money because each ST on the network can use the same hard drive, printer or modem.

NETWORKS

Not to be confused with office networks, comms networks link thousands of BBSs together all over the world enabling you to get the latest ST PD and Shareware software almost as soon as it's available.

o

ON-LINE

A variety of games are available which you can play using your ST linked to other users by a modem. They are all provided by On-Line Entertainment, but it costs lots of money. You can connect two STs together and play games such as *Vroom* from UBI Soft and *Populous* from Bullfrog, though, which is fun.

PALETTE

Choosing your palette carefully is important to create good pictures from your art package.

p

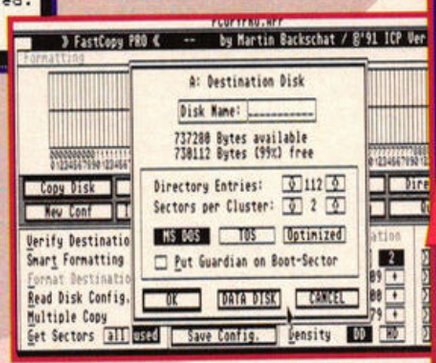
You only have 16 colours, so you must make sure that you have necessary colours before you start to create your basic drawing. Then you can choose your secondary colours from the remaining palette.

PARASOL STARS

The thing to remember in this game is that gold rods change dead creatures into magic coins, while yellow lamps change secret food into magic coins. Collect both items when you can.

PC FORMAT

If you want to transfer files to or from a PC you need a PC formatted disk. You can either use the Desktop formatting option on TOS versions 1.4 and higher or use a special formatting program like *Fastcopy Professional* for £24.95 from the ST Club.



Probably the fastest way to back disks, up *Fastcopy Pro* formats to PC standards.

PIRACY

Copying ST programs and giving them to other people is illegal. If you want to make a backup for yourself then that's fine, but piracy of games has all but killed off the ST games market so don't be tempted. If somebody offers you a pirated program, tell them to get knotted!

POPULOUS 2

To cast lightning without using any mana, move over your target, press your mouse button, then hold down <1> and then release the mouse button. The lightning continues until you press a mouse button again. Hold down <F9> to increase your mana.

PRINCE OF PERSIA

Press <Shift> and <L> to skip levels.

PROGRAMMING

When you start writing a program in any language you can't just start typing in data at line one and hope everything works out OK in the end; you've got to sit down and plan the program from start to finish before you enter a single line of code. Dedication's what you need. Oh, and lots of coffee.

PUBLIC DOMAIN

A great way of getting cheap or free software, including games, utilities and demos. Contact a reputable PD house for a catalogue, such as ST Club, Goodmans and 16/32 – check out our list on page 35 for more libraries.

q

QUADRALIEN

Some level codes are 170961, 010655 and 610169.

QUIT

Usually the last thing you do when running a program; always make sure that you've saved your work before you select the Quit option otherwise all your hard work vanishes in a big puff of logic.

r

RAINBOW ISLANDS

On the title screen, type in one of the following codes:

BLRBJSBJ	Magic shoes
SJBLRJSR	Hint C
RJSBJSBR	Double rainbows
LBSJRLJL	Book of continues
SSSLLRRS	Fast rainbows
RRLLBBJS	Bonuses become money
BJBJBJRS	Hint A
RRRRSBSJ	Both above cheats
LJLSLBLS	Hint B
SRBJSLSB	10,000,000 points

RAM
Random Access Memory is where programs and data files are stored while a program is running; when you turn off your ST any data in RAM vanishes – including viruses. If you add a memory board upgrade to your Falcon, make sure the SIMMs you use for it are rated at 70ns or faster.

RAYTRACING
If you're interested in graphics and art, raytracing is a great area to explore. However, creating a raytraced image is a complicated procedure, so it's useful to get a basic program to get your started. *Realistic Raytracer*, a Public Domain program from LAPD, is a great introduction. If you want something more advanced, try *Xenomorph* (£79) from 16/32 Systems.

RESOLUTIONS
On colour systems you sometimes need to boot in low resolution and at other times in medium resolution. It's a good idea to have separate boot disks handy with low and medium DESKTOP.INF files saved on them.

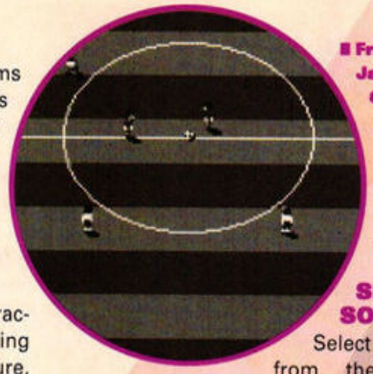
RETOUCHING
You can retouch your scans and digitised images using an ordinary paint program, but if you're serious about it you might want to go for *Retouche* (£299 for mono and £499 for colour packages including *Didot Professional* from CGS Computerbild). This package contains the usual painting features, but also some image processing functions such as blur and sharpen, to really get your images looking good.

ROM
ROM stands for Read Only Memory and is where data is permanently stored; the TOS chips in your ST are ROM devices.

SAMPLING
If you need a sampler for use with a tracker program to create demos, then choose a cheap 8-bit stereo sampler such as *Stereo Replay* from Hisoft/AVR (£89.95). For more professional quality there is *Replay 16* (£129.95), also from Hisoft/AVR, which gives you CD-quality sampling but it's mono only. With *Replay 16* you can transfer samples to and from a professional sampler such as the Akai S1000, for easy sample editing.

SCANNING
You can get great scans from a hand-held scanner such as the Golden Image Scanner from Gasteiner (£119), as long as you take your time and keep a steady hand. This scanner is quite small so for larger images you may have to do several scans, or you could go for the Daatascan A4 from City Beat, which is larger but costs a whopping £499.95.

SECRET OF MONKEY ISLAND
The puzzle we have most letters about is how to get the Head of the Navigator from the tribe to go through the tunnels. If you investigate the leaflet you got from Stan (used ship emporium), you might see the light...



Franzie, Nobby, Jackie, Bobby, er, Gordony. The stars of the 1966 world cup final are here in all their glory, and even in glorious mono-vision.

SENSIBLE SOCCER
Select Custom Teams from the menu, then choose England and West Germany for a friendly. Start the game, and be prepared to warp back in time to 1966...

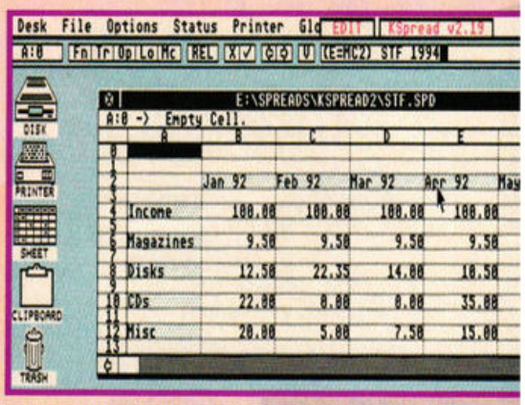
SEQUENCER
The ST is the most popular music sequencer, so there are plenty of programs to choose from. *Cubase* from Steinberg is the musicians' choice, but it sets you back £399. The excellent budget-orientated *Sequencer One* from Gajits can be picked up for around £40, but for real value-for-money, buy issue 54 of *ST FORMAT* from our back issue service on page 60. That way you get the *KCS Omega* sequencer, worth £275, for just the price of the magazine!

SIM CITY
Type MONEY while playing for an extra $10,000. Keep typing it for extra money, but enter it too often, and you suffer an earthquake.

SIMMs
Your STE has SIMMs (Single Inline Memory Module) sockets so you can just plug in any extra memory you need. Shop around for the best prices for 1MByte SIMMs because prices fluctuate wildly.

SPEEDBALL 2
From *Speedball 2*, make a saved game of the league or cup on a blank disk. Load up *Knife ST* (from *ST FORMAT* issue 42), and insert your saved game disk. Select Read from the menu bar, and select Physical Sector. Press <Return> when you're given the choice of sector. Go to the Commands menu and select Edit Buffer. Now change all 64s on that page to FFs. Select Save Buffer again via the Commands menu, then press <Return>. Now load up *Speedball 2* and load in your tweaked Save Game.

SPREADSHEETS
Using a spreadsheet can get very confusing especially if you accidentally over-write a previous version of a calculation; always save important documents with consecutively numbered filenames every time you make an alteration or an update.



You really should get a spreadsheet program if you're running a business of your own.

STREET FIGHTER 2
Pause, then type in 7KIDS for two players to play the same character. Or place the cursor over Blanka on the character selection screen and type in PATIENCE. Now, select your player, and <F10> tops up your energy, but you don't get to see the end-of-game sequence.

TABBY
If you're really into graphics then you probably find a mouse a bit awkward for drawing, the Tabby graphics tablet (£49.95 from CGS ComputerBild) complements your mouse and provides a stylus for quick and easy freehand drawing.

TEXT EDITORS
If you need to produce straight ASCII text files without all the bells and whistles associated with a word processor, then you need *STeno*, an inexpensive (£17.95), powerful and well designed text editor from Compo Software.

The Tabby is the, er, cat's whiskers when it comes to graphics.

TOS
If you have an older STFM then it makes sense to upgrade to at least TOS 1.4 for its improved file handling abilities. Another alternative is to add TOS 2.06 and a TOS switcher enabling you keep your old TOS for compatibility and reap the benefits of the latest ST version of TOS. Both Compo Software and Analogic Computing supply STFM TOS switcher boards. Prices start at around £69.95.

TRACKER
A tracker is a mini-sequencer, which you can use to link together samples to make a tune. Available from the Public Domain, they are a great introduction to computer music, and you can use the tunes in your *STOS* programs, games and demos. Contact a large Public Domain library for details.

UPGRADING

While the ST is a powerful computer in its own right it still makes sense to upgrade the memory, add a colour graphics card or add a hardware accelerator to really exploit its potential. Today's professional standard software demands maximum hardware capabilities from your ST.

UVK V6

The *Ultimate Virus Killer* at £9.95 from Douglas Communications is the best virus protection program you can get and it's just been completely re-written. Our tip is "buy this program today."

VIEW 2

If you've ever wanted to view picture files just by clicking on them, then *View 2* (£14.95 from the ST Club) is potentially the most useful little utility you can add to your system. Taking up no memory at all on a hard drive system and about 64K on a floppy system, *View 2* enables *Degas, Neochrome, Spectrum 512, Cyber* sequences and sound samples to be accessed by a simple double-click.

VIEWERS

Use the Shareware program *GEM View* to convert brilliant graphics from other platforms to file formats suitable for your favourite ST art program. It's the most versatile picture converter you can get for your ST or Falcon.

VIRUSES

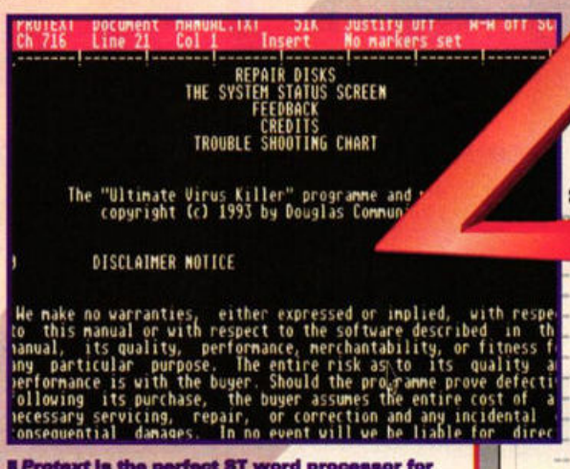
Dangerous viruses aren't as common on the ST as they are on other platforms, but it still makes good sense to write-protect all disks and make regular backups of important data. Always check out any PD or Shareware disks you are sent with your virus killer program.

Hell, just when you thought you'd seen the weirdest game ever (*Mega-Lo-Mania*) the Sensible boys brought you *Wizkid. Breakout*, with all the boring tedium taken out, and lots of excellent things thrown in.

don't have five stars, then keep buying them until you do. For every star you buy you get 100 Wizdollars free.

WORD PROCESSORS

Choose a word processor to suit your needs. If you are churning out reams of text then a fast plain word processor like *Protext v6* (£152.75 from Arnor) is your best bet. If you intend to produce more DTP-like output then *That's Write 2* (£79.95 from Compo) has excellent graphics capabilities.



***Protext* is the perfect ST word processor for large text based documents. It's fast, easy to use and can be managed on a floppy drive based system.**

X-TRA RAM DELUXE

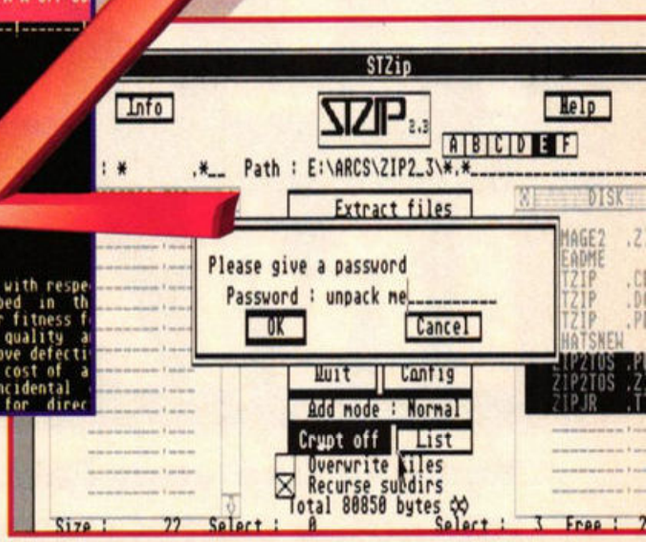
This is the best way to upgrade an STFM to a minimum of 1MByte of RAM using SIMMs; Marpet Developments have developed the ultimate memory upgrade system with its ease of installation and reliability. Prices start at £44.99 for X-tra RAM Deluxe upgrades.

YMODEM

Michtron BBSs (such as the *STF* BBS) have YModem capability; the batch mark function uses this protocol enabling you to download up to ten files without tediously having to enter each individual filename.

ZIP

When using the Public Domain program *ST Zip* you can use a special encryption routine to protect your archives so they can only be unpacked with a secret password.



Keep your archives secure from prying eyes and data thieves using the password protection option of *ST ZIP*.

XENON

On Level Two die just after killing the baddie in the middle of the level. There aren't any more aliens until the end of the level, which makes life a great deal easier.

XMIT

Use this function in the *STF* BBS to instantly download an individual file from the file base.

XMODEM

Always use X-Modem 1K to upload files to the *STF* BBS, it's the quickest and easiest way to send us a file.

WIZKID

On the first round, in Head mode, get as much cash together as you can. When you get to the shop, buy a star but don't treat yourself to any other goodies. Pull the joystick down to summon the shop balloon, and once again buy only a star. If you still

ZMODEM

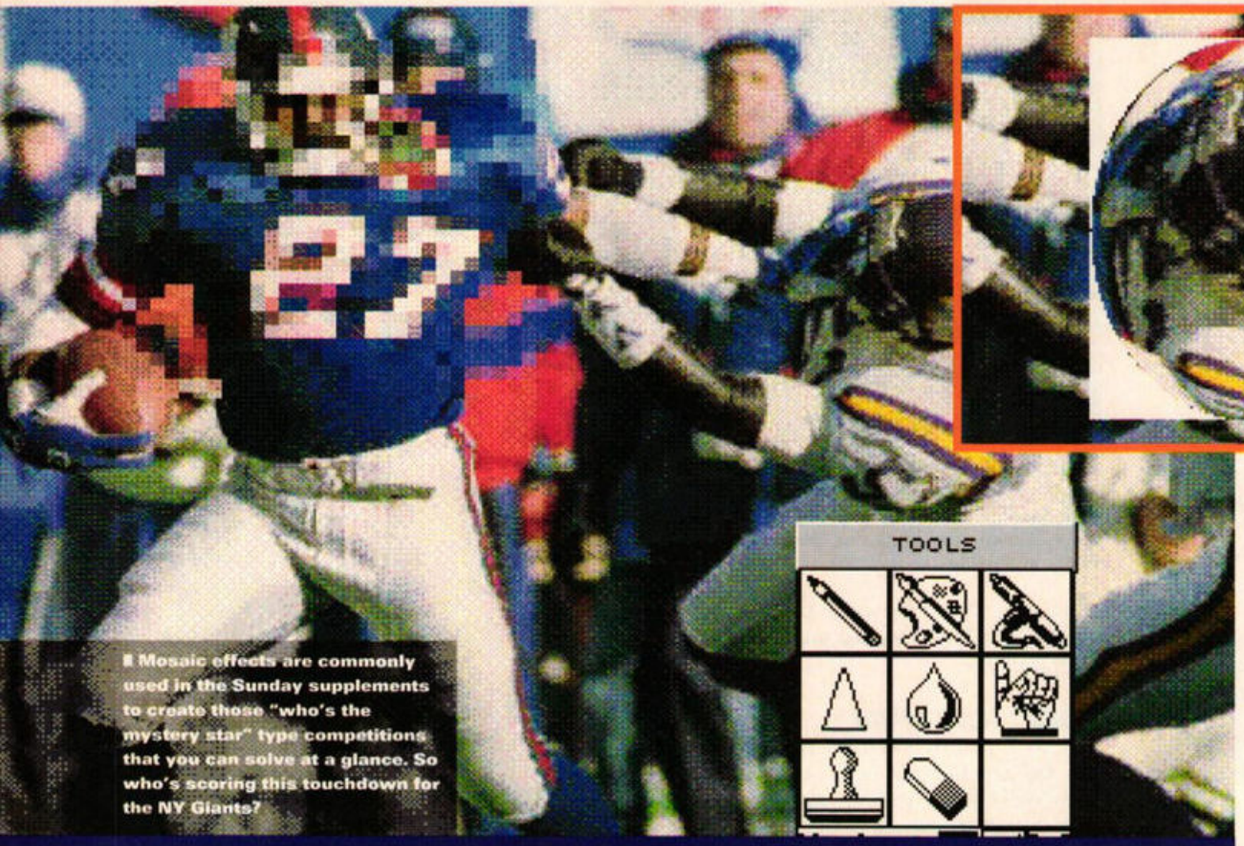
Just about the most intelligent comms protocol there is; if it's available on any BBS you contact then use it – it's practically automatic.

ZOOL

Type in GOLDFISH on the title screen, then use function keys <1> to <5> to skip levels.

ESSENTIAL CONTACTS

City Beat ☎ 0234 327422, Europress ☎ 0625 859333, Maplin ☎ 0702 554161, PJH Publishing ☎ 0480 433455, Power Play ☎ 0457 876705. For more relevant 'phone numbers turn to page 82.



Mosaic effects are commonly used in the Sunday supplements to create those "who's the mystery star" type competitions that you can solve at a glance. So who's scoring this touchdown for the NY Giants?

Other effects stretch and change the shape of an image, or part of an image. You define the area of a picture to modify and process it, if you don't like the changes then your original image can be restored.

ALTERED IMAGES

You can use your Falcon or ST to generate top-notch professional standard images, Clive Parker takes a look at what's on offer

Stunning graphics are what people want to see on their screens, and the Falcon's true colour mode provides exactly that.

The ability to display high resolution photographic quality pictures from floppy disk, hard drive and Kodak Photo-CD brings graphic workstation style power to a home computer for the first time. With a its built-in hard drive, DSP and optional 68882 co-processor, the Falcon is just the machine to take advantage of a gap in the market for a medium priced graphics engine. All that's needed to make the most of this potential market is the imaging software to show off the Falcon's abilities – and that's now starting to arrive.

Image processing

In its simplest form, image processing is just taking a picture and altering it in some way using a specially written program. The modification may be as simple as changing the colour of the palette or something more complicated such as treating the image so it looks as though it's a water-colour painting washed with water to give a smeared effect. These kind of effects – and hundreds more – are used by professional graphics artists and studios to produce the brilliant images we see daily on TV, films, in magazines and in advertising. You get so used to seeing these amazing images that your mind takes in the impossible and accepts it as normal.

The morphing effects used in *Terminator 2* were impossible five years before the film was made because computers just weren't powerful enough then – and it looks pretty outdated already with every other TV commercial or new science fiction series using the latest morphing techniques. The technology is now advancing so quickly that the amazingly life-like computer generated dinosaur effects used in the film *Jurassic Park* were considered to be impossible to achieve when the film was in the early planning stages just one year previously.

"All that's needed to make the most of this potential market is the imaging software to show off the Falcon's abilities"

Obviously the Falcon and ST aren't up to *Jurassic Park* standards when it comes to image processing, though you can still produce some brilliant results using the 24-bit colour packages now appearing for the Falcon and even the ST can generate and process some pretty damn good mono graphics.

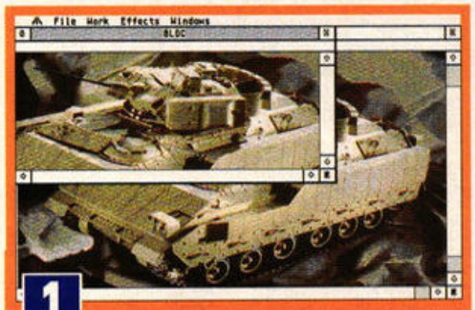
Falcon processing

The Falcon is the graphics flagship of the Atari range of computers, its 32MHz, 24-bit DSP enables it to cope with highly complex graphics calculations in a fraction of the time that even 486DX PCs take to process information.

The basic setup you need for a good graphics workstation is a Falcon with 4MBytes of RAM, at least a 100MBytes internal hard drive for all the software you're going to need, SVGA monitor and a standard Atari monitor. You need two monitors because some Falcon true colour screen resolutions are only possible with the standard

HOW TO MAKE A TANK LOOK MORE ATTRACTIVE WITH THE FALCON

Just to show you how easy it is to use an image processing program, here's a simple example using Compo's Studio Photo to alter a picture to give it much greater impact. Almost any image can be improved in some way



1 Load the picture you're going to work on and select the area you are going to modify, this appears in a separate window ready to be manipulated.

2 Choose the effect you are going to use from the Effects menu, some functions have sub-menus offering extra parameters to change the strength of the effect.

3 We've chosen a contrasting option for the area worked on, and pasted the modified area into the original position on the picture so you can see the difference.

Atari box. If you bear in mind that true colour graphics files can be up to 1MByte in size you can understand why you are likely to need an extra external hard drive for more data storage.

A small graphics tablet like the Tabby (£49.99 from CGS ComputerBild and JCA Europe) is a big help when creating freehand graphics, and some of the new processing software being developed needs a 68882 co-processor installed, this just plugs into a socket beneath the power supply.

All this power adds up to a workstation almost powerful enough to take on a professional Silicon Graphics Indy Workstation at its own game but at a fraction of the cost. The Falcon is obviously more versatile than the ST when it comes to image processing and the range of functions and effects found in the various packages reflect this. Obviously different packages have different functions and features ranging from simple lightening and darkening of a picture to morphing effects and texture mapping an object or shape.

The ST isn't powerful enough to be a true image processing workstation in its own right, but there's some good software around that enables the ST to perform excellent mono image pro-

HINTS 'N' TIPS FOR IMAGE PROCESSING

1 Get the best system you can afford, it's false economy to get less RAM or a smaller hard drive just to save yourself a few pounds.

2 You need both VGA and RGB monitors to use the full range of screen modes possible from your Falcon.

3 Register your software, this ensures that you're always kept up to date with the latest version and get full technical support.

4 Don't try to be too ambitious when you are modifying an image, if you go too far you could ruin the image.

5 Always work on a backup image, never modify an original. It's not worth the risk.

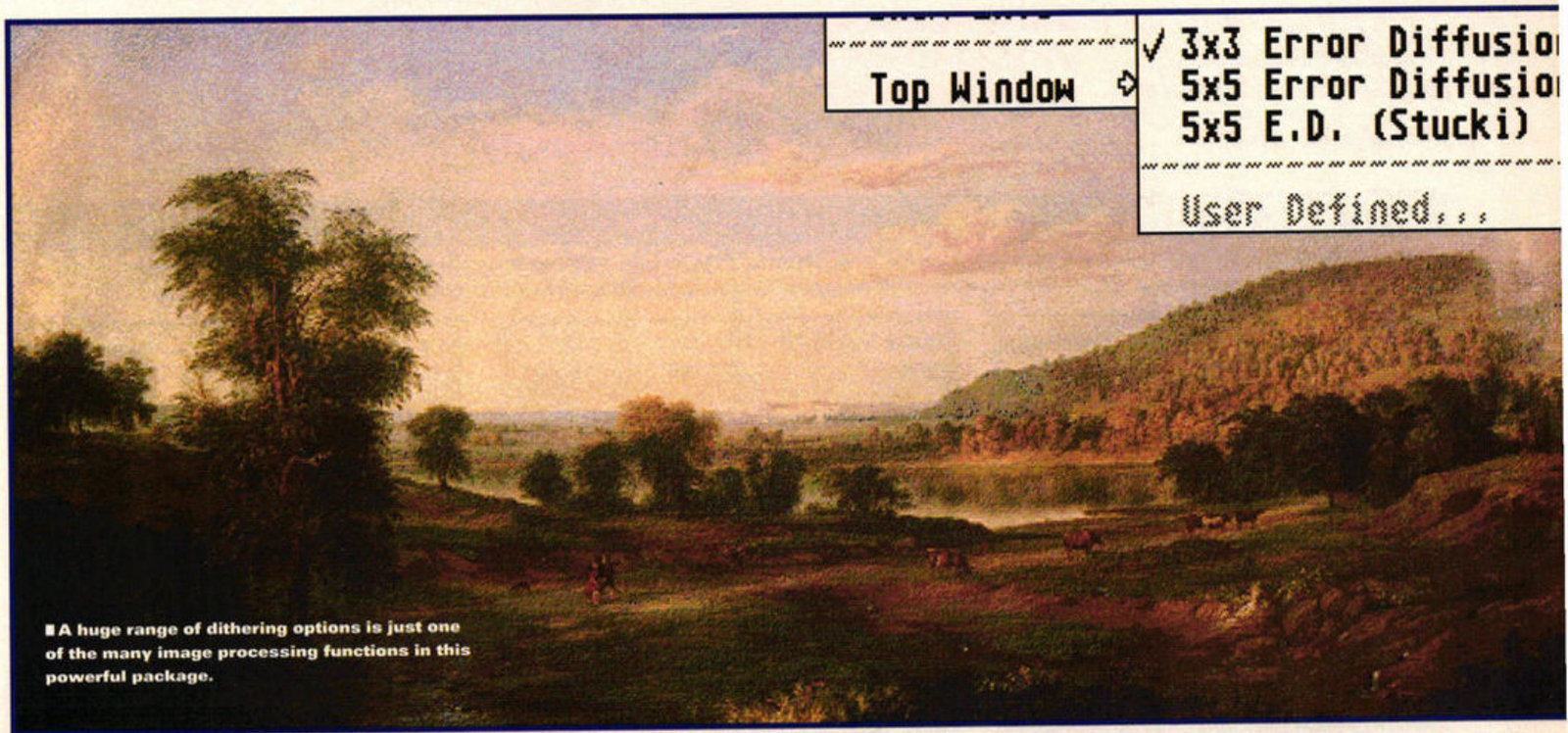
6 Using *Imagecopy 2 Colour* (£20, from the ST Club) you can print full colour images on a colour printer even using a mono ST.

7 Some software can only use a limited number of image formats, check which ones are supported by a program before you buy it.

8 Using contrast and darken functions is a good way to clean up dithering in a colour GIF or JPEG image converted to mono on the ST.

9 If you haven't got NVDI (£49.95, System Solutions) then get it, the increased screen update speed is a real time saver when working with graphics, especially on an ST.

10 For freehand work you can't beat the Tabby graphics tablet, for £50 you get a brilliant graphics tool and you can still use your mouse.



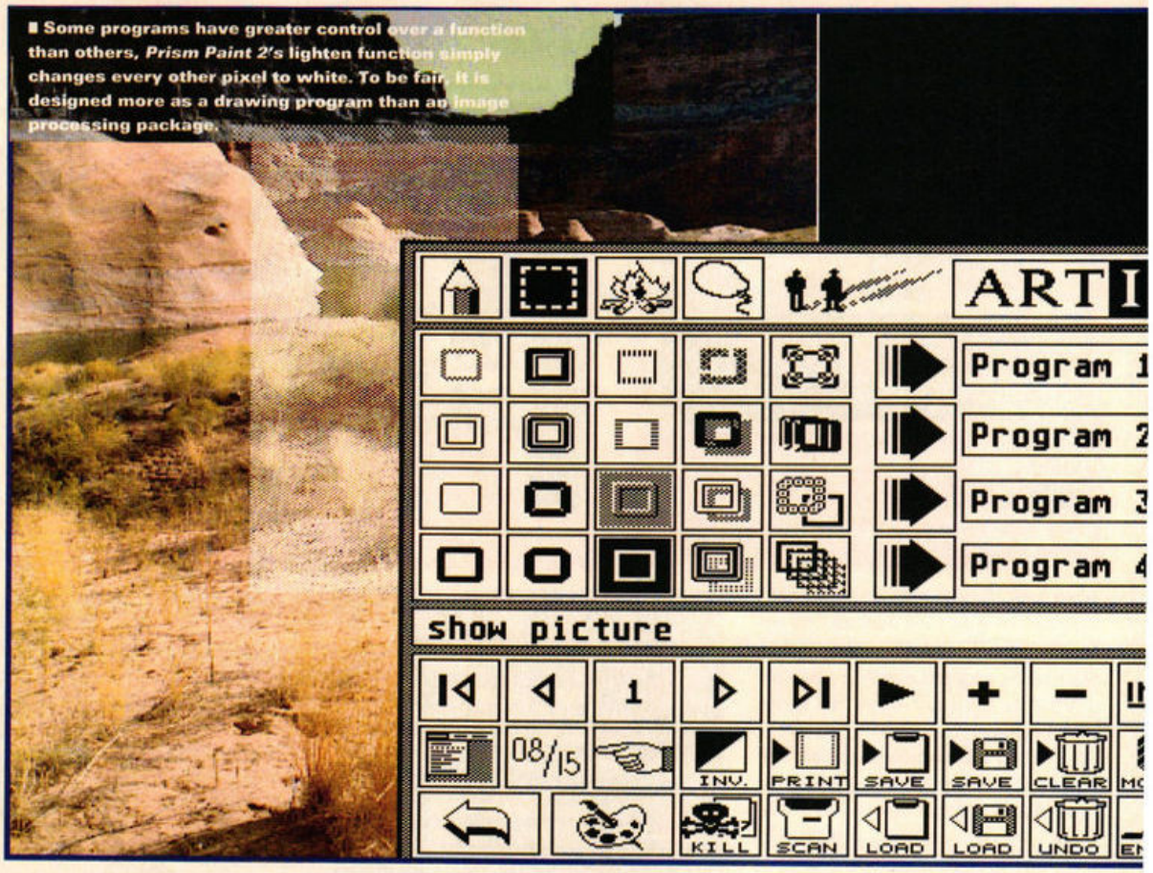
■ A huge range of dithering options is just one of the many image processing functions in this powerful package.

cessing. Some of the new Falcon programs available like *Prism Paint 2* and *Studio Photo* work well on the ST too. To use your ST effectively for image processing you can get by with a surprisingly basic hardware setup. A minimum 1MByte of memory is recommended if you intend doing any serious work on your ST, a high resolution mono monitor and a hard drive are also necessities to image processing. You can just about manage with a pair of floppy drives but your work rate is dramatically slowed down by the irritating length of time it takes to run software and load or save images.

Because the ST can only really work with high resolution mono images you may think that there's not much call for this kind of setup. In fact, many professional and semi-professional artists use mono ST systems to produce their artwork (see the feature in *STF* issue 49, turn to page 58 is you missed it) because mono graphics provide great visual impact, mono graphic design is still just as popular as colour and works out a lot cheaper for the graphics artist.

Apart from the standard graphic functions, image processing software adds many more exotic functions to the artist's toolbox. Images can be darkened, lightened or smeared with water effects to soften harsh outlines. You can use other effects such as charcoal, brushes, masks and block functions to alter complete images or use zoom functions so you can concentrate on specific areas of the picture you're working on.

With new versions of *Retouche Professional* and *Didot Professional* promised soon by CGS ComputerBild, and both *Prism Paint 2* and *Studio Photo* available now, it looks like there's still a bright rosy future ahead for ST image processing. ***stf***



■ Some programs have greater control over a function than others, *Prism Paint 2's* lighten function simply changes every other pixel to white. To be fair, it is designed more as a drawing program than an image processing package.

JARGON BUSTERS

8-bit graphics: Picture files capable of using up to 256 colours.

24-bit graphics: Picture files capable of using up to 16.7 million colours.

Blur: Alters an image to give a soft focus effect.

Contrast: Increasing the contrast in a picture can reduce dithering effects for a sharper picture.

Darken: Makes an image darker.

Despeckle: Gets rid of pixels, to make a cleaner image.

Diffuse: Another method of softening an image.

Dither: A method of reducing the number of colours in a picture.

Emboss: Converts an image so it looks as if its outlines have been embossed onto paper.

GIF: Graphic Interchange Format, file format created by CompuServe to transfer graphic files between platforms.

JPEG: Joint Photographic Expert Group, compressed file format agreed internationally.

Lighten: Makes an image lighter.

Mask: Method of overlaying patterns or graphics over an image, but still letting the original image show through.

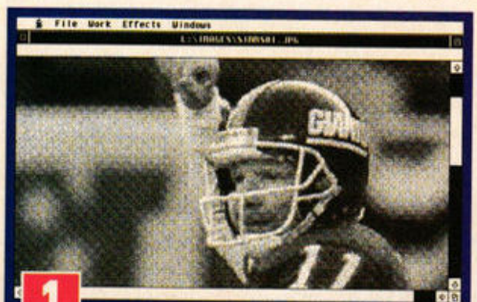
Mosaic: Expands the pixels in an area to give a blocky effect.

TGA: Truevision Targa format. Created by Truevision in the USA, Targa pictures can be up to 24-bit.

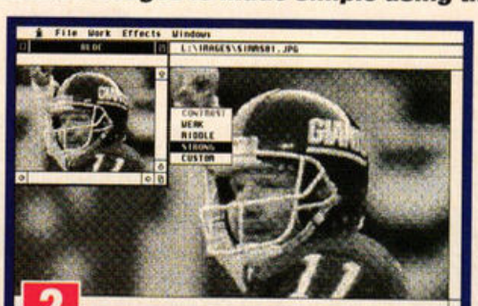
TIFF: Tagged Image File Format, a picture file used on all major computer platforms.

ST PROCESSING

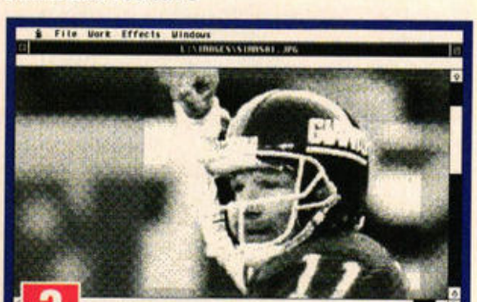
Even though the ST isn't as powerful as the Falcon, Studio Photo can still perform some impressive effects even on the 68000 based machine. Cleaning up dithered images is made simple using the contrast feature



1 Load the image into *Studio Photo*, colour pictures usually get dithered quite badly when changed to mono so you need to clean it up.



2 Cut the block you want to work on using the toolbox option, you can work on this block to test your modifications. Select the strongest Contrast option.



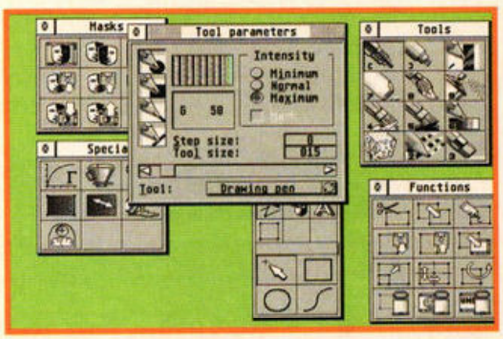
3 If you are satisfied with the resulting image you can paste it into place or modify the whole image. Note the difference between the original and modified.

MINI REVIEWS

CHAGALL
CGS ComputerBild

Chagall is the long awaited 24-bit image processing program from CGS ComputerBild. It has a comprehensive range of functions and add-on modules that makes it just about the most powerful image processing package around for the Falcon at the moment.

One of its more powerful functions is its masking abilities; you can define a specific mask and paint it over an image to give it a window effect. *Chagall* works on the Falcon and STs with colour graphic cards. Reviewed next month.



You can call up *Chagall's* toolboxes and dialog screens at any time while you are working on an image, most tools have a range of sub-menus available.

TRUE IMAGE
Hisoft AVR

True Image is Hisoft's entry into the image processing stakes. Along with other packages, *True Image* supports a wide range of picture formats from all computer platforms enabling thousands of existing images to be used. *True Image* uses the same image loading modules as its partner program *True Paint*, so the program even supports Kodak's PCD image format.

True Image combines image processing functions with some of the usual paint program tools, so you can create and process pictures in the same application.

Images can be treated with an "embossed" effect, where the general outlines of the picture looks as though it is stamped onto a sheet of paper

DA'S PICTURE
CGS ComputerBild

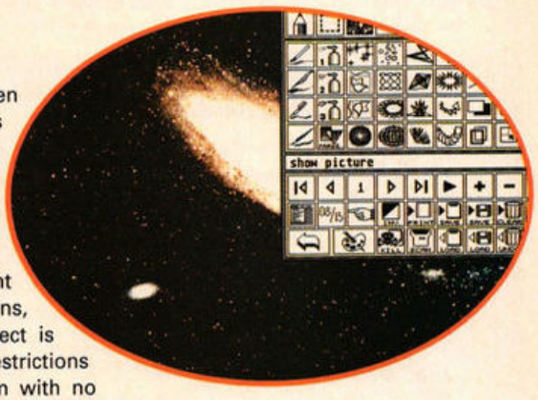
DA's Picture is a 24-bit painting program that is powerful enough to be regarded as an image processing program, even though this isn't its primary function. *DA's Picture* has been created by Digital Arts, the same people behind *DA's Vector* and *DA's Vector Professional*, and works in 24-bit colour on any ST. Probably the most comprehensive paint package for the Falcon, *DA's Picture's* tools can be almost infinitely customised to give you the exact size, function, shape and effect you want. Out soon

Digital Arts do it again with *DA's Picture*, one of the best drawing programs we've seen on the Falcon or ST.

PRISM PAINT 2
16/32 Systems

Prism Paint 2 is not written by the same developers as the original version and is a completely different program that works on both the ST and Falcon.

It has many excellent image processing functions, although the overall effect is let down a little by the restrictions placed on some of them with no way to alter some parameters. The fact that you can create your own customised effects from within the program balances this out to some degree. *Prism Paint 2* is a mixture of paint package and processing package with neither set of functions being implemented quite as well as they could be.

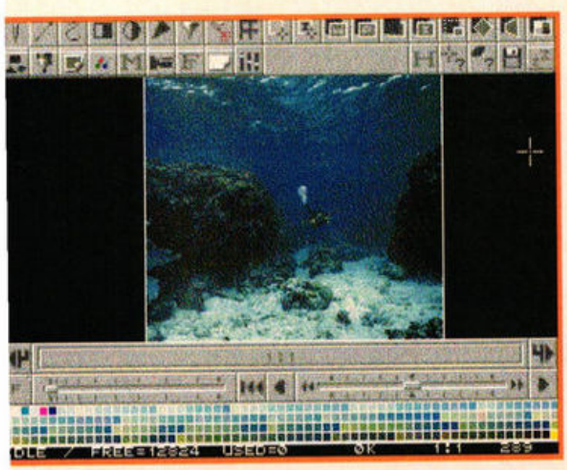


Is it an art package or is it an image processing tool? In fact, *Prism Paint* sits somewhere between the two.

CHROMASTUDIO 24
Floppyshop

ChromaStudio 24 is another 24-bit colour image processing program for the Falcon with a few differences. It's the first professional standard program for the Falcon to have a full morphing studio built in enabling you to create impressive animations, you can use true colour mode on a VGA monitor – impossible according to Atari – and the program performs the same kind of image processing functions as the Silicon Graphics Indy Workstation.

ChromaStudio 24 is compatible with the *Exposé* video digitiser being developed by Titan Designs, it enables you to grab images from video tape directly onto a workscreen. Out soon

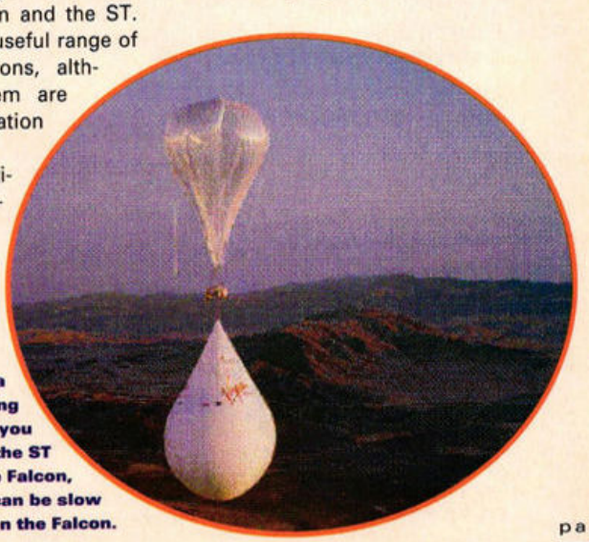


***ChromaStudio 24* is the graphics processing package that the Falcon has been waiting for.**

STUDIO PHOTO
Compo Software

Compo's entry into the image processing market is *Studio Photo*, an easy to use package compatible with the both Falcon and the ST. *Studio Photo* has a useful range of manipulation functions, although some of them are rather slow in operation even on the Falcon.

Fully compatible with the ST, *Studio Photo* must be given serious consideration by anyone interested in image manipulation. A useful part of the *Studio Photo* program is the inclusion of CD-ROM drivers for MultiTOS, a vital part of the multi-tasking operating system not supplied as standard when you get your Falcon.



***Studio Photo* is a powerful processing package that you can use with both the ST and the Falcon, some processes can be slow even on the Falcon.**

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(ask for our FREE Falcon catalogue)

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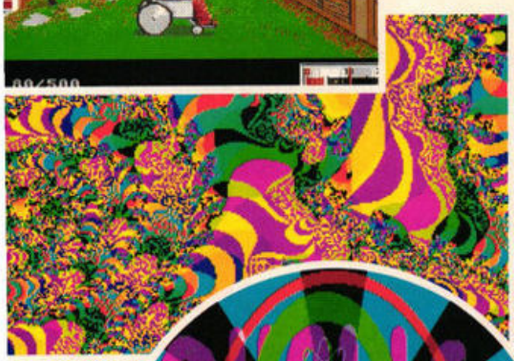
PUBLIC SECTOR



Four pages of PD are yours, folks, as we discover just what PD is and review the good, bad and ugly programs from this month's free batch...

Public Sector is the section of the magazine where we take a look at the best and worst of the new software available in the Public Domain. PD veterans should already know all about Public Domain software and how it works, but the the subject can be a bit daunting for first-timers. So, further down the page we blow the lid on Public Domain, and explain the jargon.

What is PD?

Public Domain libraries have been around since the early '80s covering all sorts of home computers, so it's only natural that several were set up to cover the ST market. The idea of Public Domain is to distribute programs at no cost, so that swapping all your programs with your friends is perfectly legal. Public Domain libraries charge a small fee for their programs, but the majority of the money pays for the floppy disks, and the rest pays for the company's overheads and expenses.

Later, some programmers considered that they should be paid some money for their work, but they didn't want to sell their programs commercially. So, they put a clause in their Public Domain releases which said if you use their program, then you are obliged to pay a small fee directly to the programmer. This became known as Shareware.

Now, many years later, we have four different types of program which still reside under the Public Domain banner, albeit loosely. Freeware programs are distributed for absolutely no cost; PD authors can ask for some money from users, but it's not obligatory; with Shareware you are obliged to pay a set fee if you find the program useful; and Licenceware programs are sold as commercial software by some PD companies. Phew! You generally find that Licenceware games and programs are better quality than the others, but even so don't expect commercial quality – after all, we're still only talking about a few quid for each disk.

Easy PD

The main thing to remember about approaching the Public Domain scene is not to be scared. It's merely a collection of music, graphics, utilities and games which hobbyists throughout the world have written and chosen to distribute rather than sell. The concept is very simple: if a programmer, artist or musician creates something that people might want, but wouldn't necessarily pay for, then the Public Domain is a good way of distributing it to a wider audience.

It's because of this that such a broad range of programs can be found. If you want a patch editor program for a specific synthesizer, say, then contact a PD library and the chances are they've got the program for you. Go into a shop to buy one, however, and you probably can't get one at any price. Similarly with music and graphics – if you want some music to play, some graphics to look at, or some programs to create them, then PD is the place to find them.

Most PD libraries are more than happy to help you in your search for a particular program; while of course *ST FORMAT* review a few PD programs every month. Take the first step by ringing or writing to a PD library from our PD Directory on page 35, and you may wonder what you did without it. Read on for the latest reviews of the PD releases. ***stf***

AT-A-GLANCE JARGON

Demo
A collection of demonstrations showing the ST's capabilities. Sometimes music, graphics, occasionally both. There are hundreds of demos available which run on all models of ST and Falcon. Sometimes demos of full-price software are available.

Freeware
Any program which may be distributed freely within the Public Domain, with no profit made from sales is known as Freeware.

Licenceware
A kind of budget range of commercial software, Licenceware is distributed by some PD libraries.

Shareware
Programmers sometimes include a clause with their programs which asks that people who like and use their software should send them a small fee.

Virus
Something to beware of when using Public Domain programs. Occasionally nasty people put viruses on their or other people's programs, which are then distributed into the Public Domain. It's worth making sure that you switch your ST off for around 30 seconds or so before and after using programs, especially Public Domain ones. By doing this you're simply trying to make sure that the memory is completely clear. There's nothing to lose any sleep over. As far as we know, there has never been a damaging ST virus, but it's worth taking this precaution just in case.

ART AND MUSIC

BOBBY NESS CLIP-ART

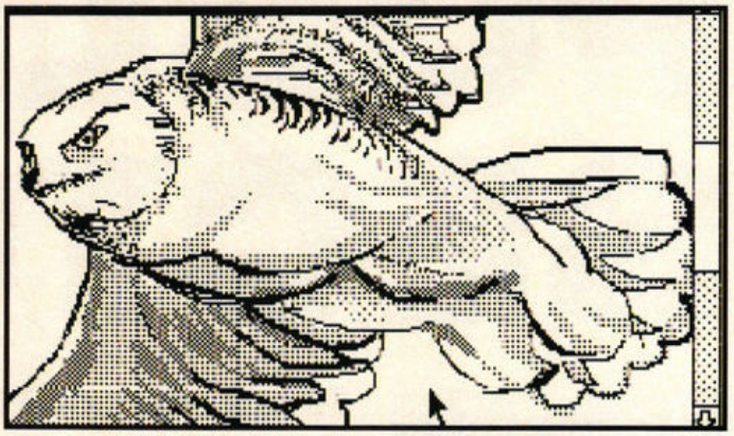
LAPD, DISK A 83

Creating a poster or a newsletter can be problematic if you can't draw successfully. However great your layout and word content are, if it doesn't look good the chances are it won't get a second glance, for example, just imagine how this page would look if was just filled with words.

An excellent solution to this problem comes in the form of clip-art. Several disks are available from most PD libraries, containing several pictures of everyday objects, which you can use to brighten up your creation. This particular disk contains getting on for 100 images, all in monochrome only. Subjects range from girls to fast cars, animals to, er, nude girls. It's a little bit like buying a copy of *Playboy*, actually (that is, assuming that the copy happens to be in black and white and all the pics are hand-drawn.)

Although the images of women are absolutely atrocious (opinion has it that an orang-utan armed with an Etch-a-Sketch could do better), the inanimate objects are not bad at all. If you require a monochrome picture of a night owl or a 1940 V12 Aston Martin Lagonda, then look no further.

***STF* RATING 76%**



Sadly, we can't show you pictures of naked women. Not for moral reasons, but because they're too bad to look at. Take a look at this night owl instead.

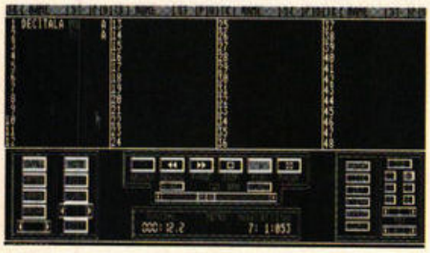
KCS OMEGA UTILITIES

CALEDONIA, PDL DISK MU-60

Caledonia's *KCS Omega* Utility disk contains a set of programs and files designed to be used in conjunction with *KCS Omega* (*ST FORMAT* Cover Disk 54). The first of the two utilities, *Decitala*, contains a complete set of the rhythmic motifs used in Indian music, you can load the file DECITALA.ALL directly into the SongEdit module of *KCS Omega*. A full description of the structure of Indian music is supplied in the accompanying text file.

The other folder contains files for Microtones, Temperaments and the Programmable Variations Generator, when decompacted the contents of this folder fills four double-sided disks. Using these files enables you to use alternative scales to the familiar 12 note octave found on a keyboard, in effect creating your own scales "between the keys" of the keyboard. Several scaling systems are included for you to use including puretone and Pythagorean scales. Full – and we mean full – explanations of the scales and how they are created are contained in a huge manual, along with instructions for using the scales on your synth. This is one set of files that appeals to theoretical musicians but not many others, and an enormous amount of work has gone into creating the data on this disk.

***STF* RATING 75%**



***KCS Omega* up and running with the *Decitala* Indian rhythmic motifs loaded, the extra rhythms and the extra scales.**

CHAOS CALC 2

FLOPPYSHOP, DISK ART 3871

Graphics and fractal programs are among the most popular PD software you can get, more appear all the time offering yet more permutations of the Mandelbrot, Julia and other Chaos sets. *Chaos Calc 2* is a fast fractal generator written in *GFA Basic* and boasts all the usual features such as zooming, colour cycling, variable palettes and a variety of different plotting methods. *Chaos Calc 2* enables you to quickly and easily create different fractals and has a dozen example files for you to load.

Good stuff. The disk is stuffed with other great fractal programs and picture viewers, have a look at *A Fractal Journey Into Space*.

***STF* RATING 74%**

Ooooh, look. It's a fractal. Well, we've never seen one of those before. *Chaos Calc 2* is just one of the splendid graphics programs on this disk.

DISK MAGAZINE

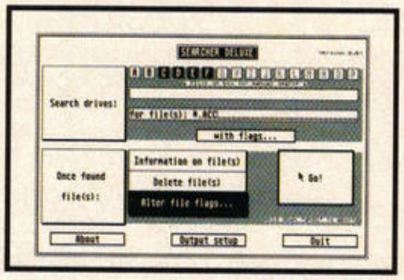
DISK MAGAZINE 38

ST CLUB, DISK DMG38

As usual, the *ST Club Disk Magazine* is packed with the best of the new PD and Shareware software available in the library. There's quite a mixed bag of utilities, games and programming listings from *ST Applications* on the latest disk, ranging from Falcon cache utilities to a comprehensive hard drive search routine, *Searcher Deluxe*. *Searcher* enables you to scan through your hard drive partitions for specific files using all the usual wildcards, once a file is found you can either display the information on-screen, delete the files or change their attributes. It's elegant and simple to use.

All *ST Club Disk Mag* files are archived in LZH format and a simple de-archiver is included enabling you to unpack the software. If you get this disk then you are almost guaranteed to find at least a third of the 27 files and utilities useful to you.

***STF* RATING 82%**



Easy to use and more powerful than a brace of locomotives, *Searcher Deluxe* helps you find that rogue program file and terminate it with extreme prejudice.

DEMOS

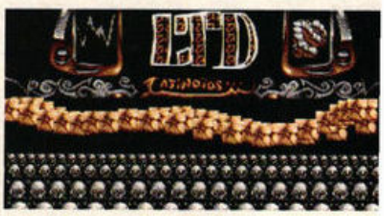
PLUCKED GOOSE

FLOPPYSHOP, DISK DEM 3796

Another motley collection of mini-demos, this time put together by Cybernetics. The usual stuff: spinning bobs, plasma effects, tinkly music. There are three features worth noting, though: the Hemoroids (sic) section contains a series of bobs (moving circles) which move in a tight spiral, with more and more bobs being added in to the screen until the entire screen is filled. With no slow down, this is a good little piece of programming – especially, as it is claimed, the entire demo was programmed in either *GFA Basic* or C.

Next, the Latinoids section is rather interesting. Five rows of chrome skulls scroll past in parallax (the ones nearer the back are smaller and moving more slowly), while an odd mix of gold shapes moves frantically above them. Other smaller shapes move around simultaneously, and possibly the best thing about it is that it doesn't feature a scrolling message! This is the second demo in four issues to feature a version of Martin Galway's *Comic Bakery* tune as the main theme. Coincidence?

***STF* RATING 74%**



One of many sections in the *Plucked Goose* demo, but unrivalled in its weirdness.

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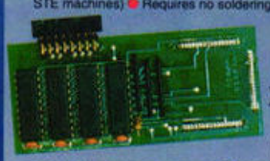

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N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

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GAMES

IMPERIAL CONQUEST

LAPD DISK G 324
SHAREWARE

Serious Games incarnation of the age-old game of *Conquest* sets 16 ancient Mediterranean civilisations in a war to survive and conquer.

There are five powerful nations, including Rome, Carthage and Macedonia, which were voted the countries most likely to succeed out of the 16 in their class. The others include Gaul and Greece, which are reasonably-sized, but couldn't really fight their way out of a paper bag, and others which are so small that they are lucky to see out the day without being overthrown. Your job is to see one of these nations through its most difficult times, arranging both offensive and defensive armies, like an ancient Mediterranean Stormin' Norman, if you like.

Play can be viewed in three ways: the entire Med map; the Unit map, which shows an area in some detail for moving your armies around; and the Battle area, which is a kind of chess-style strategy scenario where two armies position their units to gain advantage over the other. This is the nitty-gritty area, where the game can be won or lost. Not only is the game good, but the instructions are excellent – so if you like the idea get this Shareware save-disabled version and try it out.

Lots of bizarre place names which, once, formed the Mediterranean. Not like the mishmash of islands we today, but isles with class, culture, and wracked with war and famine.

***STF* RATING 89%**

HEARTBREAK

LAPD DISK L 66
LICENCEWARE, £3

Tetris clones are few and far-between these days, probably because the PD scene was flooded with them a couple of years ago after the original game was released. *Heartbreak*, though, is a relatively original variation on the concept, and it's a very good game to play.

A grid of 49 squares forms the play area and, like *Tetris*, a variety of tile formations appear which must be positioned in the grid. The object is to create as many rows of seven tiles as possible, which isn't as easy as it sounds given that there is a

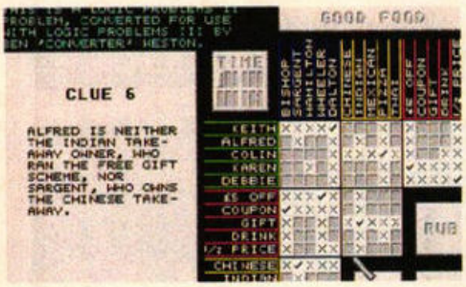
LOGIC PROBLEMS 3

LAPD DISK L 67
LICENCEWARE, £3

Following a good review in issue 50 of *ST FORMAT*, Ben Weston returns with some more logic problems for you to solve. Lots more, in fact. Having written a pretty menu routine to display the problems on disk, Ben's managed to cram 11 of them in this time. The idea is the same: match up five people with their characteristics using several clues provided. The clues tell you key points in the problem, but then you must use your logic and powers of deduction to solve the particular mystery.

They're just like the type to be found in puzzle books, if slightly more difficult, taking between 15 and 30 minutes to complete. The subjects are suitably varied, and the disk keeps you occupied for hours if brain-teasers are your bag.

***STF* RATING 80%**



***Good Food* is a typical example of a logic problem: match up Christian names with surnames, and then find the type of restaurant owned, and the special offer currently available.**

FREAKED OUT 2

MERLIN PD, DISK POW 16
LICENCEWARE, £3

Another fiendish puzzle game from Powerfist Productions, *Freaked Out 2* stars a new kind of spacecraft which needs testing. You, as a rookie pilot, have been chosen along with an experienced pilot (your ST) to command the ship and move it around lots of levels solving puzzles, picking up points and avoiding baddies. Some wibbly storyline is tacked on to make it more realistic, but that's the short, back and sides of it.

Each level is made up of a grid of squares, and you can use the joystick to move around one square at a time. Walls block your path, while arrow squares only enable you to pass in one direction. Triangle squares enable you to jump over walls, and the object of the game is to move from the start square to the exit square on each screen. You have a very small time limit, so you need to be quick on the joystick – if you're particularly adept, there are points to be picked up along the way, but this uses up valuable time. A good puzzler.

***STF* RATING 78%**

Some levels in *Freaked Out 2* lull you into a false sense of security, it looks easy to complete but there are lots of traps lurking to kill you.

UTILITIES

SUPERCARD 3.02

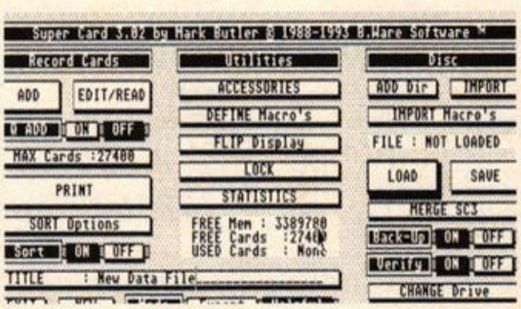
FLOPPYSHOP, DISK UTL4145

You should all be reasonably familiar with the versatile *Supercard* database in its earlier forms – it's even appeared on the *ST FORMAT* Cover Disk a couple of times.

This is the latest version of *Supercard 3* and is fully functional in every way. Though you are just limited to the number of entries you can make and recurring "please register me" messages at various intervals. So what's new with the latest version? Several minor bugs have been fixed and there are many improvements over v2.52. You can now use pictures in your files, define up to 60 macros, printing has been improved, and everything runs in smoother, faster machine code.

Floppyshop have included a handy convertor program on the disk enabling you to read data files in *B Base 2* format, *Supercard 1*, *2* and *3* formats, ASCII and *First Word Plus* files and save them as any of the other formats. The convertor program is a superb complement to *Supercard 3* and makes this disk well worth getting.

***STF* RATING 84%**



It's *Supercard 3*, probably the most versatile Shareware database program ever seen on the ST.

CHESS-MATE

LAPD, DISK G 344
SHAREWARE

Not long ago, somebody wrote in to *ST FORMAT* asking why there have been no reviews recently of chess programs on the ST. Well, here's one. Before you send of your cash, take note – *Chess-mate* is a chess analysis program first and foremost. You can play chess with it, but only human against human – there's no chess-playing ability in the program.

The analysis side of things comes in with the ability to input the positions of the pieces anywhere on the board, then resume play from that position. So, you could take a position from, say, a game from the recent Kasparov vs Short championship, and play some alternative moves – perhaps create a situation where Short wins! The positions can be saved to disk, so a library of chess positions can be created – indeed, a library of 20 from the PCA World Championship '93 are provided on this Shareware disk. Functions also available are a clock to time your games, and an auto-score facility. Everything you need – apart from an opponent, of course.

Pink... very pink. *Chess-mate's* a chess analysis program, enabling you to enter moves from a game of chess and, er, analyse them. And it's also a cunning pun on the phrase "Checkmate." Presumably.

***STF* RATING 80%**

"Room for four ghosts, guv?" "No, sorry mate, you're the wrong shape. Come back when you're square, or better still, a straight line."

short time limit for each shape. Score is accumulated depending on the value of the tiles in each row, including several types which multiply or divide the value of the row by two or three. It's an extraordinarily difficult game, difficult even to complete one level, but it has an immediate appeal which makes you play again and again to improve your high-score, which is saved to disk after you play.

***STF* RATING 88%**

WORLD FIGHTING CHAMPIONSHIP

FLOPPYSHOP, DISK GAM 3742C
LICENCEWARE

Blimey – a *Street Fighter 2* clone in the Public Domain! Well, not strictly a clone, but certainly an attempt, which is quite a brave move for the author. *World Fighting Championship* features three different characters (Ben, Danny and Steve from Britain, USA and Australia respectively), who look mean, unshaven and extremely hard. A bit like a streetfighter, really – the type you would get in real-life as opposed to the more fantastic characters in the coin-op game.

It's worth pointing out that while the idea of the game is strong, and the presentation is excellent, sadly the game itself is, well, kind of like *International Karate* without the knobs on. The moves are sound enough, as is the collision detection, which is more than you normally expect from a PD fighting game, so it's not at all bad. But keep it to yourself and don't show it to your friend who owns either *International Karate* or *Street Fighter 2*, for fear of being laughed at. Not a bad attempt.

***STF* RATING 70%**

It looks as though Ben is being pummelled by Steve. Not sure what the token Japanese script is for down the sides - the fight is taking place in Australia...

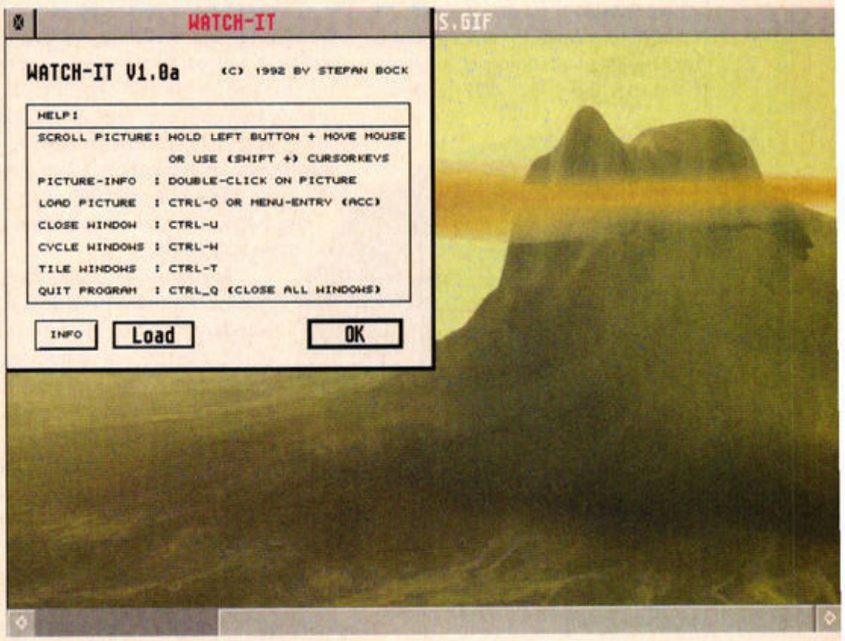
FALCON

WATCH IT

FLOPPYSHOP
DISKS F4222, F4220

We all know the Falcon is capable of displaying wonderful 256 colour and true colour graphic files but if you haven't got a good Falcon paint program then there's very little you can do to view them. Fortunately there are more and more picture viewers appearing in PD libraries for the Falcon, and *Watch It* is yet another GIF file viewer that enables you to show off your Falcon's graphics capabilities to your friends. *Watch It* is supplied with a selection of good quality GIF pictures on each disk, in fact, it's better to say that the GIF picture files are supplied with *Watch It* rather than the other way round. The basic program is nothing more than a picture loader that supplies a bit of info on the picture files loaded. Future versions promise to support more file formats and have more display options, though. The pictures vary in quality from average to excellent, if you want to build up a library of graphic images you could do worse than start with these disks.

***STF* RATING 75%**



Just one of the stunning pictures you can view from the Floppyshop *Watch It* disks, and there are plenty more where this came from.

STOS ADVENTURE CREATOR

FLOPPYSHOP, DISK UTL 4142

The *STOS Adventure Creator*, or *SAC*, enables you to create your own adventure games in *STOS* using all the features of the language in your game. You're not just restricted to using pictures and text in your adventure, you can include sound samples and tracker tunes in the code of your game to liven it up a little.

The game creation utility is quite comprehensive, enabling you to simply construct a map of the game and add objects, descriptions and examine options in your game. The games you create are pretty standard text affairs with static still graphics, the demo game provided has little graphic content apart from a title screen to inspire you. The game creator is easy enough to use and the example game provided gives you some helpful hints. A comprehensive text manual on the disk is an invaluable guide to planning and creating text adventures, if a few more options were added they would turn this good program into a great one.

***STF* RATING 64%**

THE *ST FORMAT* PD DIRECTORY

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RAYSTART

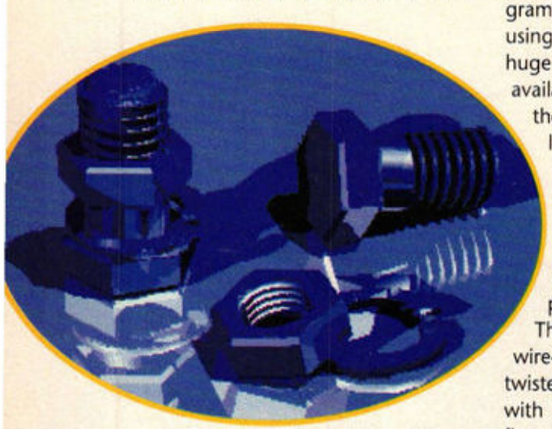
Another raytracing package joins the market and jumps about to attract your attention

When it comes to the cutting edge of graphics there is little that touches raytracing. The flash special effects in films like *Jurassic Park* show what is possible – images so close to reality it's breathtaking. Raytracing on the ST has been around for a while, but is now enjoying something of a revival. Recent packages like *POV Raytrace, InShape* and *Xenomorph* prove that the ST can raytrace with the best of them. Joining the new wave of renderers is *Raystart* from Lexicor, purveyors of some of the finest graphics software available for your ST.

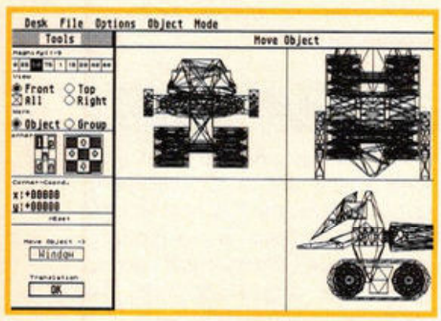
Raystart is a complete package, it has a full 3D modelling section as well as the rendering engine. There's no mucking about with separate programs. You can load objects created using *Sculpt* or *CAD-3D2*, so there is a huge range of compatible 3D objects available both commercially and in the Public Domain, if you need a little inspiration.

Raytracing is a two stage process. First you need the 3D objects which you then throw in the direction of some deliciously complicated maths to produce the final masterpiece. The 3D objects are built from wire-frame models. These are twisted, rotated and mucked about with until you have the shape you first thought of. They are then assigned colours and surface properties. You then give your scene one or more lights and set the viewing angle before setting the rendering process going. Although even reflective spheres on a chessboard pattern floor look good, the secret to seriously smart raytraced images is good 3D shapes to start off with.

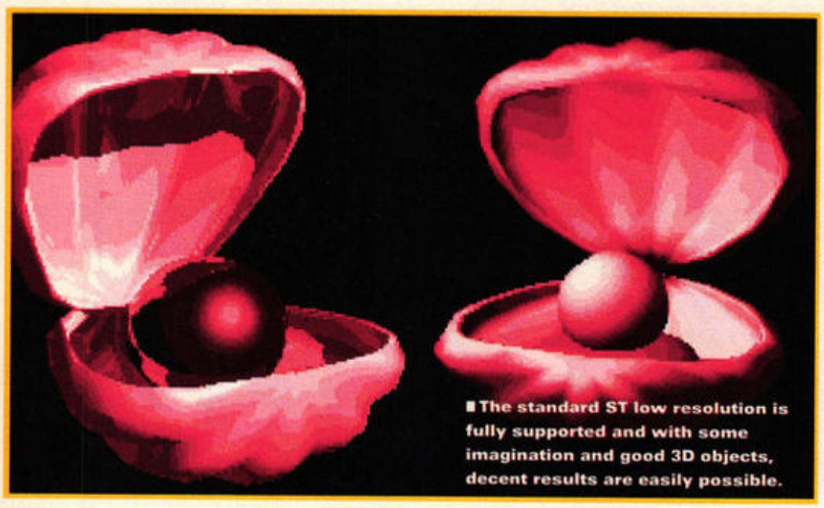
As all the best software should, *Raystart* runs in any resolution on any of the Atari range, including true colour mode on the Falcon and the new Nova graphics cards. Obviously the higher resolution the screen the easier it is to design your objects. The interface uses the familiar GEM environment of windows, menus and dialog boxes. There are plenty of keyboard short-cuts to speed things up. Along with the menus are toolboxes – which one is displayed depends on what mode you are in. The main window gives you a view of your object, it only shows currently selected objects, which can get irritating. The first thing you have to do with any object is go to the Object menu and select all the elements of the object before you can see it. It does mean you can render parts in isolation which is very handy.



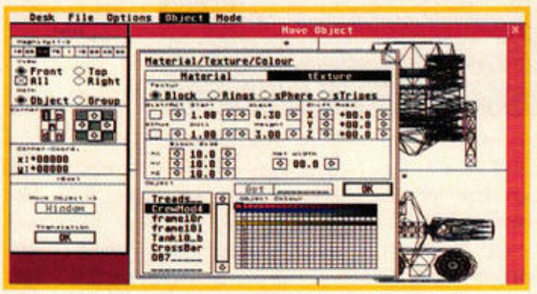
Above - Even limited to 16 colours *Raystart* can produce some nutty pictures. Er, sorry about that.



High resolution on an ST, ideal for creating and editing your objects and scenes. You can even render in monochrome using dithered patterns.



The standard ST low resolution is fully supported and with some imagination and good 3D objects, decent results are easily possible.



Each object can be given a simple patterned texture in another colour. These can then be affected by either a random or sine wave distortion. Effects like marble are possible.

> **"*Raystart* is a complete package, it has a full 3D modelling section as well as the rendering engine"**

The object of the matter

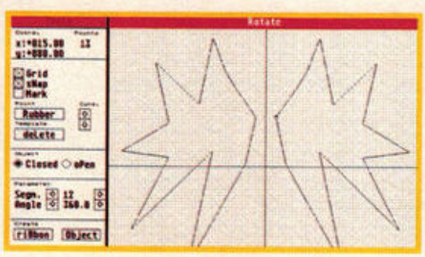
Creating complex 3D objects is never going to be a doddle and however good a modelling program, it still takes considerable practice to create detailed objects. Basic objects are built from either rotated or extruded templates.

Raystart has some powerful modelling tools including functional objects created using mathematical formula such as Sin and Log, some amazing shapes are possible. Unfortunately, the manual gives few clues as to how to go about it. You might find it easier to use the option of loading objects as text descriptions, similar to *POV* script files. No hint in the manual as to the syntax of the description language, though.

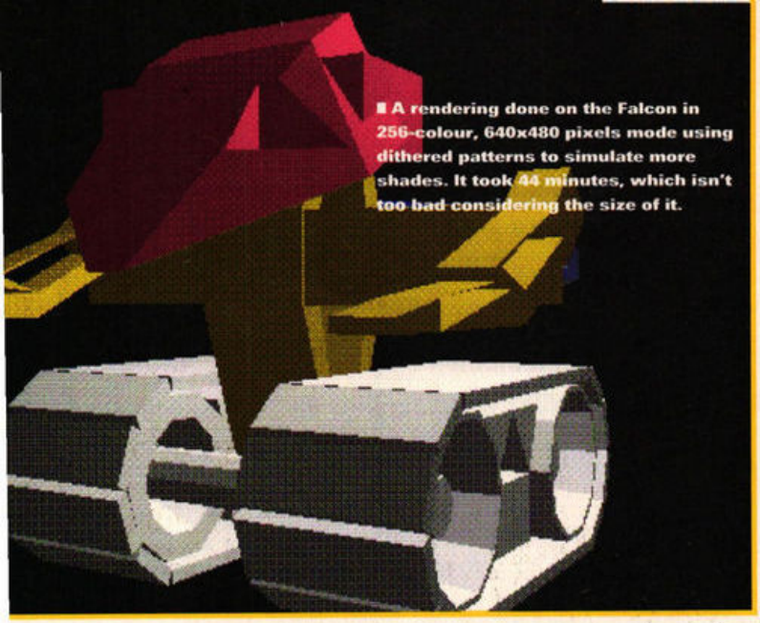
One very powerful feature is analytical objects. Instead of being generated as a series of flat polygons, these are created as single objects. These are raytraced much, much faster and produce smoother surfaces. There are four kinds, spheres, discs and open and closed cylinders.

If you are already familiar with *Sculpt* or *CAD-3D2* then you're better off sticking with them and importing your objects into *Raystart*. Apart from some the ingenious mathematical and analytical objects, *Raystart* isn't nearly as good at building 3D objects.

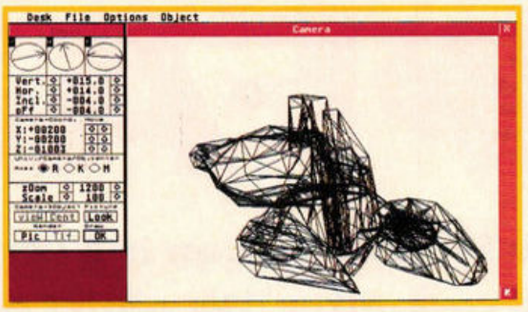
Once created, objects can be moved, scaled and rotated on all three axes within your scene. Instead of the more usual method of assigning an object a base colour and letting the raytracer work out any available shades, *Raystart* assigns each object a set of shades, with up to eight or 25 shades in each set. This limits the number of available colours. There are more than enough for decent 256-colour pictures, but it falls short of the standard required for really detailed scenes, although it makes for quicker rendering. Objects can be given



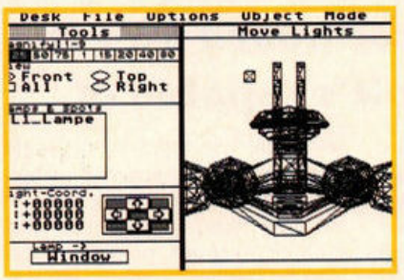
The rotate object screen. You can put your template into a spin and create a new 3D object. There's no simple way of creating primitives, which is surprising.



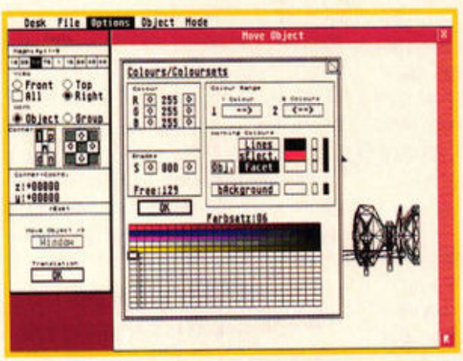
A rendering done on the Falcon in 256-colour, 640x480 pixels mode using dithered patterns to simulate more shades. It took 44 minutes, which isn't too bad considering the size of it.



The camera mode, running on a Falcon. Here you set up the position of the objects and the viewing point.



***Raystart* running in ST low resolution, not a lot of room on-screen for your objects.**



Above - The colour selection box. Each object is assigned a set of shades to use. A novel approach and useful for systems with a limited number of available colours.

a transparency, surface shine and reflective qualities as well as textures. There are simple patterns such as rings or blocks which can be distorted, randomly or with Sine waves. The effects are fairly good and refreshingly fast. You can't texture-map another picture onto an object, so very detailed surfaces aren't possible.

A view on the world

You can have up to six lights as well as an ambient light. Each light has a variable intensity and can be a parallel light, spotlight or ordinary lamp. All that's left to do is set up the camera. This can be moved in all axes using either an object, the camera or the universe centre to move relative to, so any angle is possible. The degree of control you have over the final rendering process is impressive. You can stop raytracing at any point and resume it again later, something all raytracers should be capable of.

Raystart can either render in the screen resolution you are running in, even monochrome, or to disk as a TIFF file. When running on a standard ST in low resolution you are limited to 16 colours, good but not quite jaw-dropping. You can render in either hidden line, scanline or full raytracing mode. You can also turn the textures, interpolation, shine, shadows, reflectivity and more on and off. There is also anti-aliasing. Colours can be dithered, taken strictly from the set of shades assigned to an object or set to get the best possible results. You can do quick, rough renderings to see how things are going before committing yourself to a final long tea break. Rendering times are quick, even with the complex functions enabled. Unfortunately you can't render screens bigger than the resolution you are running in. Finished pictures can be saved as *Neochrome, Degas Elite,* XIMG, PIC or TIFF formats.

To get more colours than the resolution you are running in enables, you can render to disk as a true colour TIFF. These give the very best results. Programs like *Photochrome* do an excellent job of displaying 24-bit pictures on a standard ST.

"POV Raytrace, InShape and Xenomorph prove that the ST can raytrace with the best of them"

Final analysis

Raystart is undoubtedly a good program, it's designed to get the most from any system. Anyone who has left machines running overnight to render *POV* scenes can appreciate its speed. The object editor isn't the friendliest ever and it can be difficult to be accurate, but it does have some useful functions. The control over the rendering process is excellent. It lacks the outright power of the big league raytracers, but is quick and relatively easy to use.

It is badly let down by the manual, which covers each area briefly, and not very helpfully. Some functions are only referred to, leaving you to figure them out for yourself. This is a worrying trend with many new programs, particularly those translated from other languages. Many of *Raystart's* features are fairly advanced but leaving the user to guess and experiment is unforgivable.

For the same money you could have *Xenomorph,* a more capable package altogether, with its 24-bit texture mapping, and just as easy to use. *Raystart* is fast and pretty damn good at 16 or 256 colour rendering, but it doesn't pack the same punch.

CHRIS LLOYD

Left - The sort of quality *Raystart* is ultimately capable of. This example scene is supplied with *Raystart*. You can dissect the objects and settings to see how a professional does it.

A rendering saved to disk as a 24-bit TIFF file. The tracks have been given a simple texture. It's 320x200 pixels. Although the file is 24-bit, the picture isn't. It's limited by the colour ranges selected for each object.

Raystart

£59 16/32 Systems
☎ 0634 710788

Highs
- Runs on entire Atari range in all resolutions.
- Makes good use of ST low resolution.
- Pretty fast rendering.

Lows
- Limited number of colours available for more powerful systems.
- Terrible manual.
- Awkward 3D object creation.

What else?
- *InShape,* £149 from CGS ComputerBild ☎ 081 679 7307, a very powerful professional package and *Xenomorph,* £59 from 16/32 Systems ☎ 0634 710788, a superb 24-bit raytracing package.

STF RATING 79%

Remember that opening your Falcon if it's less than 12 months old invalidates your guarantee

FALCON

Like your ST, your Falcon is a very versatile and powerful computer. We plug Compo Software's 286 PC emulator board into the Falcon and take a look at what it's capable of...

So you think there's no software around for you to run on your Falcon? Well you might be surprised to know that there are potentially over 100,000 different PD and Shareware programs available that run on your Falcon right now – with the help of a PC emulator.

So what's the point of getting the Falcon with its brilliant sound and graphics processing hardware if you're just going to run PC software on it? Well, while more and more direct-to-disk (D2D) and image processing software is becoming available for the Falcon, many of the more mundane types of software such as accounts programs, label printing utilities, spreadsheets and databases have been largely ignored. The major exception to this is *AtariWorks* which is bundled with the Falcon in the US and is available in the UK from Hisoft (☎ 0525 718181, £129.99 including SpeedoGDOS).

The point of using a PC emulator is that the PC is the most popular computer in the world and has the most software written for it, so why not take advantage and use all this stuff with your Falcon? The other main reason for using a PC emulator with your Falcon is that you can now use the same software on your Falcon as you use at work – you're unlikely to see an office lined with Atari Falcons just yet, so you can pop the disk into your drive and carry on with what you were doing without losing style, font and formatting information in a word processing document.

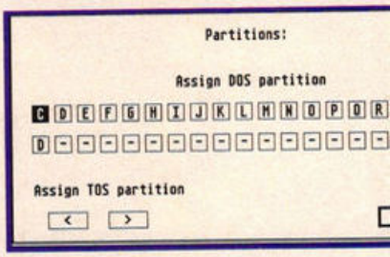
A small circuit board and a floppy disk, just add a Falcon and a DOS system disk and you can run loads of PC software - including *Windows*.

Speeding up

For a piece of hardware that turns your Falcon into a 286 PC, the Falcon Speed board is a remarkably compact piece of kit, just 6x15cm long. The board is fitted to the internal expansion port of the Falcon and simply plugs into position, the complete operation takes about 20 minutes from start to finish.

To get going in PC mode is a matter of running the Falcon Speed software and putting a DOS system disk in the drive when requested, press <Return> and you're ready to run your PC software.

Once you have some PC software you can experiment with different setups and configurations, some of the modes only work with specific hardware connected. For instance, CGA 16 colour mode only works on a TV or standard Atari monitor and not on a VGA monitor, while *Windows* only works in 16 colours on a VGA monitor. You should be able to achieve the best looking results in mono VGA mode on a VGA monitor.



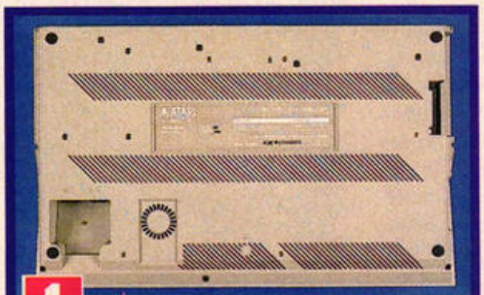
Assign one of your hard drive partitions as DOS drive C, but be careful because the partition you choose is wiped of all TOS programs and files when you modify it.

"Falcon Speed tries hard to do what it sets out to do - run DOS and *Windows* business software on your Falcon"

You can use *Falcon Speed* without a hard drive but there's not much point really, all PC software – including games – can run on a hard drive and many programs actually need a hard drive to be viable in operation. Because of the way *Falcon Speed*

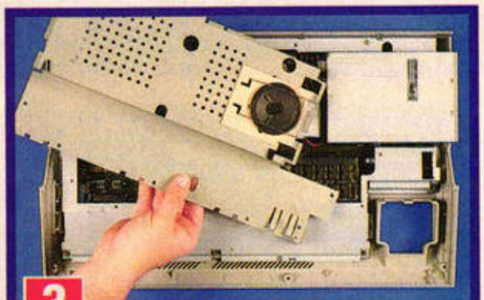
INSTALLING YOUR EMULATOR

If you open your Falcon your guarantee is rendered null and void. If you are not sure about opening your Falcon contact Compo Software to locate your nearest authorised dealer. If you're not worried about your guarantee, this is how you do it



1 **Disconnect all peripherals from your Falcon and turn it over so you are looking at the underside. Find the seven fixing screws that are located in square holes, there are four along the back edge of the Falcon and three along the front edge. Remove these screws with a cross-head screwdriver.**

2 **Carefully turn your Falcon over and remove the top half of the case by lifting it and sliding it to the right. Now lift the keyboard and unplug it from the main board of the Falcon taking note of the position of the plug in relation to the pins, two pins are not used in the connection to the keyboard.**



3 **The next step is to remove the shielding over the power supply, this is fixed in place by several small screws and some twist tabs. When you remove the shielding you must make sure that you disconnect the loudspeaker connection to the main board, it's a simple plug and socket arrangement.**

SPEED 286

PC GAMES

It's a general misconception that installing a PC emulator on an ST or a Falcon enables you to play PC games. This is untrue. PC games are totally unsuitable for use with emulators because they tend to use hardware not found on an emulator board, such as analog joysticks, SoundBlaster cards and 256 colour VGA graphic boards. While the Falcon has a 256 colour resolution, you can only use up to 16 colours in the PC VGA emulation mode. Emulators are also too slow to run games software efficiently.

works, one of your Falcon TOS partitions becomes transformed into a PC DOS drive C partition and you lose all Atari compatibility. Compo recommend that it's easiest to use the Falcon's drive D as the DOS C partition, this partition must be between 4MBytes and 16MBytes in size to work with DOS. For the best results you have to format the partition specifically to a PC format, you can't use the partition for Atari compatible software. Remember that DOS and *Windows* software tends to be on the huge side, with many programs typically coming compressed on half a dozen or more HD disks.

The emulator enables you to use the Falcon's peripherals as if they were connected to a PC, the Atari mouse can be used or you can connect a serial mouse to the RS232 port of the Falcon, all Falcon hard drives can be assigned as DOS partitions, lasers and other printers can be used as normal. All setups can be modified using the installation program supplied with the emulator.

Games software isn't intended to run on an emulator like this so it was no surprise that the games we tried didn't work. Although it emulates a 286 PC you shouldn't expect to be able to run anything which requires more than 16 colours, soundcards or any of the other multitude of PC specific hardware, especially any software written in the last five years. Realistically, a 286 emulator is limited in the amount of professional software it can run because the 286 AT is so old, in fact, we couldn't get anything to run on it without problems of some kind.

Verdict

Falcon Speed tries hard to do exactly what it sets out to do, that is to to run DOS and *Windows* business software on your Falcon at a reasonable price, but a 16MHz 286 processor just can't run modern PC software very effectively.

If you have a Falcon and you want to use 286 compatible PD software and Shareware on it, then by all means buy Falcon Speed, but remember that you can pick up a complete second-hand 286 PC with VGA colour monitor and hard drive for around £300. You may be better off waiting for Compo's promised 486 emulator.

CLIVE PARKER

GETTING HOLD OF DOS

The *Falcon Speed* hardware and software make up the basics of a 286 PC, the actual operation system – MS DOS or PC DOS – is disk based and needs to be run before you can use any PC software.

The Falcon Speed manual advises you to get a friend to make you a DOS system disk, this is inserted into the Falcon's drive at the prompt and installs the DOS operating system into memory. Any DOS version above 2.0 works with Falcon Speed, although later versions are recommended if you intend using *Windows 3.1* with your set up.

You can usually get boxed copies of slightly older versions of DOS through the second-hand adverts in many PC magazines, you don't normally have to pay any more than about £25.

Falcon Speed 286

£229 Compo Software
☎ 0480 819891, Falcon030 only, 4MBytes RAM, hard drive required.

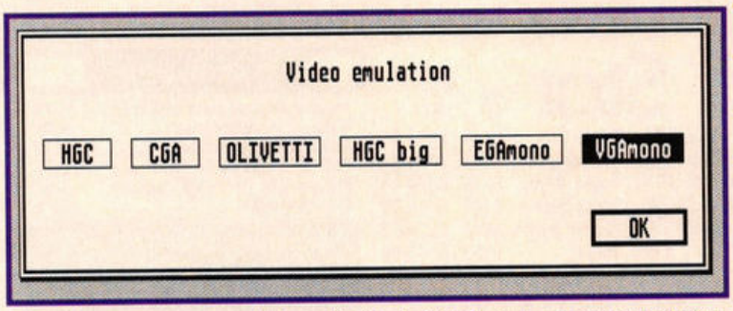
Highs

- Simple to install.
- Relatively inexpensive.
- Can use *Windows* on VGA monitors.
- Lots of Shareware and PD software available.

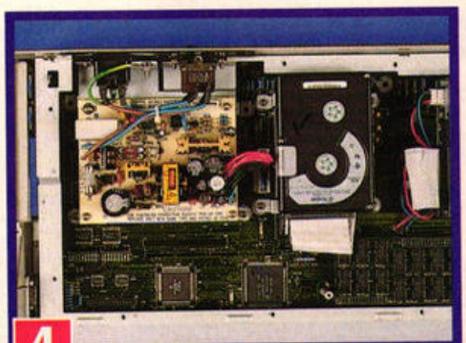
Lows

- 286 AT is ten year old technology.
- Grabs an entire hard drive partition for itself.
- PC software takes up lots of room.
- Maximum of 16 colours in any screen mode.
- Lots of PC software just won't run on a 286.

ST FORMAT RATING 64%

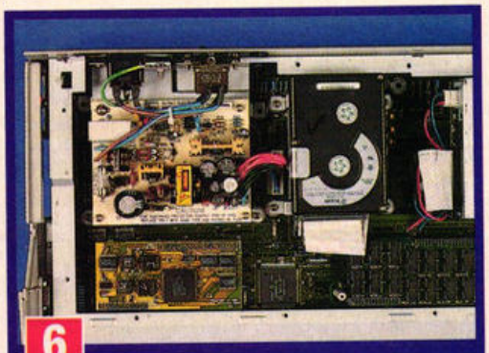


Specify your screen resolution using the installation program supplied with Falcon Speed. All sorts of variables can be set up from this program including the type of disk drive, keyboard layout, screen colours and the mouse type.



4 Now the Falcon's stripped down as far as you need you can install boards into the expansion slot. This is at the front left of the main board in front of the power supply and next to the edge of the shielding. The expansion board to the right of the two square chips is the 16MByte RAM upgrade.

5 Get the Falcon Speed board and have a practice at placing it into the correct position, there is a long 50-way connector on the top right of the board and a smaller 30-way connector at the bottom left of the board. It's dead easy to position the board one pin out of position if you're not careful.



6 Once you are sure the board is in the right position press it firmly into place. If the board doesn't slip on to the pins smoothly check that there is nothing in the way, our Falcon had a jumper connecting two of the pins on the smaller connector. When the board is firmly in place, re-assemble your Falcon.

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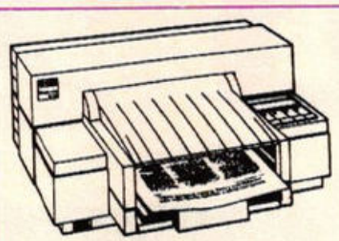

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Panasonic

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Falcon

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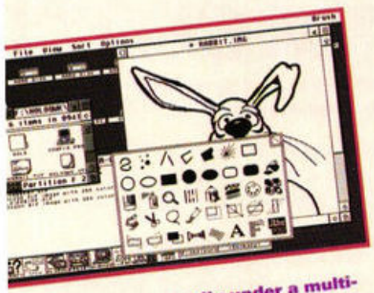
PIXART

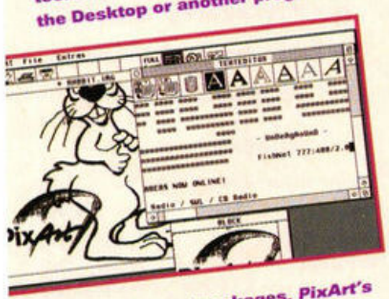
A new art package written in BASIC. Can it bring out the creative flair in you?

Art packages seem to be like those "Hello Mum" programs written in BASIC – at some point everyone writes one. The latest contender in the ring is *PixArt* from German programmers Omikron, and distributed in the UK by The ST Club. It's an all-resolution package capable of working in all modes.

PixArt comes on two disks – the program and fonts on one, and full example pictures to mess around with on the other disk. There's no installation at all and you can use it straight away. The manual is very well written. One of *PixArt's* strengths is it's easy to use right from the start. The program makes full use of GEM, with the critical screen display routines written in assembler for very fast updates.



PixArt runs happily under a multi-tasking environment such as Geneva, MultiTOS or with the windows and toolboxes accessible while you're at the Desktop or another program.

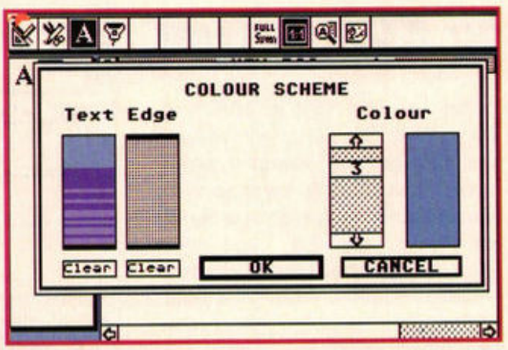


Unlike other art packages, PixArt's text functions don't just dump text onto the screen - you have an editing window where you format the text exactly how you want it before you commit yourself.

All those resolutions!

PixArt is written in a way that's useful whatever ST you have. It runs in any mode, from 16 colour low resolution up through the TT modes and on to 24-bit true colour on the Falcon. Whether you want to use it to create screens for games and demos, process digitised true colour images or just idly doodle, *PixArt* can happily do it. You can load as many pictures as memory permits, and the palette switches automatically as you move between windows.

The block functions are impressive – each block has its own window, and you can twist and distort them with a wide range of effects before pasting them back to the image. Transferring blocks between pictures is simple too – thanks to the use of windows. A grid is overlaid onto the block and you can drag points on the grid to distort the block – producing some bizarre effects. Distorting a digitised picture is great fun, and you can render someone unrecognisable in minutes. Not true image processing by any means, but useful and fun. A collection of preset grids is at hand with shapes like tubes, loops and balls to squeeze your picture into.



PixArt's text functions can also be used to add colour effects. You have up to 32 bands to play with, each with a separate shade, so creating colour-graded text is easy. Our text is shaded in a combination of blues.

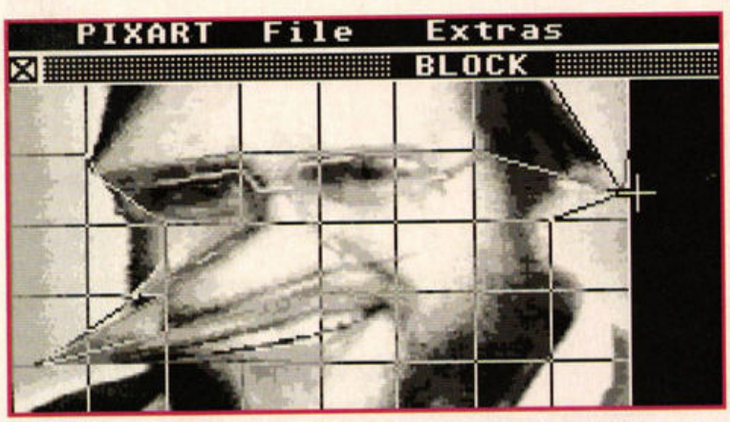
Adding text to your picture is different from most other packages,

"Distorting a digitised picture is great fun, and you can render someone unrecognisable in minutes"

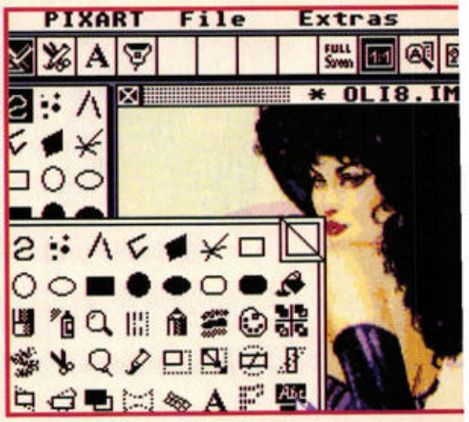
as *PixArt* gives you a mini text editor in a window. Text can be styled exactly as you want it before you paste it, and you can even load text from disk. *PixArt* only uses the *Signum* font format and comes supplied with nine faces each in two sizes. There's a wealth of these fonts available in the PD. Fonts can be swapped at will, so if you're short on memory you can dump a font after you've added the text to the picture.

PixArt gives you the usual set of drawing tools, with lines, brushes, pens and airbrushes all being fully configurable. All tools are selected via the menu, the icon box, or a special pop-up toolbox. The icons are clear and easy to understand, and the tools all work without any hitches.

Two zoom modes are available – you can close in on the whole picture, and zoom in on a specific part which then pops up in its own window. The fine editing is a joy to use as all tools are available, not just single pixel editing. Printing is catered for in colour too – if you have one of the Hewlett Packard DeskJet models which supports this, with a choice of dithering modes for images with more colours than your printer can handle. Even with a 9-pin dot matrix you can produce acceptable results.



The Cinema option can be used to apply some weird and wonderful effects to a block. Just move the points on the grid and PixArt twists the picture to match. Anyone who knows this man would have certainly have some problems recognising him from this distorted image.



PixArt offers an instant pop-up toolbox. You can configure it with the functions you use most often and save your own customised working environment.

Support for image formats is comprehensive, with *PixArt* loading IMG (including extended X-IMG), all *Degas* PI files (including extended PI4, 5 and 6), NEO, Targa TGA, BIG, ESM, TIF, IFF and the PC format PCX. *PixArt* detects the file type automatically by reading the extension, trying to load an unsupported file type results in a dialog box telling you it can't load the picture. The lack of support for the GIF and compressed JPG formats is disappointing as a lot of PD libraries supply images in these formats, so you need a separate convertor.

Verdict

PixArt is versatile, fast, and it performs admirably. As a vehicle for true colour image work it beats the limited opposition with its full range of drawing tools. Well worth looking at.

FRANK CHARLTON

PixArt 1.02

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Highs
- Easy to learn and use.
- Works in any res on all machines.
- Very fast.
- Brilliant block manipulation.

Lows
- No support for GIF or JPG formats.
- Not 100% multi-tasking, lack of modal dialog boxes.

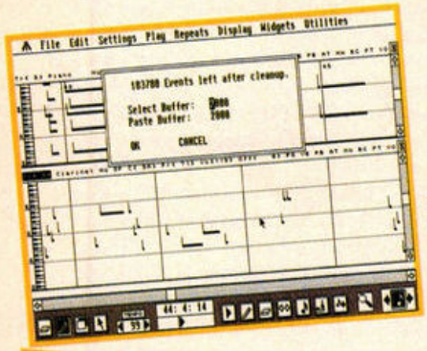
RATING 79%

COMING DOWN

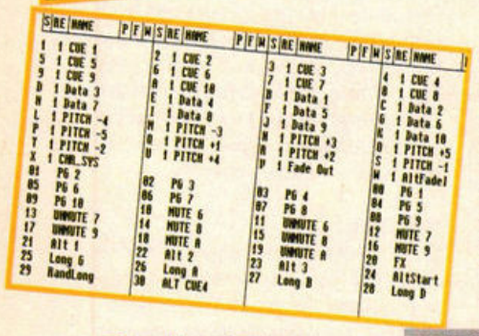
This month Chas Stoddard takes a look at some of the problems you might have using *KCS Omega*

Did you know that the frequency at which a cat scratches its ear is exactly the same frequency as a human laugh? Strange but true. Er, which brings us rather nicely to *KCS Omega*.

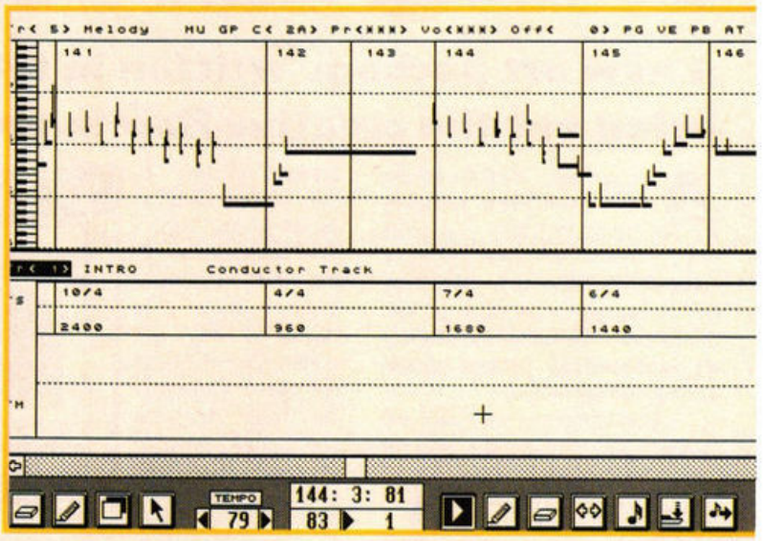
You may have found that when you record, you can only record on the lowest numbered track. Well, this is, in fact, deliberate. *Omega* never makes assumptions about musical form; as such, you are completely free to organise data your way. Also, and more importantly, you can get your material down quickly without stopping or worrying about how the data's organised – you can, after all, go back and sort it out later. You should also bear in mind that there is no correlation between channel and Track number – you set the MIDI channel yourself either from your master keyboard (use Merge for this) or from *Omega* by using the RECH function.



Setting the Select and Paste buffer sizes in Tiger using the Cleanup feature. If you're tight for memory, reducing these buffers saves a bit of space.



This drum-machine style of recording becomes particularly useful when overdubbing a solo line – say, for example, that you want to add an eight-bar solo line from bar 33. Set a Cue Point starting at bar 31 (to give yourself a lead-in) and ending at bar 40; now go to the Options menu and make sure that Auto Loop, Auto Record and Mute New Tracks are switched on. Press the Tab key to activate the loop and when you get to the appropriate point, start recording. When *Omega* reaches the end of the loop, it puts the track you've just recorded into Mute, jumps back to bar 31 and starts to record again. This is an excellent way of recording several takes of the same solo very quickly without stopping – you can then audition your efforts at your leisure and select the best bits of the tracks you've just recorded for editing into one master version.



Tiger with the Conductor Track showing multiple time signature changes. Just click in the bar required and select the time of your choice.

Ground control

Several of you have asked about using Control Sequences to chain together various sections of music in Open Mode. The examples on last month's Cover Disk show you some of the simpler ways to do this but there are a few others.

"This drum-machine style of recording becomes particularly useful when overdubbing a solo line"

Let's assume that you have four sequences, Verse, Chorus, Middle Eight and Bridge and you want to arrange them thus: Verse one, Verse two, Chorus, Verse three,

Open Mode all set up to perform an interactive piece. Various keys are used to start phrases while others are used to mute or unmute groups of sequences or transpose their pitches.

The Environment page once again. The settings here are crucial to how *KCS Omega* behaves especially when talking to other devices using the MIDI clock.

CONTROL SEQUENCES

Example One

MEASURE-BEAT:	ST EVENT	TIME	CHANNEL	TYPE	NOTE	VELOCITY	DURATION
1- 1:		1	1	0	ST	1	0 – Verses 1 and 2
1- 1:	1	2	0	ST	2	0	1W – Chorus
1- 1:	1	3	0	ST	1	0	1W – Verse 3
1- 1:	1	4	0	ST	2	0	1W – Chorus
1- 1:	1	5	0	ST	3	0	1W – Bridge
1- 1:	1	6	0	ST	4	0	1W – Middle 8
1- 1:	1	7	0	ST	1	2	1W – Verse 4 – plays a tone higher
1- 1:	1	8	0	DE			

Example Two

MEASURE-BEAT:	ST EVENT	TIME	CHANNEL	TYPE	NOTE	VELOCITY	DURATION
1- 1:	1	1	0	ST	1	0	2 – Verses 1 and 2
33- 1:	1	2	30720	ST	2	0	1 – Chorus
41- 1:	1	3	7680	ST	1	0	1 – Verse 3
57- 1:	1	4	15360	ST	2	0	1 – Chorus
65- 1:	1	5	7680	ST	3	0	1 – Bridge
67- 1:	1	6	1920	ST	4	0	1 – Middle 8
75- 1:	1	7	7680	ST	1	2	1 – Verse 4 – plays a tone higher
75- 1:	1	8	0	DE			

THE HOME STRAIGHT

```
LE: 4HORIZON              SEQUENCE                    1/ 4/1994
s  Meas  Name    Comments                                  TYP  CHN
-  ----  ----    --------                                  ---  ---
   0     Reset   POL Reset POLs - auditioning only         POL  2A
   1     A1 # 6/4   1st Group in 6/4: Seq 1               ON   4A
   1     A2 # 6/4 Seq 2                                   ON   4A
   1     A3 # 6/4 Seq 3                                   ON   4A
   1     B1 # 5/2 2nd Group in 5/2:Seq 1                  ON   4A
   1     B2 # 5/2 Seq 2                                   ON   4A
   1     B3 # 5/2 Seq 3                                   ON   4A
   1     C1 #13/8 3rd Group in 13/8: Seq 1                ON   4A
   1     C2 #13/8 Seq 2                                   ON   4A
   1     C3 #13/8 Seq 3                                   ON   4A
   1     D1 # 9/4 4th Group in 9/4: Seq 1                 ON   4A
   1     D2 # 9/4 Seq 2                                   ON   4A
   1     D3 # 9/4 Seq 3                                   ON   4A
  59     MOVE 1 1st Movement - START HERE!!!!!
   1     A1 + 6/4 1st Group in 6/4: Seq 1                 ON   2A
   1     A2 + 6/4 Seq 2                                   ON   2A
   1     A3 + 6/4 Seq 3                                   ON   2A
   1     B1 + 5/2 2nd Group in 5/2: Seq 1                 ON   2A
   1     B2 + 5/2 Seq 2                                   ON   2A
continue
Control to stop listing.
```

The Map - it's a good idea to label everything you do especially if you don't come back to the piece for a few weeks.

Chorus, Bridge, Middle Eight, Verse four. Take a look at the Control Sequences boxout. With the first example, it seems at first glance that everything starts off at the same time but the "W" under the Duration column makes *Omega* wait until that sequence has finished playing before starting the next one. The number under the Note column is the sequence to play (we know it's a sequence start because the Type is an ST Event); under Velocity is the pitch transposition in semitones, so a two here would mean play the sequence up a tone, while three would mean the sequence plays one and a half tones lower. The Duration column is the number of times that sequence is to play – so if, for example, 99 is entered here, the sequence plays forever.

"*Omega* never makes assumptions about form so you can organise data your way"

Living by numbers

Using the W command at the end of the line means that you can quickly enter the sequence numbers and how many times each one plays – let *Omega* worry about when to start them. In order for this to work correctly, each sequence must end with a Deleted Event and it must be at the right point; if sequence one was eight bars long but the final Deleted Event was at bar 16, then our example above would play the first eight bars and then "wait" for another eight bars before repeating it.

You could, of course, specify the exact time each sequence is to start by typing the start time directly into the Time column and this is shown in the second example (hint: just enter the sequences you want to start in the right order without worrying about the time and then place the cursor on each sequence in turn and use the Calc feature to correct the time of the sequence as desired).

If you've spent the odd evening using *Omega* over the last few weeks, you can appreciate that it is impossible to cover all aspects of the system's use. Even us old hands still find new ways of doing things. If you find that you get stuck, call or fax the Tech Support line on ☎ 081 699 7004. Above all, enjoy yourselves! ***stf***

TEN TIPS FOR USING *OMEGA*

1 Start off by building a click track. If you have a specific musical idea, writing a click track that incorporates the "feel" is a lot more satisfying to work with.

2 Use the Cue points; these are an effective way of isolating different sections of your piece. You can recall a stored Cue point by pressing <Alt> <1> to <Alt> <6> – the Tab key duplicates the Cue button.

3 If you're not happy with a particular take, you can erase it by pressing the Undo key, provided you haven't reached the loop point. If you have, clicking on the X-REC button just above the tempo bar erases the last take whilst R-REC erases the recording but leaves *Omega* playing.

4 Copying sections out of a track or tracks is much easier to do in Tiger. Selecting a range and then using either Track to Sequence or All Tracks to Sequence to copy the appropriate material to the next available sequence.

5 In Track Mode, with the Mute button lit, the keys on the main keyboard (one to nine, A to Z) mute and unmute the tracks – one to nine control tracks one to nine and A to Z control tracks ten to 35; keys on the numeric keypad handle the remaining ones. You could now route the MIDI Out of the ST back into the MIDI In (a technique known as loopback recording) making sure that both Merge and RECH are both turned off. Turn Record on and start playback – by muting and unmuting tracks of your choice, your new performance can be recorded on the next track. If you're daisy-chaining several modules, just take the last MIDI Thru back to the MIDI In of the ST to accomplish this or route your patchbay accordingly. This creates a multi-channel track which you should send to Open Mode by using Track to Sequence. You can de-mix this new sequence into its relevant channels by using the Sequence to All Tracks function.

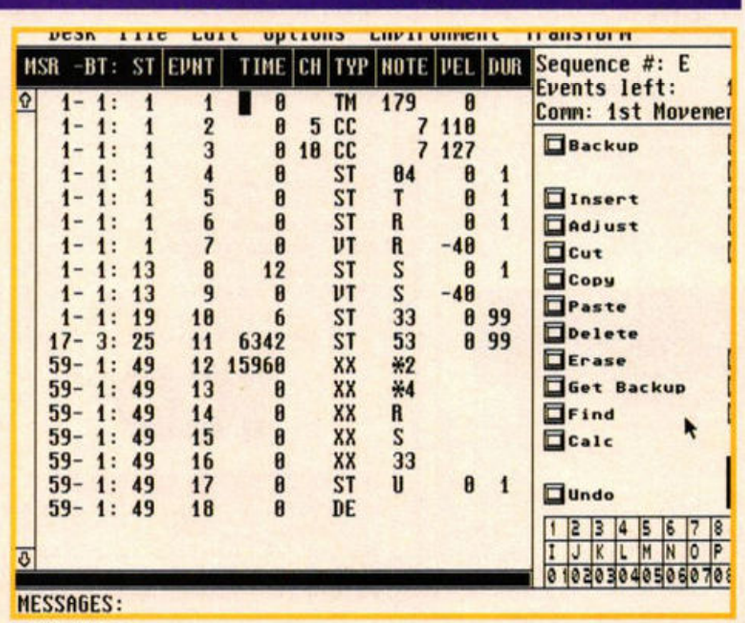
6 A similar technique can be used in Open Mode – once a sequence has been started, it can be muted by holding down a Shift key and pressing the sequence's start key. Because of differences between American and UK keyboards, sequences two and three can be muted by pressing <@> and <#> respectively. Loopback recording can be a useful technique for recording an improvised performance in either Mode.

7 If sequences seem to be looping at the wrong point, check the final Delayed Event and use the Calc function to correct it if necessary. All sequences must end with a Deleted Event event otherwise *Omega* has no idea of when to stop playing it. In particular, if you try and loop and Control Sequence of length 0 and there's no programmed Wait command or the Deleted Event is before the "logical" end of the sequence, *Omega* tries and spews out events as fast as it possibly can.

8 Sometimes you can get stuck notes; this can happen if you hold a note down and then change MIDI channel without releasing the key. Pressing <~> sends an All Notes Off message on all channels and usually cures the problem.

9 If your loading MIDI Standard files into *Omega*, Type 0 files are loaded into Open Mode even if you loaded it from Track Mode. Type one files are loaded into Track Mode but because not everybody saves MIDI files the same way, you may find that *Omega* seems not to play. In this case, check the length of Track one and correct the final Deleted Event.

10 Make sure that you experiment! Half the fun of using this kind of software is that you can mess around with it and try things out.



A typical Control Sequence - notice how sequences R and S are being velocity-transposed immediately after being started. Also at bar 59, all sequences playing on channels two and four are halted, along with R, S and 33. Control then passes to sequence U.

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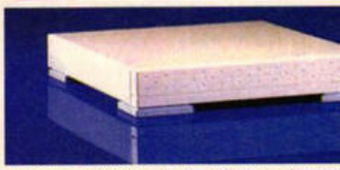

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JAGUAR™

46 NEWS

- Import a Jaguar for immediate satisfaction.
- Jaguar scoops five awards at Las Vegas CES.
- More news of the Jaguar games you can expect.

50 REVIEW: RAIDEN
How has this arcade classic converted to the Jaguar?

54 REVIEW: CRESCENT GALAXY
Is this horizontally-scrolling shoot-'em-up more than just a pretty face?

57 PRESENTING... IMAGITEC
Creators of some of the Jaguar's earliest releases

JAGUAR REVIEWS

To ensure our Jaguar reviews accurately reflect the specific abilities of the machine, we've devised a rating system so you can easily see how good a game is.

GAME NAME

£ price ■ Publisher
☎ Contact number

GRAPHICS ●●
Graphics rated out of a maximum of five

SOUND ●●●
Sound rated out of a maximum of five

CAPABILITY ●●●●
Does the game use Jaguar's capabilities?

GAMEPLAY ●●●●●
How does it play?

***STF* RATING** **90%**

The Jaguar is a trademark of Atari Corp; Mario is a trademark of Nintendo; Sonic the Hedgehog is a registered trademark of SEGA.

Jaguar

● This Jaguar (reproduced here at only a proportion of the original size) is the main character of the ad that won the "best print ad" award at the CES. A few months ago the mere idea that Atari would win an advertising award was inconceivable.

The Jaguar has picked up five top awards at the world's biggest consumer electronics show, the CES in Las Vegas.

Just three months after its US release, the Jaguar caused a storm at the show, being voted the industry's Best New Game System (*Video Games Magazine*), Best New Hardware System (by *Game Informer*) and the 1993 Technical Achievement of the Year (by the magazine *DieHard GameFan*). Also, *Video Games Magazine* awarded a Jaguar advertisement 1993's Best Print Advert, and *Electronic Games Magazine (EGM)* voted *Tempest 2000*, in its unfinished state, the Best Game of the Show.

Just three months after its release the Jaguar caused a storm at the CES

The Best New Game System award was created specifically for the Jaguar system. Chris Gore, editor of *Video Games Magazine*, said "[Jaguar] eclipses 3DO as best bang for your buck."

Game Informer's editor Andy McNamara said, "Atari has a winner on its hands... It will need great software, but if... *Cybermorph* set the standard, Atari is definitely on its way."

Sadly, as we know from our reviews of *Raiden* and *Crescent Galaxy* (pages 50 and 54 respectively), *Cybermorph* has set a benchmark for other games to be judged

STOP PRESS

If you have a UK Jaguar, you may encounter some problems when you're using American cartridges, according to an official Atari source who requested we didn't reveal his identity.

Two cartridges which are currently on sale via grey importers, *Raiden* and *Evolution Dino Dudes*, are NTSC only. This means that black bands appear at the top and bottom of the screen, occasionally obscuring some of the action. This doesn't cause any problems to the general running of the games, but you may find it annoying. Atari assure us that *Cybermorph* and *Crescent Galaxy* are not affected, and when the software is officially launched in the UK all cartridges will work worldwide.

Grey import successes

Imported American Jaguar consoles are selling well in the UK, despite the high demand for the machine in the US, the small number of UK consoles on sale before Christmas – and the price tag which has been reported to be as high as £400 in places. Stunning considering the official price for the machine is expected to be around the £156 mark.

ST FORMAT spoke to several grey importers, so-called because the machines are imported without the consent of the manufacturer. In general they report that business is good for Jaguar and its games. Nigel Levin, manager of Zap Computer Games in Leeds, said: "We've sold about a dozen American Jaguars. We're selling them for £300, and £55 per game." Phil Turner of Crazy Consoles in Halifax explained: "We've had a hell of a lot of interest in the Jaguar, but not much in the NTSC machines because of the cost. We've sold about 30 imported Jaguars at £299, and we sell the games for between £39 and £45 each."

Darryl Still of Atari UK is cautious, however: "The huge interest in Jaguar means that UK supplies will be tight for some time to come, right up until the middle of the year. These are problems borne of success. The uptake of interest in Jaguar has been amazingly fast, and while we initially thought we'd be dealing only with enthusiasts, the press coverage and word of mouth has carried us right into the middle of mass market demand."

"The uptake of interest in Jaguar has been amazingly fast"

WHO SPENDS ON GREY IMPORTS?

We asked Nigel Levin of Zap Computer Centre just who buys American imported consoles and games. "We tend to find that people who are knowledgeable about games buy imports," he told us. "Generally people know what they want, and they know they can get it from us."

Zap's primary market is in importing Sega and Nintendo games, even though US and Japanese SNES and Megadrive cartridges don't work on UK machines without a special adaptor. Atari cut out this incompatibility by making the American and UK cartridges identical, which can only help the importers. "Occasionally with SNES and Megadrive we get people phoning back, saying 'This is an American cart, I wanted a UK one,' even though it hasn't been released in the UK yet. Atari have helped us by making them compatible."

If you're thinking about buying an imported Jaguar, though, be careful – the unit will not work with some UK televisions. Zap supply US Jaguars with a UK power supply and a SCART lead – so make sure your TV has a SCART socket before you buy.

JAGUAR GREY IMPORTERS
If you want a US Jag, then the people to contact are:
Console Concepts ☎ 0782 712759
Crazy Consoles ☎ 0422 342901
Daniel's of Windsor
☎ 0753 862 106
Zap Computer Centre
☎ 0532 590077

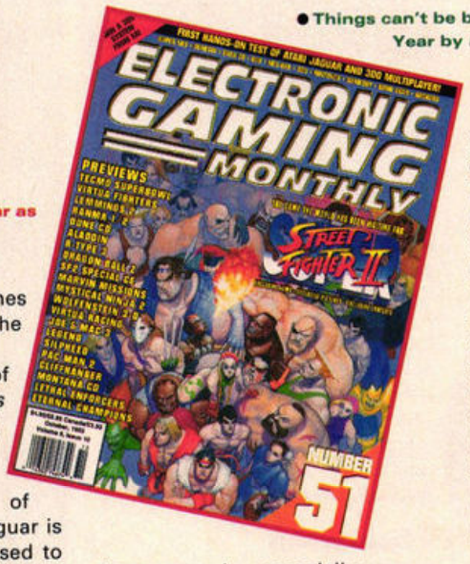
grabs awards at CES

● *Diehard Gamefan* voted the Jaguar as the 1993 Technical Achievement.

against, but these other games certainly haven't reached the same standard.

The next batch of games includes *Alien vs Predator* and *Tempest 2000*, both of which are expected to be brilliant, so hopefully within the next couple of months we can say the Jaguar is a great machine, as opposed to just a powerful one.

Unsurprisingly, Atari were jubilant, Darryl Still remarked: "We're really pleased with



● Things can't be bad if you're voted Best Game of the Year by *EGM* when you're not completed.

these awards, especially the Best Game award which is developed by the UK's own Jeff Minter. This is further evidence that this console will be the product of 1994." Atari are not only enthusiastic about their success in terms of awards which are a fairly academic measure of how it's going to perform commercially, they're also getting hot and bothered about the number of machines they're expecting to sell. Over Christmas they sold 27,000 machines, including fewer than 1,000 for the UK, and by the end of the year they anticipate being well on the way to having shifted a million units – up to three quarters of a million in the US and around 120,000 in the UK. At the moment they're concentrating on supplying the US because of the hefty demand, although there is to be a trickle of PAL machines into the country until it reaches full capacity around May. They still appear to be having a few production difficulties, however, one rumour being that Toshiba, the chip manufacturers, aren't turning out enough chips that pass the quality control standards.

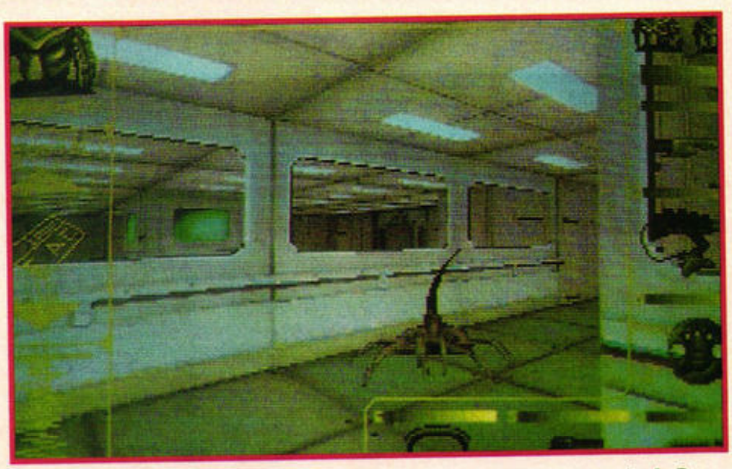
ALIEN VS PREDATOR

The game that's on everybody's lips... *Alien vs Predator (AvP)* by the UK developers Rebellion Software, caused quite a stir at the CES in Las Vegas. These screenshots are a little old, having been taken around November, but they give you some idea of how *AvP* is shaping up.

The story is based around a space station, where two ships have docked, one carrying Predators and the other Aliens. You take on the role of a Predator, an Alien, or a Colonial Marine – just like in *Aliens*, you see. The seven large levels were created using texture-mapping techniques, which involved building models of the space station and digitising them before putting them in the game.

"The levels were created by building models of the space station and digitising them before putting them in the game"

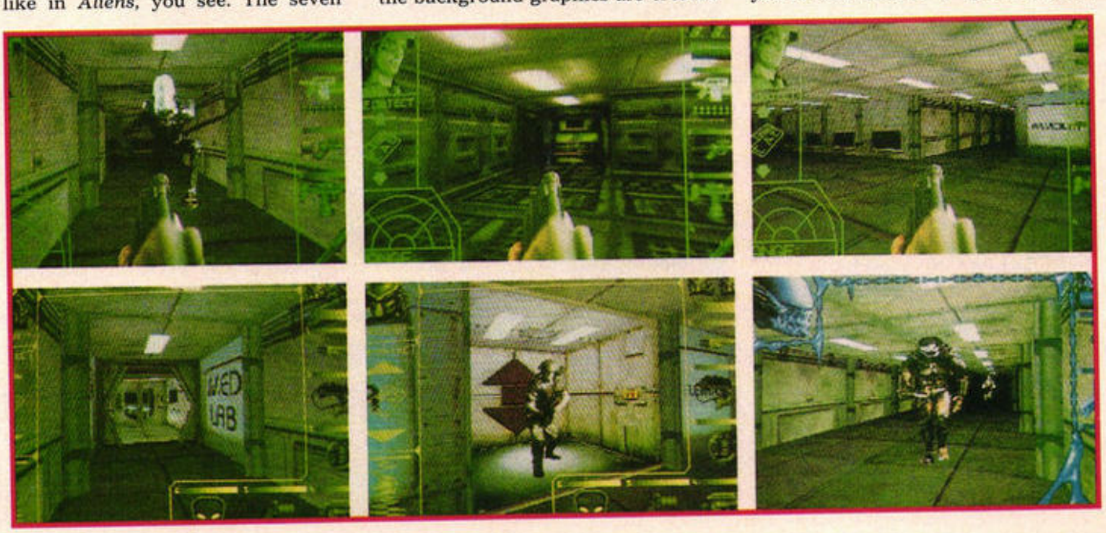
As you can see, the walls, floor and ceiling are all texture-mapped, and yet Rebellion have still managed to keep the frame rate above 15 frames per second – so everything moves much more smoothly and quickly than you might expect. As in *Cybermorph* all the background graphics are created in real-time, so you can move anywhere in the station you want – you're not tied to a specific path.



● Rounding every corner in *AvP* can reveal a surprise. Now, do you feel safer when playing a Predator or an Alien? We favour the Marine.

We've seen *AvP* running, and we're very impressed; especially by the rumour that it could be the game in the next Jaguar bundle. That would be very impressive.

Alien vs Predator is in the final stages of completion, and it should be available in April – when, incidentally, we should have plenty of Jaguars hanging around in shops waiting to be snapped up. Watch out for a full and definitive review soon in *ST FORMAT*.



● Playing the part of the Alien can be fun – not least because you can imagine yourself smiling in that very *special* way. The characters, incidentally, are digitised from actors in specially-made latex suits.

AROUND THE CORNER...

There are now loads of games lined up for the Jaguar, and as you can see from our list below another 13 developers have tagged themselves on. So, let's have a brief look at some of the more interesting games coming soon to your Jaguar...

● *Flashback*, featured here on the SNES, is going to be gorgeous. More than just a platformer.

MORTAL KOMBAT

Mortal Kombat is a conversion of the cult smash beat-'em-up released by Acclaim for the Mega Drive and SNES late last year. The game features digitised footage of real fighters going through their moves, so it all looks realistic; there are lots of different fighters with hundreds of moves.

● This special four armed move shows just the sort of realistic effects that can be achieved by digitising pics.

Kombat's claim to fame is its range of "death moves" – that is, specific moves which are designed to finish your opponents off. These include ripping off the head of your enemy, along with other somewhat unpleasant atrocities. Should be fun. Watch out for *MK* on the Jaguar in June, released through Iguana.

FLASHBACK

A classic platform puzzling game comes to the Jaguar from US Gold in July. *Flashback*, which has already been released for the Amiga and the major consoles, features rotoscoped graphics – that is, animations which are created using film of real actors. This creates some really incredible animated scenes, and a realistic main character who runs, jumps and climbs his way around seven futuristic levels.

SOCCER KID

Another platform game, but with a difference. *Soccer Kid* from Krisalis follows the story of a small boy who's intent on recovering the world cup which has been stolen by aliens. This takes him on a trip to lots of countries around the world, facing enemies including a huge Luciano Pavarotti!

Instead of a weapon, Soccer Kid dispenses with his enemies using his trusty football, which makes for some incredible displays of skill from the boy in the boots. Watch out for *Soccer Kid* in August.

● Soccer Kid looks like just the sort of cute kid who's *bound* to find himself in a platform game. You can tell 'em a mile away – big eyes, big cheeks and big feet. And big socks.

NEW DEVELOPERS...

13 new companies have signed or are rumoured to have signed up for Jaguar development. They are...

3D Games
All Systems Go
Domark
DTMC
Epic Megagames
Handmade Software
ICD Inc
Infogrames
LucasArts
Origin
Phalanx Software
Photosurrealism
V-Real Productions

Some of these companies are more exciting than others in terms of what they've produced. LucasArts are the publishers of some of the most exciting console games in recent years: *Super Star Wars*, *Super Empire Strikes Back* and *Zombies* – all excellent games, but frustratingly the company wouldn't comment which would be developed for the Jaguar.

Epic Megagames are also an interesting addition – their *Epic Pinball* game went down a storm among PC owners.

Keep reading *ST FORMAT* for all the latest details.

EXPECTED RELEASE DATES

EXPECTED DATE OF RELEASE	PUBLISHER	FORMAT
AVAILABLE NOW		
Cybermorph	Attention To Detail	Cart
Crescent Galaxy	Atari	Cart
Evolution Dino Dudes	Imagitec (Atari)	Cart
Raiden	Imagitec (Atari)	Cart
FEBRUARY '94		
Alien vs Predator	Rebellion (Atari)	Cart
Checkered Flag 2	Rebellion (Atari)	Cart
Club Drive	Atari	Cart
Tempest 2000	Jeff Minter (Atari)	Cart
Tiny Toon Adventures	Atari	Cart
MARCH '94		
Kasumi Ninja	Handmade Software	Cart
APRIL '94		
Battle Wheels	Beyond Games	Cart
Casino Royale	Telegames	Cart
Jukebox	All Systems Go	Cart
Kick Off 2/World Cup	Anco	Cart
Zozziorx	Retour 2048	Cart
MAY '94		
Double Dragon	Tradewest	Cart
Mechtiles	Beyond Games	Cart
JUNE '94		
Battle Chess	Interplay	Cart
Brutal Football	Millennium/Telegames	Cart
Indiana Jags	Retour 2048	Cart
Mortal Kombat	Iguana	Cart
JULY '94		
Doom	ID Software	Cart
Flashback	US Gold	Cart
AUGUST '94		
Another World	Interplay	Cart
Soccer Kid	Krisalis	Cart
SEPTEMBER '94		
Arena Football	V-Real	Cart
Navy Commando	Microïds	Cart
Pinball Fantasies	21st Century	Cart
OCTOBER '94		
Horrorscope	V-Real	Cart
Jimmy Connors' Pro Tennis	UBI Soft	Cart
Power Slide	Elite	Cart
Zool 2	Gremlin Graphics	Cart

● Zool reappears faster and smoother than ever with his girlie. If you went to the FES in last year you'd have seen the originals walking round.

DECEMBER '94		
Gunship 2000	MicroProse	Cart

SOMETIME...

NOTE: Most of the following games are billed for release sometime later this year. However, we have no confirmed release date yet, so for now they must languish in last place.

Aero the Acrobat	Sunsoft	Cart
Al Michaels' Hard Ball	Accolade	Cart
Alone in the Dark	Infogrames	CD
Batman (the Comic)	Atari	Cart
Battlemorph (C2)	Attention To Detail	Cart
Battlewheels		Cart
Battlezone 2000	Atari	Cart
Blue Lightning	Attention To Detail	Cart
Brett Hull Hockey	Accolade	Cart
Bubsy	Accolade	Cart
Car Wars	Midnite Software	Cart
Charles Barkley Baseball	Accolade	Cart
Commando	Microïds	Cart
Dracula the Undead		CD
Dungeon	Rebellion	Cart
Dungeon Depths	Midnite Software	Cart
European Soccer Challenge	Telegames	Cart
Evidence	Microïds	CD
Hosenose and Booger	All Systems Go	Cart
Jack Nicklaus Golf	Accolade	Cart
Return to Zork	Activision	CD
Robinson's Requiem	Silmarils	Cart
Space Pirates	Atari	CD
Star Trek: Next Generation	Spectrum Holobyte	Cart
Ultimate Brain Games	Telegames	Cart
Ultra Vortex		Cart

● This is, er, Aero the Acrobat. Obviously.

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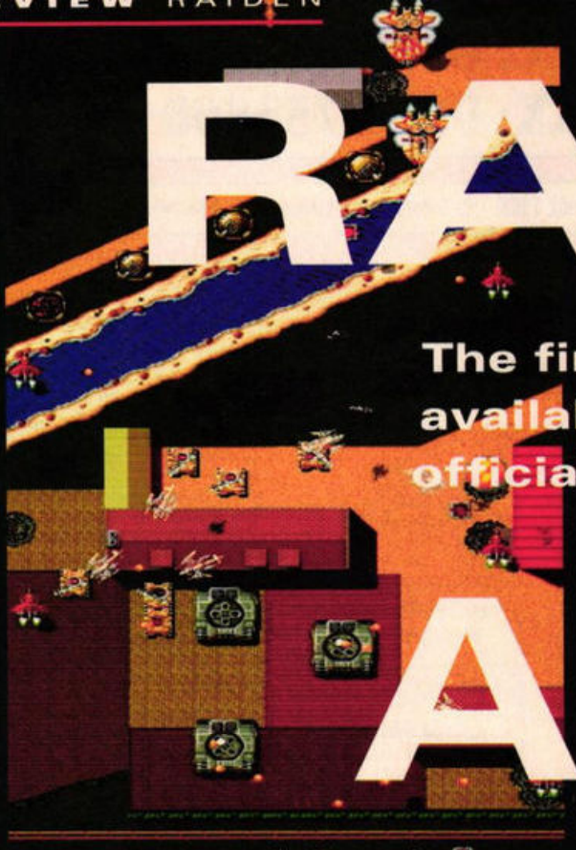
RAIDEN

The first wave of Jaguar games are now available on grey import, and soon to be officially released in the UK. *ST FORMAT* takes a look at Atari's new babies

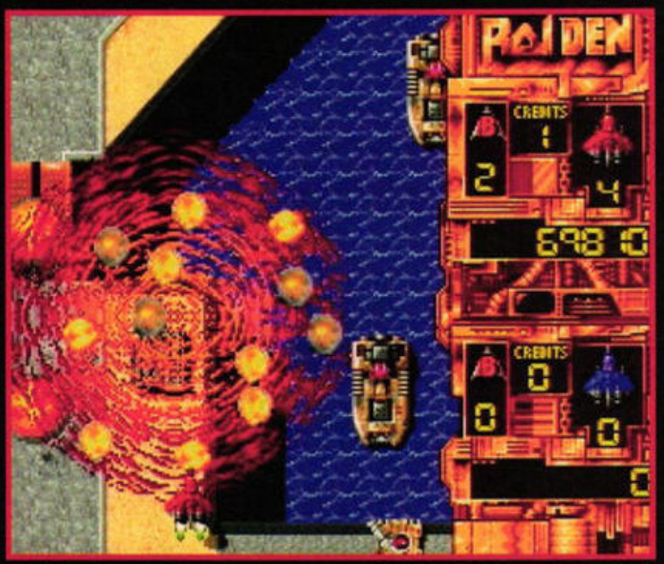


● Imagitec claim that Jaguar *Raiden* is actually better than the coin-op. As far as we can see, it's identical – not better. Tsk.

After the excellent *Cybermorph* (*STF* 55, 87%), which is packaged free with the Jaguar, you'd expect the first games that you have to pay for to be even more excellent. Sadly, this isn't the case with either *Raiden* or *Crescent Galaxy*, a review of which you can find on page 54.

Actually, *Raiden* isn't that bad a game. The problem with it lies in its age – it's a conversion of a late '80s coin-op shoot-'em-up. Admittedly, the coin-op was a very good one, and the Jaguar conversion is as near as dammit perfect. But heck, this is an old game, and we're expecting much more from the new arrival from Atari.

What do we have, then? On a basic level, it's a vertically-scrolling shoot-'em-up – very fast, very frenzied, and rather difficult to boot. As a pilot of the Raiden Supersonic Attack Fighter (simply rolls off the tongue), your job is to fly upwards while shooting and bombing everything that moves. Right, that's the plot over with, now let's investigate the game.



● The guns are all very well in *Raiden*, but for some real butt-kicking stuff you need a bomb. This causes a shock wave lasting several seconds, killing lots.

Sixth sense

Raiden is based around eight areas, five of which are on a single planet, while the sixth sends you into deep space to shoot asteroids and spaceships for a while before arriving on a second planet (levels seven and eight). All manner of alien enemies are floating around in strict attack formations, waiting in ambush for your little ship which is capable of so much.

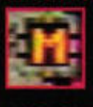
Your basic weapon, like in *Crescent Galaxy*, is a futuristic pea-shooter, capable of destroying nothing more than the

COLLECT THESE...

BONUSES

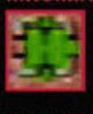
Missiles are uncovered by shooting buildings, these bombs can be collected for those handy extra points.

MISSILES



Very powerful weapon to have. Fires automatically, alongside your main weapon. If left uncollected, changes into...

...HOMING MISSILES



Like ordinary missiles, but actually home in on the nearest enemy. Damned useful.

EXTRA PEA-SHOOTERS

The red squares gives your pea-shooter added power and, later on, a spray effect.

EXTRA LASERS

Blue squares add to your laser power – possibly the most effective weapon.

BOMBS

You only have a quota of three bombs, so it's worth picking these up when you see them.

● Lush, green grass; trees with green leaves; bubbling brooks meandering through it all. Then somebody comes along and nukes it. Honestly, kids of today.

most basic enemy. Arcade tradition says that there must be pickups available in mid-flight which, when touched, never fail to affix themselves perfectly to the front of your ship, so increasing your fire power. Hurrah! These change colour from red to blue, and depending on there colour when you touch it, you get a corresponding weapon. Blue for an extra laser, and red for a more-powerful-pea-shooter. Lasers are definitely the one to get. Oh, and if you pick up a P symbol, you're given the most powerful weapon possible immediately.

For the enemies with more armour, your ship is equipped with three energy bombs. When dropped, these cause havoc in a huge area almost covering the screen. However, three isn't really enough for some levels, so thankfully the odd Bomb pickup is released when you shoot specific targets on the landscape.

The enemies are many and varied, ranging from small, quick semi-kamikaze ships that race down the screen, hoping to crash into you rather than aiming to shoot you down; to large, metallic hulls with firepower to match their size. Each enemy has its own set movement path, so it's possible to learn the attack formations in each level. On-screen everything moves incredibly smoothly, with no let-up in the action – at least, while it lasts.

AVOID THESE...

ROCKET LAUNCHERS

With a small rotating gun turret this enemy fires several rounds at once, in all directions.

RAILWAY TURRETS

If left unchallenged, these machines open up revealing a powerful gun. Shoot on sight.

TINY SHIPS

Avoid these like the plague – they move very very quickly, and don't mind giving up their lives in return for your death.

LARGE FIGHTERS

Taking many hits to kill, these fighters are loaded up to the eyeballs with bullets – concentrate on killing them first.

BIG BAD BEASTIES

Metallic aliens like him abound, with lots of small compartments containing guns.

SUPER-HUGE HORRID ENEMY BLIGHTERS

On the later levels, watch out for these things creeping up on you. They kill you on contact, fire lots of bullets, and move up and down the screen.

GUN TURRETS

Although they only fire in a single direction, gun turrets have good accuracy, so don't hang around – shoot them.

TANK

Again shooting in one direction, tanks have the added capability of movement, albeit slowly.

● *Raiden* – the coin-op was based on another vertically-scrolling shooter which appeared some years before. That game? *Xevious*.

● *Raiden's* desert scenes are very good-looking. The sand texture is just right, and the odd dinosaur skeleton adds to the effect.

Infinitely hard

And here, we've hit upon *Raiden's* major problem. The game itself is not bad, but there's just not enough of it.

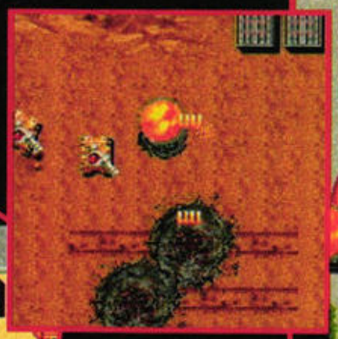
"A vertically-scrolling shoot-'em-up – very fast, very frenzied, and rather difficult to boot"

Having finished all eight levels within a few hours of beginning play, it could be considered that the game is a little too short. Either that or there are too many continues (a choice of three, five or eight, presumably to give different levels of difficulty), but even so it's relatively easy to finish all the levels.

When the eight levels are over the game repeats itself, but becomes more difficult than the first time. Apparently there is no limit to the number of difficulty levels, but there is a limit to the tedium of going where you've been before. What we need is more levels, not

● Vast gunboats like this make up the end-of-level baddies. Huge, metal tanks with guns sticking out everywhere. Gosh.

• It's amazing what you find on these distant planets. Take this, a kind of extra-terrestrial Acropolis (albeit in concrete), which plays havoc with your eyes.



• Right: aftermath of war. Below: *Raiden* right in the thick of things.

• Grab a P icon to increase your weapon to full power.

the same ones over again. Just another four would have done – some incredibly difficult stages to really test your mettle.

You see, arcade coin-ops have a difficulty which is weighted to rake in the most money. The games normally begin hard, then get harder – and the only way to continue is to stick another fifty pence piece in. *Raiden* is typical of this type of game, and this conversion is so accurate that you almost feel like putting money into a slot just below the Jaguar. To work correctly in the home, the difficulty level should have been turned down slightly, and fewer continues made available.

True to the coin-op (again), *Raiden* offers you a two-player simultaneous mode, which really adds to the gameplay. You need an extra controller, obviously, but there's no slowdown in the game's movement, and the action gets suitably harder and faster to cope with the extra fire power. You control two separate ships each with its own weapon, but line the two ships up vertically, and the top ship amplifies the lower ship's fire, giving a special super-weapon.

Complex parallax scrolling?

If you're new to shoot-'em-ups, it's possible you may be frustrated by the difficulty of *Raiden*. However, if you're reasonably proficient you'll relish the challenge of finishing the eight levels, then maybe have a go at the second wave of eight, and then get bored with it very quickly. So, just which type of gamer is *Raiden* aimed at?

Raiden surely uses just a small amount of the Jaguar's power. It requires only one level of parallax scrolling (defying the box blurb's claim of "complex parallax scrolling,") and the palettes are pitifully small in comparison with Jaguar's capability. There are loads of sprites moving on the screen at once, though, with no noticeable slowdown, so as we said the game is arcade-perfect. The one curiosity is, as with the arcade game, the side panel is huge, covering over a third of the screen. Sometimes ships appear on the screen, but they're hidden behind the panel so they can easily ambush you from three o'clock, so to speak. Why isn't it smaller?

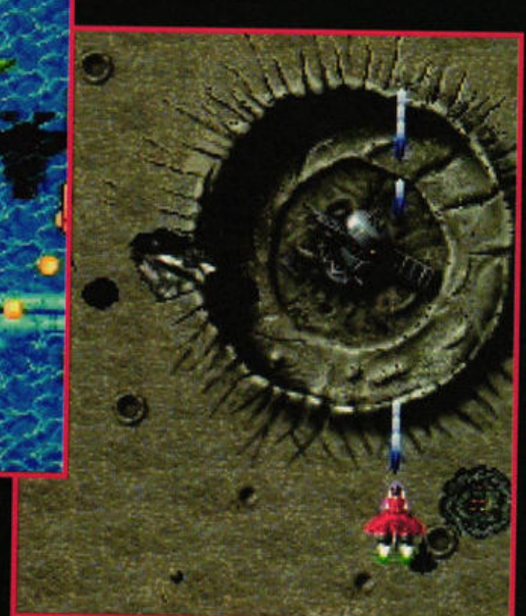
"There are loads of sprites moving on the screen at once and with no noticeable slowdown, the game is arcade perfect"

This Jaguar conversion is certainly many times better than the versions of *Raiden* for Sega and Nintendo's 16-bit consoles, so perhaps we should be singing the praises of Atari for giving us such a good conversion. Then again, we're expecting conversions of some of the later coin-ops as well, which would push Jaguar's features – take, for example, *Tempest 2000* which adds in stacks of features to an ageing coin-op, bringing it up to date.

Raiden is an interesting taster for what's to come, a good blast which keeps your interest for a couple of days. By then you may want to move on to something else, so let's hope the next offerings from Jaguar's stable are better.

ANDY NUTTALL

• Regardless of the height of the enemy, your fire magically hits them (well, when you aim correctly, anyway). So, forget the shadows – shoot straight between the eyes.



• As you can see, some of the planetary graphics are very realistic. The background graphics range from the stunning to the mediocre – sadly, there's more of the latter.

• *Raiden 2*, *Raiden*'s sequel, is soon out on the SNES. Imagitec reckon there is to be a Jag version, but are they going to do it?

RAIDEN

£59.99 ■ Atari
Import

GRAPHICS
Arcade-perfect, but Jaguar will see better.

SOUND
Boppy coin-op-style tunes, if a little dated.

CAPABILITY
Hopefully the Jag's capable of much better.

GAMEPLAY
Exciting and fast (for a short while).

STF RATING 70%

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CRESCENT

Graphics alone do not a good game make. Let's find out why, with Atari's latest Jag-baby

Trevor McFur in *Crescent Galaxy* is shallow. Let's not be sad and pretend that what we have is a good game, because what we have is a shoot-'em-up which is so bog-standard it might as well be made of porcelain and have a seat. As exclusively predicted in *ST FORMAT* last month, *Galaxy* has very little depth, and apart from the excellent graphics and quality sound effects we have a game which stems from the very early days of videogaming.

Crescent Galaxy could be a CD game, actually. That's not meant as a slur on CD, which is, undoubtedly, a great medium in which to store games, but merely a reflection on the majority of CD-based games which have appeared to date. *Dragon's Lair, Road Avenger, Mad Dog McCree, Microcosm* – all games which are astonishingly pretty, sound great, but contain very little in the way of an actual game. Is this what we really want?

● Balls, and plenty of them. These are some of the least interesting enemies from any game ever. Yes, they're rendered; yes, they're pretty; but they aren't animated and they have no intelligence.

● The graphics in *Crescent Galaxy* are stunning, but they do suffer from a lack of parallax scrolling.

"Each of the enemies, asteroids and spaceships have been expertly raytraced, and move beautifully"

The good...

Hey, let's talk about the good bits first. *Crescent Galaxy (CG)* is a sideways-scrolling shoot-'em-up, and as you can see from the screenshots the graphics are second to none. Each of the enemies, asteroids and spaceships have been expertly raytraced, and move beautifully. Top marks to the designers.

Likewise the sound. A minimal tune marks the theme, with pleasant sampled instruments plinking out an ambient soundtrack. The effects are atmospheric with a crackling, electrical-sounding sample when you fire a laser, and great explosion sounds.

Uh, right. They're the good parts. So on to the rest. Oh, dear...

● *CG's* an original shoot-'em-up created for the Jaguar. Funny, that, because the Jaguar's capable of so much more.

ENEMIES AFOOT

The alien entities most likely to succeed, in reverse order, along with their official descriptions and marks out of ten, are:

8 FIREFLIES

"Armored insectoids with a laser sting." Short, sweet, to-the-point. More of these, please. 8/10

7 SCORPIONS

"Technology's finest alloys formed in the shape of one of nature's fiercest predators." Not bad. 7/10

6 CYBER SPIDERS

"Chromed creepy crawlies spin a certain doom for you here. Where there's one, there are more to follow!" Alliteration, we love it. 6/10

5 DINOS

"Thick armoured skin and laser blast eyes make this running raptor one to avoid." Raptors are in vogue, otherwise a little dull. 5/10

4 DRAGONS

"Don't let the butterfly wings fool you, these creatures are sturdy reptiles with an appetite." Great, except they're not like this in the actual game. 4/10

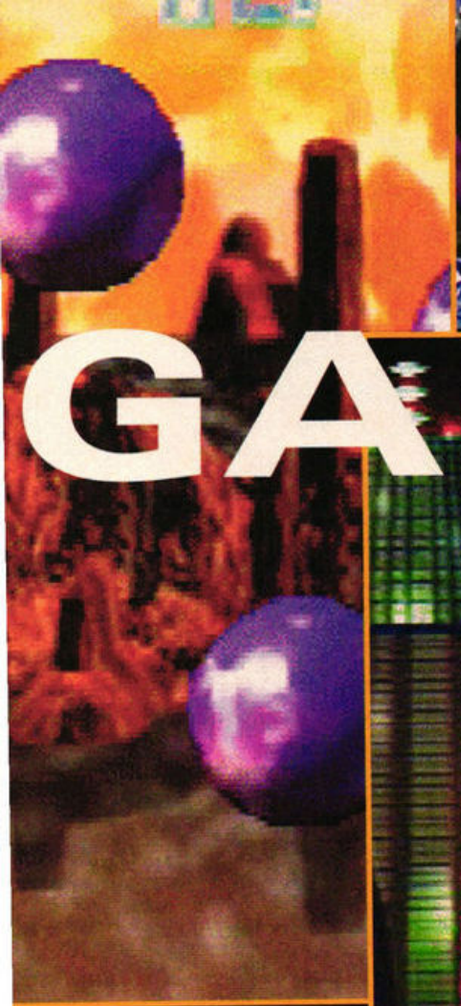
3 SPINNERS

"Go round and round! Don't let their round razor edges catch you!" Too short, no humour, poor use of exclamations. 3/10

2 CUBE

"Not a box shape to mess around with," apparently. We couldn't find any alternative box shapes, though, however hard we tried. 2/10

GALAXY



● Let the eyes have it... lots of pea-shooting fire power, that is. The eyeballs explode with a disgusting "pop" noise, and then become smaller eyeballs. Urgh.

... the bad...

Let's begin the downturn with the presentation. There is no presentation to speak of. Yes, there are introduction screens and little messages that come up to tell you when you're dead, but very little thought appears to have been taken about real presentation.

In fact, it's almost as though the developers have been asleep for the last eight years, and they haven't learned any of the tricks and features which endear games to the players. Take dying, for instance. Nobody likes it, and everybody who plays a game tries to avoid bullets and enemies making contact with their ship. That's the point. However, you come to accept that dying is part and parcel of playing a shoot-'em-up, and you take it (reasonably) gracefully.

Crescent Galaxy is slightly different, because when you die there's an explosion, and then you return immediately. There's no break, no animation, no let up in the action for a while so you can compose yourself for your next attempt: you're just there.

And, when you've used up your life quota of five ships, *CG* asks you to "Press fire to continue." You have no choice: you press fire, you continue. After three continues, you die. It's all very clinical, that's the problem.

The background graphics are invariably beautifully-drawn, but they scroll

● *CG*'s designers must have taken something naughty to get some ideas. Otherwise, how would they have invented Cyber Cherubs?

● This level makes you want to sing *Sing Me A Rainbow*, (or something quite jolly anyway). Wear sunglasses.

1 CYBER CHERUBS

"Chromed cuties with guns of steel. Watch out! Their arrows aren't full of love." Hmmm. Guns which fire arrows? I don't think so. And what a terrible idea, anyway. 0/10

VERDICT

So the trophy goes to the Cyber Cherubs. A likeable bunch, but sadly a nightmare in the hands of the copy writers.

● As somebody commented "The backgrounds look like you're scrolling past somebody's living room, with a particularly pleasing mural on the wall." And we agree.

● Nine out of ten owners said their cat didn't want to do this.

past a kind of wallpaper. It's very two-dimensional, and even the odd parallax object which scrolls past doesn't help. The potential must be in the Jaguar to produce multi-layer parallax scrolling, so why wasn't it used here? It wouldn't have upped the gameplay, but it would have made it even more pretty.

Also, we have the utter travesty that is the high-score table. Like any average high-score table, *CG's* proudly displays the scores in order of greatness in front of a pretty image. But, it won't let you enter your name. Nope, no way. Let me ask you, Mr Developer, what's the point? Why have a high-score table at all, if you can't enter your name?

● *Crescent Galaxy? Crescent Load-of-old-cack*, we say. Come on, Mr Atari, try to put in some gameplay and presentation next time...

... and the average

The idea of the game is to take Trevor McFur in his spaceship and wipe out the enemy. The foe in this case is a vile entity known curiously as Odd-It (for reasons only known to Atari). The plot's all based around a planet called Cosmolite which, along with its four moons, has been overthrown by killer Starbots, deadly Gundinos and savage Cyber Cherubs. Er, right. Yes, more oddly-named entities gang up on you and fire lots of bullets in your general direction. "This doesn't sound too bad, really. What exactly is wrong with *Crescent Galaxy?*"

"The idea of the game is to take Trevor McFur in his spaceship and wipe out the enemy"

Er, it's just all a bit sad, really. There's a lot of potential in sideways-scrolling shoot-'em-ups, as proven with coin-ops such as *Nemesis, R-Type* and the like, and the fact is *CG* takes the game back to its very roots. It rather lacks polish, refinement, atmosphere; but most of all it's not addictive. The difficulty level is high, but it doesn't have enough appeal to bring you back again and again in an attempt to better your high score.

Sorry to point out the box blurb, but it's just so fitting: "A 64-bit gaming experience like no other." Thank God, I say.

ANDY NUTTALL

MOTHER TONGUE?

The text in the game is especially badly-written. Whoever typed the appalling snippets of prose into their computer should be shot, because it reads like some copy that has been poorly translated from original Japanese. Take this example:

"General Patent here, McFur-ball, now quit fooling around. You can still pull kitty litter duty! That is if Odd-It's not wearing that pretty coat of yours. It's up to you and Cutter now! Luck to both of you — Patent out!"

Er, yes. Perhaps the writer wasn't helped by the terrible naming of characters: "McFur" for the hero; "Odd-It" for the baddie; "General Patent" for the old soldier; but even so this trite collection of puns should never have made it into a finished game. The Americans may like it, but we don't. Disgraceful.

CRESCENT GALAXY

£59.99 ■ Atari Import

GRAPHICS ●●●●
Great rendering, limited parallax.

SOUND ●●
Odd music, fiddly sound effects.

CAPABILITY ●●
Fast and colourful, could do better.

GAMEPLAY ●
Dull, tedious romp.

STF RATING 44%

presenting...

IMAGITEC

Why have Imagitec ventured into depths of Atari's machines where others fear to tread?

● Imagitec President Martin Hooley and Pig. Not Piglet.

● Check out our review of *Raiden* on page 50, then sit back and wait for the sequel.

● *Evolution Dino Dudes* is out on the Falcon now and for the Jag next month.

● First has to be because Imagitec reckon Atari are "a very good company" who "have their head together with the Jaguar... they are on a better footing now than they have been for years." They describe their working relationship with Atari as "awesome."

● Following on from this, they reckon they can make money out of developing games for Atari's machines, along with those of Sega and Nintendo – after all, they "develop for anything that will make us money."

● As well as such honest financial considerations, Imagitec obviously relish working with advanced technology. They reckon the Jaguar is "brilliant" and "amazing," there being very little technically that they would like to do with it that they can't since the custom hardware that's in the machine reduces all the limits.

● Although in some areas of the computer industry there is still some scepticism as to whether Atari can compete successfully in the console market, Imagitec are happy: "Atari have been slightly low-key, but we had the advantage of knowing about the Jaguar before most people, and once we knew what was coming we were pretty confident about it."

"The Jaguar's better than 3DO and will wipe the floor with it - the price difference alone will see to that"

● And as to the competition...? Piglet reckons "the Jaguar's better than 3DO and will wipe the floor with it – the price difference alone will see to that." And as for Sega and Nintendo 64-bit contenders? "The Jaguar will compete on an even footing with them, at least. It will have a very big user base, which will give it a headstart and the prices of the new machines will affect the market then. It depends how much Nintendo can sell their 64-bit hardware for – they'll sell it at a loss anyway, but how much of a loss can they sustain? It depends how much they spend developing the hardware."

● Imagitec was formed seven years ago, employs around 45 people and works out of a former newspaper office in Dewsbury, West Yorkshire. They do everything in-house so they can finish everything faster.

● They have done lots of work for the ST including developing *Zone Warriors* (38%, *STF* 28) and converting early games from the Ultima series like *Suspicious Cargo* (79%, *STF* 31).

● Imagitec specialise in creating music for the rest of the computer games industry, having worked with the Bitmap Brothers, Virgin, Core Design as well as having created music for the Jaguar's *Tempest 2000*.

● As to their own Jaguar games, specifically *Raiden* and *Evolution Dino Dudes*, Imagitec comment "Neither is stunningly revolutionary but they're good games – better than other versions simply because the machine's more capable. *Raiden's* better than the arcade version but we are constrained by conversions – *Raiden 2's* presumably going to be released on the Jaguar so we don't want to upstage the sequel before they are done."

● And as for their own aims when they're busy producing games? "We want to get the most out of the machine. The Jaguar is new and people aren't fully aware of what it's capable of yet we're trying to push it with our games. It's fully capable of exploiting the stuff we've used for other platforms and we've already made mistakes on those which we've learned from, so by the time it comes out on the Jaguar we'll have perfected the technique to make some really good games.

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ISSUE 54

JANUARY 1994
Disks: *KCS Omega; Hyperpaint 2; Spherical, Nova.*
Inside: *Frontier: Elite 2* previewed; best buys of 1993; *Vidi ST* and Colorburst scanner reviewed.

ISSUE 53

DECEMBER 1993
Two disks: *Arabesque*, a vector graphics program worth £130 plus a useable demo of *Raystart*. **Inside:** Falcon special plus the index of 1993.

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NOVEMBER 1993
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Inside: Discover the power of raytracing, and take a look at MultiTOS.

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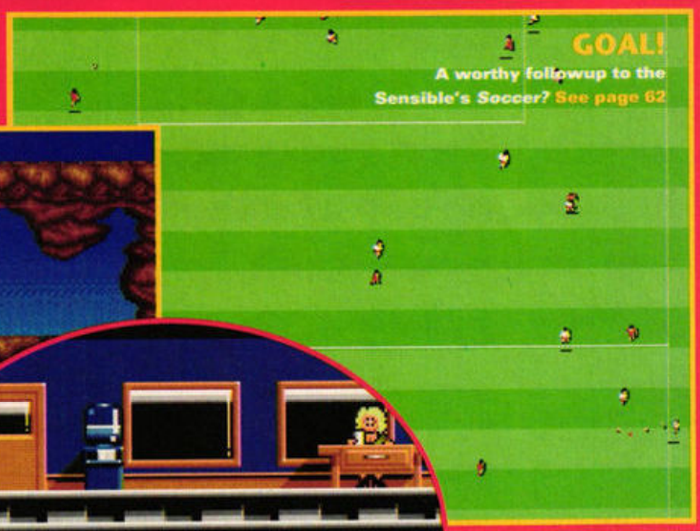


GOAL!
A worthy followup to the Sensible's *Soccer*? See page 62

EVOLUTION DINO DUDES
Help people evolve into the knowledgeable specimens they are today with the Falcon - see page 70

LETHAL WEAPON
Riggs and Murtaugh team up in the Hit Squad's platformer.
See page 66

HELP!

- GOBLIINS 2 – the second and final part of our solution. See page 75
- GRANDAD 2 AND THE SEARCH FOR SANDWICHES – hints and tips for this popular Shareware game. Page 76
- FRONTIER: ELITE 2 – stuck here and nowhere to go? See page 78
- *PLUS!* Captain Blunder answers your questions starting on page 75

GRANDAD 2
Guide Grandad through all his levels with our complete solution.
See page 76

GOBLIINS 2
Get help in this brilliantly designed puzzle game from France.
See page 76

CHARTS

This month	Last month	Game	Publisher	Price	*STF* Rating
1	(18)	Frontier: Elite 2	Gametek	£29.99	91%
2	(5)	Lemmings 2	Psygnosis	£29.99	96%
3	(10)	Street Fighter 2	Kixx XL	£14.99	91%
4	(3)	Sensible Soccer 92/93	Renegade	£25.99	91%
5	(-)	Colossus Chess X	CDS	£7.99	N/A
6	(1)	Zool	Gremlin	£25.99	89%
7	(4)	Monkey Island	Kixx XL	£16.99	90%
8	(15)	The Chaos Engine	Renegade	£25.99	94%
9	(7)	Striker	GBH	£9.99	79%
10	(2)	Premier Manager	Gremlin	£25.99	85%

WEIRD AND WONDERFUL

- *Frontier's* zoomed in from a lowly number 18 to hit the hot top spot this month.
- Amazingly, *Lemmings 2* is rising back up to become another main competitor.
- The most amazing surprise is how well the little-known *Colossus Chess* is doing... all very, erm interesting.

GOAL!

Hello, and welcome to Dino Dini's *Goal!*, a game which Virgin touts as leagues ahead of other footie games. Yeah, chinny reckon...

This pitch is in Zoom Out mode, which happens when you're taking goal kicks and throw-ins. Or, you can set it like this permanently for a *Sensible* simulation.

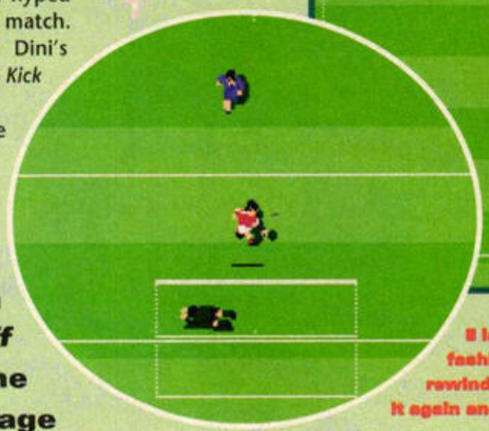
The *Goal!* pitch, in its full-size glory. This was done with the aid of modern technology. There aren't this many players normally.

The guy in white's about to take a throw-in, hence the dotted line. God, this looks like a Where's Wally? puzzle.

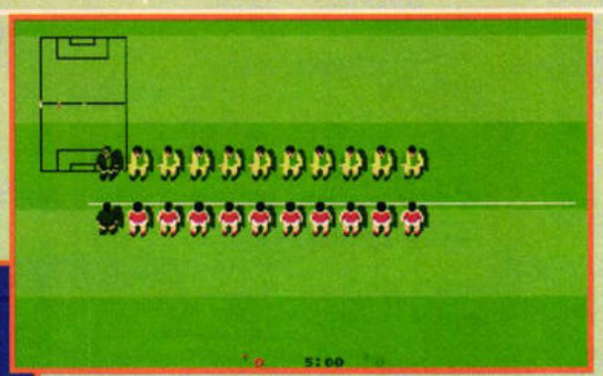
The ST sure has its moments. Despite being seen by most gamesplayers as a second-tier machine, we're still treated to some of the most excellent titles seen on other formats – if a little later than others. Last month we reviewed *Frontier:* a hugely-hyped game with gameplay to match. Now we have *Goal!*, Dino Dini's much-publicised sequel to *Kick Off 2*. Not bad, eh?

Let's review the scene so far. Most ST footie players belong to one of two camps: the *Kick Off 2* camp, and the *Sensible Soccer* camp. *Sensible Soccer* was released in mid-1992, and is generally acclaimed to be the best football game on the ST. *Kick Off 2* was an earlier game, but still some players insist that the earlier game pips the newcomer to the post. Just to help redress the balance, though, the aforementioned author of *Kick Off 2* has redesigned his game and released it through Virgin under the name of *Goal!*. The *Kick Off* games had one distinct advantage over *Sensible*, and that was the ability to trap the ball.

"The *Kick Off* games had one distinct advantage over *Sensible*, and that was the ability to trap the ball"



Ian Rush beats the keeper in a typical fashion - and thanks to the excellent rewind and replay functions, you can watch it again and again and again...



Liverpool line up for play against Manchester United... playing in Norwich's colours, it seems. Or are they?

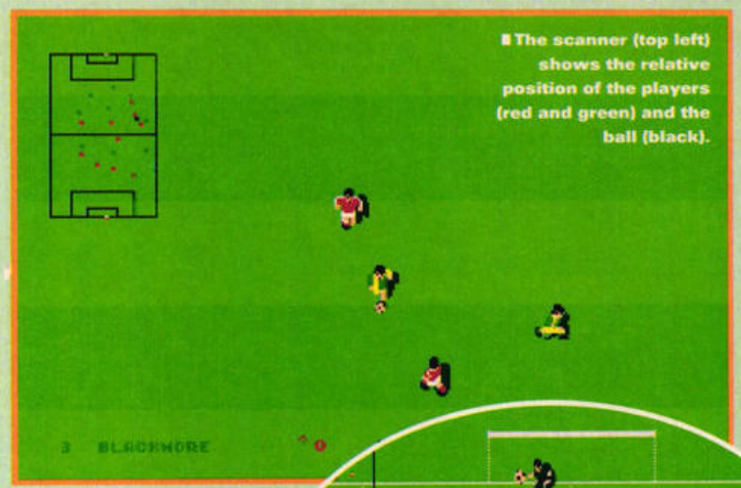
The arcade challenge mode is a great addition, because it makes you play five progressively more difficult teams, and score as many goals as you can.

By holding the fire button down, your player would hold the ball under his foot, giving you plenty of time to look for that special cross to the right winger before letting rip. *Goal!* keeps this feature, along with many of the other good bits from *Kick Off 2*.

We've got new boots...

The most noticeable difference between this and the previous game, in fact, is the difference in size of the sprites. Each player is significantly larger than its *KO* counterpart, so Dino has been able to give them more human features and animation. Because the scale is quite large, you view the pitch from just above the players, only able to see a small amount of the pitch at any one time. This doesn't make for easy strategic play, but you're given a scanner which tells you the position of the players and ball on the pitch. The scanner sits in one corner of the screen, moving to a different corner if it interferes with play – an attention to detail feature which earns it some credit.

Goal! also features a horizontally-scrolling pitch as well as the more usual vertical. This seemingly frivolous addition actually gives the game extra appeal, if only because in two-player mode nobody really has an advantage (whereas in vertically-scrolling mode, it's generally considered that playing downwards is something of a handicap). There's no net in the goal-mouth, but more about that later.



The scanner (top left) shows the relative position of the players (red and green) and the ball (black).

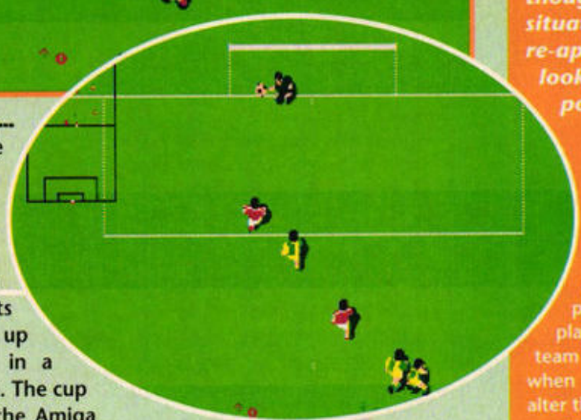
...there's even a cup...

As well as playing single games, all the usual competitions are lurking around the options screen. These give you and some friends the chance to pit your wits against each other and up to 63 computer teams in a league or a cup challenge. The cup is something that even the Amiga version didn't contain, showing that being rather late on the list of developments can sometimes have its advantages.

The teams are chosen from around Europe. Sadly, although real-life teams are on offer, the team lists are way out of date. For example, in Liverpool Irvan Kozma is still playing in the first team, whereas in real-life he's hanging around waiting to be deported. Similarly, Mike Marsh and David Burrows both went to West Ham some months ago. The world of football transfers is never easy to follow, but a little more thought would have been good here.

Also, team colours are a bugbear. Taking Liverpool again, both home and away kits feature white shorts. Come on – when have Liverpool ever played in white shorts?

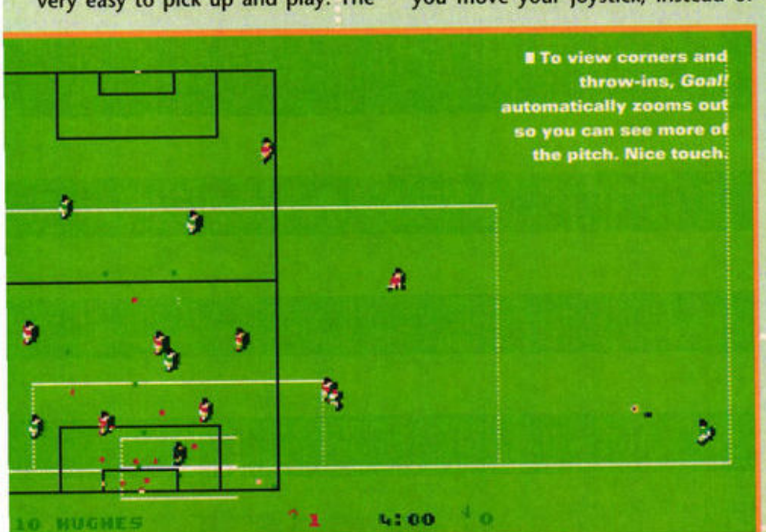
On the positive side, *Goal!* is very easy to pick up and play. The controls are simple and intuitive, and the ability to trap and control the ball is as useful as ever. A new feature which makes it even easier is momentum; each player has its own apparent weight. So, when you move your joystick, instead of your player running at top speed immediately, he accelerates. When you change direction, the player still has some momentum making fast 180° turns difficult. So, running with the ball and dribbling are possible, without needing to touch the fire button. Great touch.



"Good grief – Rush is at it again. Blimey, you really can't stop this man, can you?" Oh, the life of a commentator is not a happy one.

"Running with the ball and dribbling is possible, without needing to touch the fire button"

Rush, in one of his calmer moments, scores again. Well, this only Manchester United, isn't it. Schmeichel was well beaten.



To view corners and throw-ins, *Goal!* automatically zooms out so you can see more of the pitch. Nice touch.

...but the onion bag's gone

The lack of a goal net is extremely off-putting. Yes, just like *Kick Off 2*, sadly the goal is entirely bare, giving the impression that it's more of a rugby pitch than a football ground. Presumably the goal posts' nakedness has something to do with difficulty in keeping the keeper, so to speak, behind his net; but surely a net of some sort could have been fashioned. As it is, it just looks ridiculous.

Then, just to add insult to injury, *Goal!* delivers another crashing blow to those who believe the ST to be as capable as any other machine to run games. Get this: despite there being four different types of pitch – dry, wet, muddy and Wembley – there is only one pitch graphic. So, when recreating a lovely, sunny day in Wembley, *Goal!* displays a gorgeous, well-rolled green pasture, with no blemishes to spoil the uniformity. But

THE SENSIBLE OPTION?

The benchmark for any football game to be released for the ST is obviously Sensible Soccer. The original aim of Sensible was to better Kick Off 2, which was at the time the best football game around, and just about everybody considered it to have done its job.

Now Goal!'s here, though, we reckon the situation deserves a re-appraisal. Let's take a look at the good and bad points of both games:

SENSIBLE SOCCER

Good bits

This is the most thoroughly-researched football game in history. Not only do we have all the main teams from European football, but also the player names, managers and team strips are very accurate. And, when the teams change, you can alter the players' names accordingly.

The players are small, but the pitch is quite small scale as well – so it's easy to build up team strategies. Oh, and there are bags of atmosphere, lots of sampled crowd effects, whistles and chants. It's the easiest football game to play. Even total novices can pick it up and play against seasoned pros immediately.

However, although it's easy to play there's plenty of depth, making it possible to build up your own style of play – just like real-life footie.

Bad bits

Very little. The players' small size might make it a bit hard on your eyes after a few hours, but that's about all.

GOAL!

Good bits

You can trap the ball, which is a great bonus, but it does make control slightly difficult at first. Once you've mastered the controls, both trapping and one-touch passing are possible, making for some spectacular displays of football skills.

Large, realistic players, much bigger than in *Kick Off 2*, which are well-animated.

Bad bits

Very little in the way of football atmosphere. There's not much sound, no net in the goal and the pitch graphics are a joke. The glitches and bugs affect almost all areas of the game. A shame.

CONCLUSION

Heck, *Sensible Soccer* wins it hands down, really.

A set of statistics can be displayed to show you how much you saw of the ball. Presumably to keep the European players happy, or something.

This is *Goal!* in horizontal mode... a travesty of programming. Glitches abound, players disappear, and as soon as the goalie is on-screen, everything slows down to a Sunday League match.

select a muddy pitch, to create a dirty, soiled, damp scene of football at its most moist, and your eyes are treated to a... gorgeous, well-rolled green pasture, with no blemishes to spoil the uniformity.

Also, the green stripes of the pitch have a tendency to drift up and down, regardless of your or the ball's position on the pitch. This is worse when playing horizontally, where the stripes of the pitch go lengthways along the pitch. The horizontal play, incidentally, is so bug-ridden and glitchy that it's not even worth mentioning.

Going down...

Even the one pitch here seems to have no, oh, what's the word; atmosphere? There's no advertising hoardings lining the pitch, only the odd crackly sampled crowd. And there's only a very limited range of sound effects. Why, why, oh why? Perhaps to conserve costs in only requiring one disk instead of the Amiga's two. Perhaps because of time constraints. Surely, though, for no other reason.

The Amiga version of *Goal!* was criticised for not having enough detail, but this really is just taking the mickey. Loads of tweaks have been made to the gameplay which make it great to play, but

"The controls are simple and intuitive, and the ability to trap and control the ball is as useful as ever"

sadly the lack of pitch variety or sound effects spoil the presentation. The large number of competitions, tactics and teams are great, but again it's slightly marred by lack of attention to detail, especially in the team lists and colours.

... and down

And the bugs... well, they spoil it entirely. Sometimes you can't even get through a single game without it crashing, never mind an entire competition. It took us an entire day to grab the images of the game you see in this review, because the damn thing kept hanging up. And even if you do manage a game, your players disappear occasionally, and then magically reappear elsewhere, or the movement slows down horribly and your players jerk around. Sorry Virgin, but the polished finish of *Sensible Soccer* still does it for us, even a year after the event.

ANDY NUTTALL

Goal!

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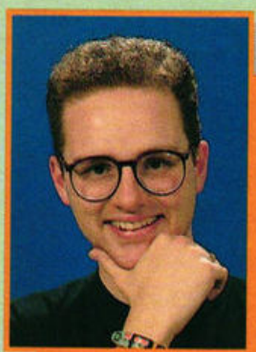
Highs

- Each player carries momentum, making dribbling easy.
- Fast, furious footbal action (when it works.)

Lows

- It crashes. A lot. *Goal!* has no net, all pitch styles look the same.



ANDY NUTTALL THINKS...

It has been said that for a while the ST games market is wilting. To that group of steadfast ST believers who strongly perceive that there are many companies out there are still willing to plough money and time into creating top-quality games for the ST (and, we might add, a group to which *ST FORMAT* subscribes), Virgin Interactive Entertainment (Europe) Ltd waves *Goal!* And laughs, no doubt.

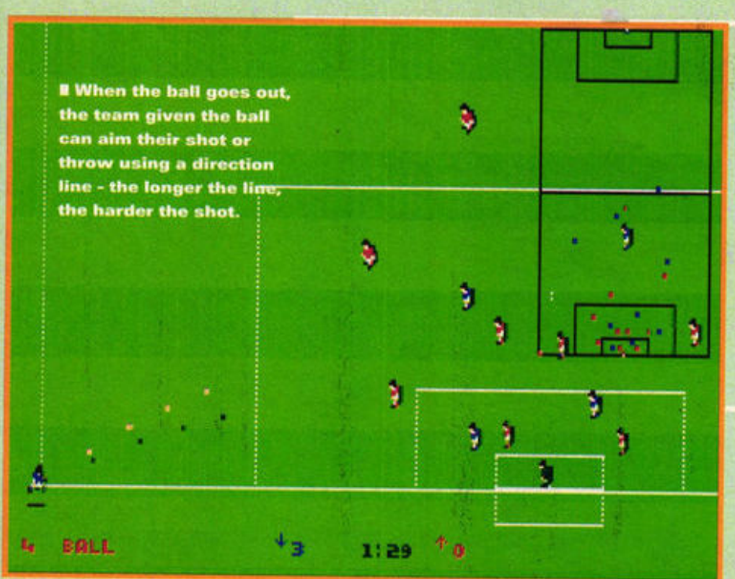
It's all very well producing the games, bringing big names such as *Bart vs the World*, *Goal!* and the forthcoming *Cannon Fodder* to the ST, but if they're not willing to make them any good then, quite frankly, VIE (E) Ltd might as well not bother. Take the travesty of *Bart* reviewed in last month's *ST FORMAT*. This disastrous game, programmed by the over-rated Acclaim and bought by Virgin, should never have seen the light of day in its current form.

Sensing this, Virgin slipped *Bart* out of the back door without telling any of the magazines, ensnaring as many innocent wide-eyed children, grasping weeks of patiently-earned pocket money in their hand, as possible. This Dickensian scenario goes on, there's no denying that, and now, with *Goal!*, they've done the same thing again. Actually, *Goal!* isn't that bad. It's not great, but it can hardly be compared with the utterly awful *Bart*. Yet still the second full-price game from Virgin in less than a month smells of slashed budgets and rushed deadlines. There are so many bugs and glitches in it that there's no way it should have passed through quality control.

So, the ST is stuck in a self-fulfilling prophesy, which states: "ST games shall continue to be shoddy and poorly-produced, which in turn shall continue the ST's decrease in popularity with the game-playing masses. This reduces the number of games sold, which decreases the amount of resources pushed into the games, which reduces the quality of the games." Gasp.

This is exactly what's happening to the ST. Piracy may be one reason for its failing, but poor-quality games are a second thorn in the side. I'm not saying that the salvation of the ST lies entirely on Virgin's shoulders, but on all producers of ST games. David Braben's *Frontier* proved that the ST is still a markedly capable machine, and if more effort was spent on creating quality games, the situation might get better.

Virgin's next, and possibly last, offering for the ST is *Cannon Fodder* from the golden boys Sensible Software. Surely nothing can go wrong with that release? ST games are now at an all-time low. The time has come to start looking upwards again.



When the ball goes out, the team given the ball can aim their shot or throw using a direction line - the longer the line, the harder the shot.

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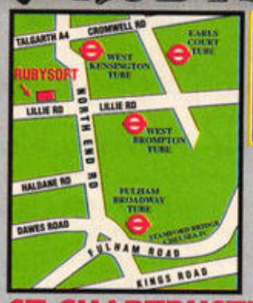

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LETHAL WEAPON

Run, jump, and shoot everything that moves. If only software companies would really think about the plot, and what people really want from games, this is what the entire instructions for most platform games would be. Just think: fewer pages, lower printing costs and no reviewers complaining about reams of wibbling plot in the manual.

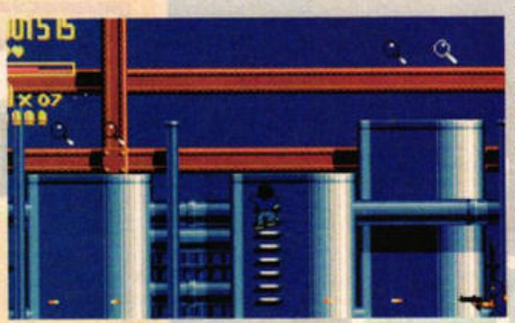
Since the early days of *Frankie Goes to Hollywood* – the platform game on the C64 – Ocean platform games have generally had a typical look about them. The backgrounds and sprites are polished and the action is smooth – nothing wrong with that. Occasionally, though, you feel that you're playing the same game as the last one, but with different graphics.

Lethal Weapon's like that. The plot's based around the third in the series of films, with three separate missions to complete before you can move on to the fourth and final stage. Missions include going down the docks and kicking or shooting people, going down the steelworks and shooting people, going down the subway and, er, shooting people. At the end of each mission is (three guesses) an end-of-level baddie who's difficult to beat.

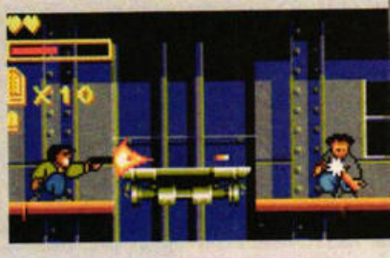
At under a tenner, *Lethal Weapon* is pretty good value – just make sure you that really want another platform game before you buy it. It's standard platform stuff, well-decorated but ultimately unsatisfying.

ANDY NUTTALL

Rigga (Mel Gibson) chats up the girls. Again. Honestly, these women are even programmed to turn their heads as he walks past. Hmmph.



Murtaugh (Danny Glover) is better with his gun than Rigga, but a little less able with his feet.



The Lemming-esque geezer in the middle's about to buy it from two directions. The guy with the teeth has a bullet, then there's the dynamite. Rigga is all right, though.

Lethal Weapon

£9.99 Hit Squad
☎ 061 832 6633

Highs
- The graphics are competent, it's quite large, and overall the game is a good challenge.

Lows
- Nothing new to offer over most other platform games. The characters could do with more animation frames.

STF 65

KING'S QUEST 1

After *Leisure Suit Larry* (STF 53, 57%), *King's Quest* is the second in the Sierra series of adventures re-released through Kixx XL. *Leisure Suit Larry* was pretty poor, but sadly *King's Quest* is marginally worse.

You see, the inherent problem with re-releasing early Sierra titles is the age of the damn things. *King's Quest 1* was first released in 1986, when all it had as competition was *Defender of the Crown* – a pretty game but a bad case of amant (all mouth and no trousers). Since then, we've seen adventures from Rainbird, LucasArts and Revolution, to name but three who have produced games that are many times better than *King's Quest 1*.

In the game you play bold Sir Graham, a knight who has been requested by his king to go and rescue three valuable magical artifacts which were pinched from the kingdom, in order that their land would prosper once more. The rescue of these artifacts proves extremely difficult – not because of the cunning puzzles and traps throughout the game, but because of the appallingly bad interface between you and the game.

It's a mixture between graphical and text adventure styles. You control Sir Graham with your mouse, and move him about the land; but when you need to examine or do something you have to type it into the command line. The point-and-click interface is rather slow and tedious especially with the addition of inputing text.

The next batch of *Quest* games contain *Police Quest* and *Space Quest* games, and then we move on to the second game in each series. As each sequel came along, the games got better – so we have some reasonably decent stuff to look forward to later this year. Don't wait for them, unless you're really desperate for another adventure, that is.

ANDY NUTTALL

No, this isn't a kid's colouring book, this is a serious, commercial computer game. It just looks like a kid's colouring book.

It seems that "our" Graham has lead-lined boots, for when he steps into water, he immediately drowns – putting paid to the rest of your adventure.

The little billy-goat in the field appears to serve no purpose. But, when you open the gate, he mysteriously vanishes...

King's Quest

£14.99 Kixx XL
☎ 021 625 3388

Highs
- Good puzzles, decent storyline.

Lows
- Graphics that were almost certainly drawn by a five year old.
- Terrible, outdated interface.
- Still £15, which is way too much money.

STF 37

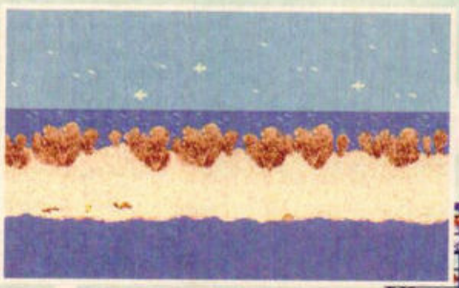
INFINITY ONE - THE SECRET OF THE FIRST DISK

Factasy – a new game genre or education software in disguise?

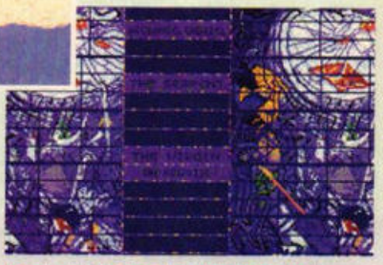
Games are supposed to be about entertainment. When they slip into the field of the grimly-phrased "edutainment" they're met with horror. *Infinity One* is billed as a new genre of game – the author describes it as "factasy," but it's almost education software. In fact, if you take it as such it's much more palatable.

The whole thing has an amateur air about it, not surprising really since it's been written entirely in *STOS Basic* by someone who doesn't claim to be either a graphical or sonic expert. This is a bit of a shame really considering all the effort that has gone into its creation.

Oh dear, a gratultous near naked woman and she's called Hollywood. It's hardly "Politically Correct," is it?



Infinity's graphics at their worst. If you look really closely you can see a seagull. Any moment it's going to take off and fetch a twig from the beach. Exciting stuff, eh?



One of the puzzles, you seem to have to identify things on the glass panel. The best thing to do it seems is to click everywhere. Great for developing mouse clicking skills.

Daa da da daa...

After the intro sequence to the accompaniment of the Latvian National Anthem (yes, really) and the complicated copy protection system you have to work out what you're supposed to do – there's no READ_ME file or any documentation that's any use to show you what to do. This is a deliberate measure to avoid wasting trees – a very green and honourable sacrifice of course, but it does mean that you end up struggling about not knowing what you're supposed to be doing. If it was a simple platform game this would be fine, you'd just shoot lots of nasties, collect lots of things and progress. But *Infinity One* isn't simple by any stretch of the imagination. And it's very slow though you do have the option to install the game to hard drive, which cuts down on the disk accessing.

You get introduced to the characters in tortuous detail; click on different parts of the picture and clues are revealed. There are loads of random clicks to be made which is very irritating – sometimes you get a result but most of the time you don't. Pick up the clues as you go along and then use them later on. One good little touch is that if you find the initials AK you earn some Latvian money.

One of the biggest problems with trying to get into *Infinity One* is that much of the subject matter it relates to isn't relevant to life in contemporary Western Europe. Historians might find it fascinating to learn about ancient Crete in this way, but it certainly isn't a topic that's going to appeal to a mass market.

Verdict

It isn't all bad news, though. When you do come across the straighforward puzzles they can be quite entertaining in a sort of I-can-do-*The-Times*-crossword way and just ending up somewhere completely different can be quite interesting – on a later level you get to travel through time and end up in different places with different snippets of information.

The graphics consist of a series of static screens, often including digitised pictures in colour, though trying to show human faces, clothing and background in 16 shades isn't the easiest task so they do tend to look rather peculiar. Occasionally there are small animations which liven things up slightly – such as a seagull flying to pick up some food from a beach scene – accompanied by some really abysmal sound effects. You need to have quite a commitment to learning about history – and oodles of patience before you learn to love this.

PAULA RICHARDS

MEET THE TEAM

Telepathy is a common theme throughout Infinity. Unfortunately you're unlikely to be possessed of the ability, so here's a straightforward guide

The Lady Renate of Aa seems to spend most of her time hanging around waiting for the clock to strike three so you can practise playing tunes by ear. Strange.

This his Johan and his mule, his, er friend. Johan's the guardian of the country.

Once this guy's finished spouting off about what each of the things in the picture are all you need to do is find the flowers and lay 'em down.

This is the Baroness of Aa; pay attention to her jewellery and eyes – and look for the AK symbol.

She really is the precocious brat she looks – her name's the Baronessa of Aa. Be prepared to listen to what she has to say or else you find yourself humiliated.

Infinity One

£33.33 Isandis Industries International Needs 1Byte ☎ +49 551 59982.

Highs

- There's lots of it!
- Brave new idea...

Lows

- ...That's not communicated very well.
- Too much randomness in the whole setup.

STF RATING 42%

ROBOCOP 3

It's Mr 209 to you. Or, if you insist, Edward. Oh, all right; Ed. But not Eddie Baby. I hate Eddie Baby. It's just too familiar. Oh, and by the way, you've got 20 seconds to lay down your weapons, mate.

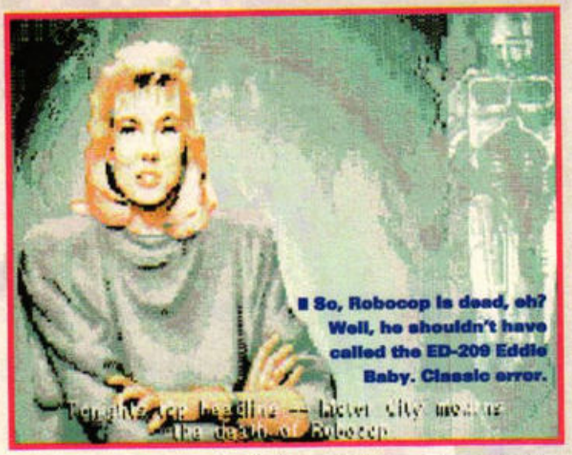
The signs say that the future has a silver lining in Detroit. They may be a tad optimistic because when you enter it in this game, it's a horrible place. That says a lot for the atmosphere you experience as you play, because *Robocop 3* is one of those games which draws you in until you forget the outside world until brought back by an aching bladder and, or, a cold cup of tea beside you.

You must rush around the city (in 3D), apprehending villains and having what can only be described as adventures. The plot of the game twists and turns like the film, and there's even an option to play the movie scenarios or the arcade game. Either way, you find yourself blasting, driving, flying and walking around having a whale of a time.

The car-chase sequences are very well done indeed, with a real sense of speed and masses of excitement as your quarry (you're told who to chase by your ST) rushes away from you.

But the flying sequences, although pretty similar, are great to get into as well. So are the walking bits. In fact, the whole thing's rather great.

It was a classic idea, to use 3D in *Robocop 3*. Forget all platform blasting notions and get into the assault car for a decent bit of chasing fun. Sure, though, after a while it gets a trifle samey, but the quality of the game tends to keep you there, and you won't be switching off in disgust when you have to do a section again because you failed it.



So, Robocop is dead, eh? Well, he shouldn't have called the ED-209 Eddie Baby. Classic error.

Verdict

A lovely idea, neatly executed. It's looking a tiny bit dated now, but the 3D is fast and smooth, and the game, coming as it does, on three disks, is big enough to satisfy those who want something to get your teeth into. *Robocop 3* may not be the future of law enforcement, but it should have a future in your games collection.

Sorry. That wasn't very good, was it? Never mind – buy this and enjoy it.

JAMES LEACH

Not so much *Robocop*, more like *Driving Miss Daisy*. In a sense.

Robocop 3
£9.99 Hit Squad
☎ 061 832 6633
Highs
Great effects, great atmosphere, lots to do.
Lows
A bit too much disk mungeing, can be tricky to master.
ST FORMAT RATING 84%

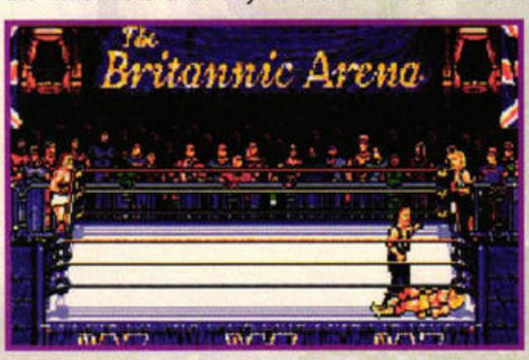
WWF EUROPEAN RAMPAGE

It takes more than 3,000 miles of Atlantic to stop the WWF teams from terrorising Europe. They simply got on a plane and flew over it. And now they're here, in historic Europe. Quake in your boots.

Actually, stop quaking now, I was joking. You see, there isn't much to fear from the WWF musclemen. At least not in this game. These seven-foot Goliaths of Death are little more than tiny cartoons with no feel, realism or redeeming features at all. They don't look good, they don't fight well and in fact they're a waste of time.

The Nasty Boys, the Legion of Doom, the self-styled Natural Disasters are all teams of tiny, virtually indistinguishable characters which walk around, miss each other most of the time, and occasionally fall over rather pathetically.

Moving the joystick makes a minor amount of difference to what goes on, but not enough to warrant the expenditure of calories on it. So sit back and watch, as if from a great distance, the ant-like cartoons act out their unholy charade. Unholy isn't the right word, actually. Crap is.



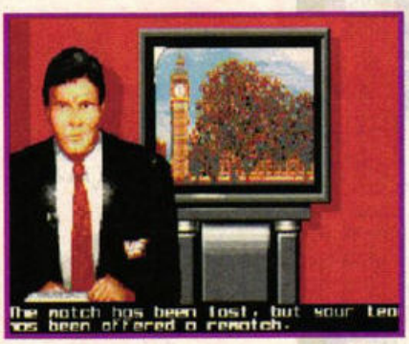
Elvis Costello said it best: "I can't stand up for falling down." Although *Watching the Detectives* comes quite close.

Verdict

It's very difficult to get the players to do any special moves apart from a slow kick that looks like the beginning of a tortoise's mating ritual through the wrong end of a telescope.

It's also impossible to see what's really going on because you're too far from the ring. It's sluggish, you can't do a lot and you end up falling over or kicking the enemy occasionally. What sort of a game is this? Oh, sure, there are special combat talents that you can pick for your men, and you do see a commentator from time to time, but if that's enough to persuade you to buy *European Rampage*, then you should enter into intensive self-analysis to find out why.

JAMES LEACH



Ah, you British are so cute, with your Big Ben, your scones and your miles of pretty, oil-covered coastline.

WWF European Rampage
£9.99 Hit Squad
☎ 061 832 6633
Highs
The manual is an ideal draught excluder for a cat-flap.
Lows
It's rubbish. Avoid it like the beach at Sellafield.
ST FORMAT RATING 28%

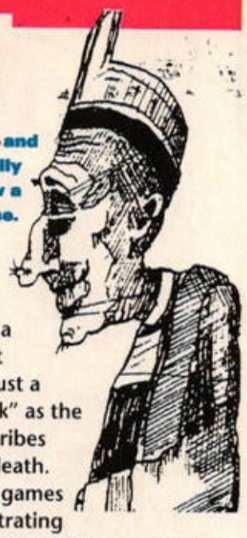
ACHETON

Prepare yourself for a trip around *Acheton* in search of huge riches and supernatural powers in the first of these two text adventure games from Topologika.

With no graphics or sound effects you have to be pretty committed to the genre before you're going to want to tackle these games with the disk's frustratingly slow access time which you come across every time you fail to survive – on top of being insulted as a rank amateur in your early attempts.

In *Acheton* you have to explore the country and preferably make a map up as you go along so you don't get completely lost and disorientated, although it's not particularly easy since the action takes place on three dimensions – up trees and down mines, for example. You've also got to be prepared to spend time and effort thinking about the best ways to solve the problems you come across, although there is a Help system which is pretty good. The whole thing's competently written and sufficiently large to keep you engrossed for ages.

Kingdom of Hamil is also on the disk – it's the same text adventure concept but here you start off stuck in a chapel at the start of your quest to regain Hamil. Inconveniently, any



I play this and can wear a silly hat and grow a huge nose.

attempts to escape through the doorway and a 16 ton weight falls on you, just a "slight setback" as the program describes your instant death.

Both games are very frustrating by turns but the thrill you get when you work out one of the puzzles or get one of the jokes is amazing. All you need is your imagination, lots of commitment, a pen and paper and you're off...

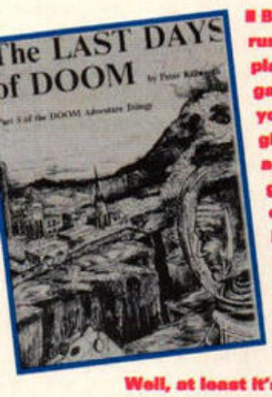
PAULA RICHARDS

Acheton
£20 Topologika
☎ 0733 244682
Highs
- Two classic games.
- Needs intelligent effort to play.

Lows
- Can be frustrating.

STF RATING 81%

THE LAST DAYS OF DOOM



I Bored of run-of-the-mill platform games? Then you need to give text adventures a go. This one comes with its very own *Blue Peter*-style pink cardboard robot dog. Well, at least it's different.

The third in the *Doom* series, this finds you in the company of a crew and your very own robot dog; Topologika thoughtfully provide a build-your-own-dog on pink cardboard, presumably in case you get lonely on your journeying using your imagination.

One of the best things about these games is the realism – if you get lost in a dense forest, for example, you can't just retrace your steps and get out, you end up getting completely and utterly lost. The aim here is to attempt to save Doom with the help and hindrance of spaceships, robots and a ruined city – it's pretty tricky in places but very absorbing, and absolutely huge. Unfortunately it looks as if it's been rushed as there are several typographical errors.

Free on this disk comes *Hezarin*, coincidentally the same name as the world which is unhappily held in the grip of an evil tyrant. Well, that's what the packaging said – and as is typical of these adventures you have to go and help the inhabitants out.

Both are good fun and well worth a look.

PAULA RICHARDS

Last Days of Doom
£20 Topologika
☎ 0733 244682
Highs
- Absorbing and long lasting.

Lows
- Slow disk accessing.
- Easy to die.

STF RATING 73%

PC GAMER

BE AFRAID... BE VERY AFRAID

The long-awaited CD ROM revolution arrives at last in the February issue of *PC Gamer*, with a glut of games that brings your darkest nightmares to life. *Critical Path*, *Iron Helix* & *Microcosm* are gloomy and atmospheric – but are they any good? Our in-depth reviews sort out the men from the boys.

PLUS! ***Over 35 new games reviewed, including*** **Alone In The Dark 2, Campaign II, Daryl Gates' Police Quest, Legend Of Kyrandia 2, Unnatural Selection, Terminator Rampage, Pinball Fantasies, Dungeon Hack, Gabriel Knight, Wizard!, Star Trek CD *and, of all things,* 'Allo 'Allo!**

AND! ***Exclusive previews of*** **UFO, Star Reach *and* Battle Isle II! *Tips for* Frontier, Sam & Max *and – yes! – many more.***

STILL THE BEST COVERDISK! ***With an exclusive playable demo of MicroProse's*** **NFL Coaches Club Football!**

NOT TO MENTION... ***Oh, what's the use? We could go on all day. If you're not already convinced that the third issue of*** **PC Gamer** ***is groovy and great, you never will be. But admit it: you are, aren't you? Thought so. It "hits the streets" on Thursday 27 January. Write that date on your hand now. With tattoo ink.***

PC GAMER
Smarter than the average PC games magazine

EVOLUTION

Amazed that people have got through the survival process? Check out the problems our ancestors came across with the aid of your Falcon and see if you can do any better

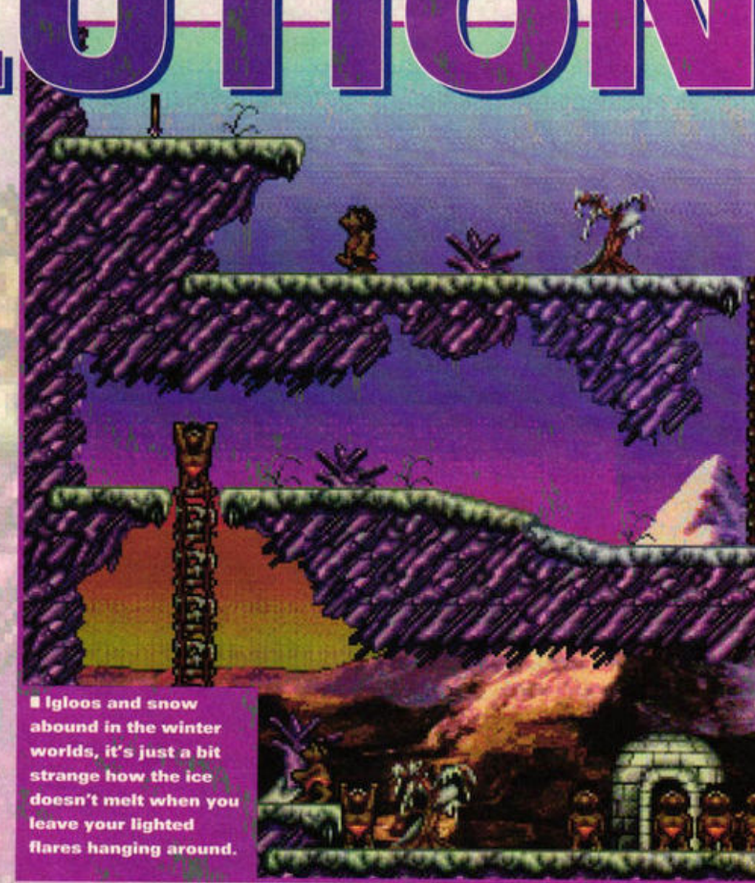
Just think what life was like before the wheel, when you could walk around nearly naked without being a social embarrassment and all you had to fear were huge dinosaurs that eat people for lunch and still have the inclination to crunch up the odd spear for afters – and who seem to be impermeable to fire. Such is the life that *Evolution Dino Dudes* for the Falcon attempts to recreate. Known as *Humans* on virtually every other format, this is a puzzle game that combines brilliant effects, intelligent gameplay, variety and humour to create absorbing and thought provoking entertainment. Wow! What a claim.

Smelly days

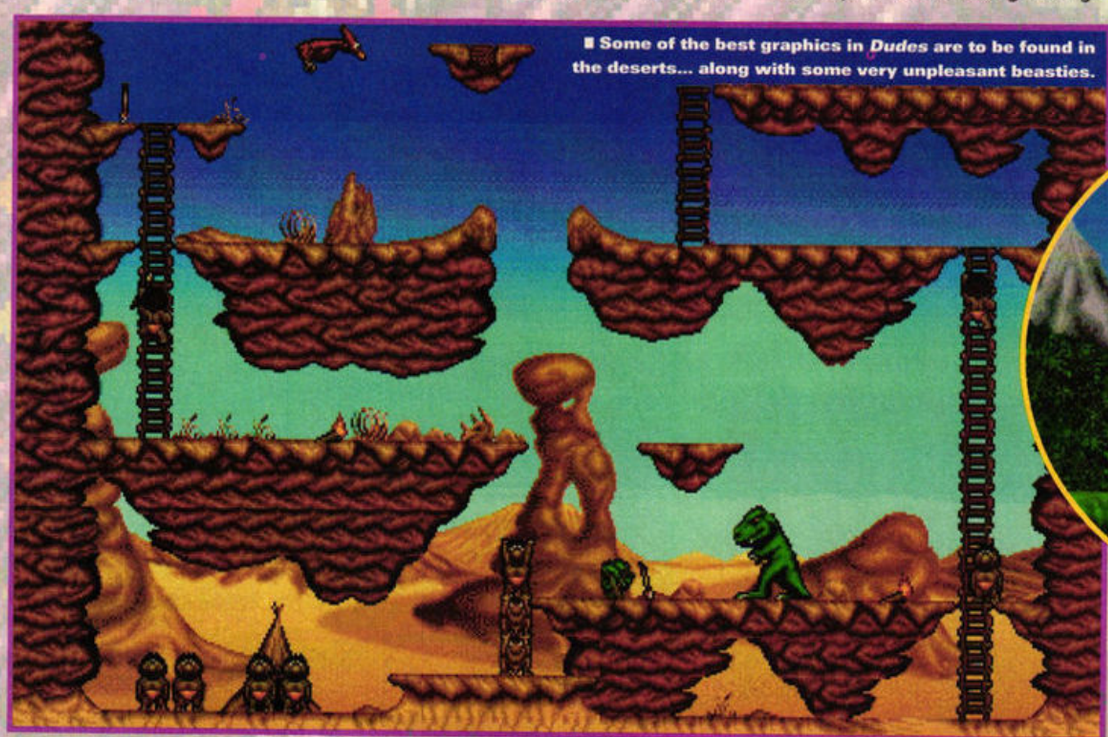
First off, right, you're in charge of a team of Stone Age men complete with their lack of hygiene, abundance of hair and swarthy skin and who are also blessed with incredible strength. You have to keep a certain number of these dudes alive preferably by not exposing them to peckish beasties for too long or making them attempt feats they couldn't possibly survive. At the same time you have to develop their skills so that you can go on to the higher levels in which you use more and more of them.

"A puzzle game that combines brilliant effects, intelligent gameplay, variety and humour"

So, say you're at the beginning of the game (always a good place to start) and your first task is to find a spear. You work out that team spirit and amazing strength means your chappies can climb onto each other's shoulders and rescue the spear. Next level you develop more teamwork and how you can leap between previously impassable crevices using the spear, and then you can throw it to help your mates... and so on. Some of the moves can be quite fiddly to master, especially if you're not used



■ Igloos and snow abound in the winter worlds, it's just a bit strange how the ice doesn't melt when you leave your lighted flares hanging around.

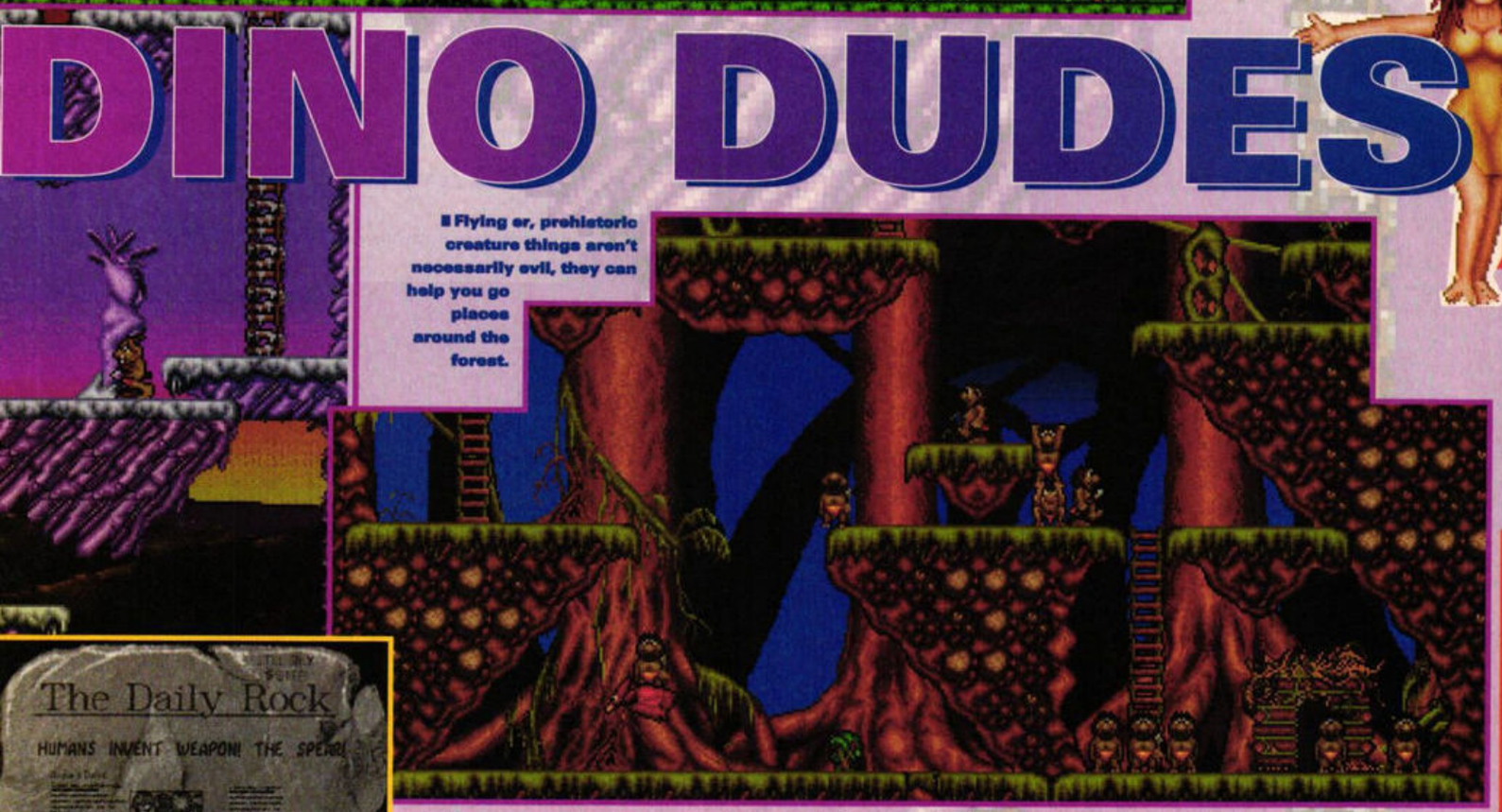


■ Some of the best graphics in *Dudes* are to be found in the deserts... along with some very unpleasant beasties.

■ The animations are excellent and vaguely humorous, assuming you find it amusing that this chappie stands on his spear and knocks his teeth out.

You can set up *Dudes* to play the way you want it from here - whether you choose to have the music and animations on, if you want to play with an easy, normal or difficulty level. Move left and you can enter a code to skip between levels.

DINO DUDES



Flying or, prehistoric creature things aren't necessarily evil, they can help you go places around the forest.

As you progress, your achievements are recorded in the *Daily Rock*. Funny to think they learned to write before they discovered the wheel.

to playing with the joypad, but after you've used them a few times they almost become second nature.

Get 'em organised

Some of the puzzles are pretty tricky and until you're absolutely certain of what you're doing and what part each chappie's going to play there's little chance of you managing to complete your task within the assigned time limit. This is especially true if you have it on the harder options where the time limit is less and there barely seems enough time to make the moves let alone think! If you do well you're rewarded by extra points.

There are also lots of red herrings posing as useful objects on some of the levels so you tend to find yourself doing completely the wrong thing very often, by which time you've lost all chance of getting through. The Pause option comes in useful here, so you can stop and think about what you're supposed to be doing. Once you've got through to another level you're given a code so you can access that right at the beginning and you

One of the best bits of the game is when the beasty lets out a huge roar and gobbles up your dude - just watch his legs thrashing around. Great for sadists.

Embedded in stone

Learning how to use all the various controls and getting used to the joypad's keys is one of the first challenges you have to face

1 TIME - how much time you have left to complete the challenge.

2 SKILLS - What skills and abilities you have depends what resources you're using. Here because you've got a spear you can either throw it, use it as a lever to jump with, walk with it ot drop it.

3 LIVES LEFT - you start off with a total number of lives for all your dudes, you can either choose to kill off one or spread the deaths around the whole team. Remember you need a certain number left alive at the end of the level.

don't have to play through all the previous levels.

Variety is the spice...

There are six different sets of scenery you get to play against which adds quite a lot of choice – summer, winter – caves, swamp, forest and desert and your tasks can range from meeting your friends to learning how to use the wheel, so although you're doing the same moves and ultimitely continuing to strive for the goal of evolving, it doesn't get too tedious because it's so addictive. At the same time it can be pretty hard and therefore frustrating so you might get sick and tired of doing the same thing time and again.

The effects in the game are quite brilliant – it looks gorgeous throughout, and the attention to detail is incredible – look at the tendrils of twine hanging down in the swamp level for starters. The animations are a really good touch as well – there's the brilliant beasty, and the squeals and looks of pain and anguish on the dude's face if a less-sensitive team member runs over their toes using his wheel and the shouts of the lost friend are quite heart-rending. The tune that plays in the background does get rather repetitive but the little extra personalities make up for it.

■ Bright sunshine and blue skies... oh, I remember what it was like in the summer when I was young.

■ You start off learning the basic skills in the dark and damp caves...

■ Take care not to sink in the swamp in this very detailed level.

Heard all this before?

You're probably thinking by now that this all sounds a bit familiar... rather *Lemmings*-like, in fact. Well, the plot is the same sort of idea except that in this you learn as you go along so you have to go through all the levels – all 80 of them – to progress through the game. In *Lemmings 2* you could dot about so if you got fed up trying to solve one level you could move between 11 others while your subconscious did its bit to sort out the problems, which is good.

A big criticism of *Lemmings* is that you can't get hold of a single lemming very easily and make it do a particular task – that's not a problem at all with *Dudes* since the people are very substantial. Comparisons in this case are actually fairly irrelevant anyway, since *Lemmings* is an ST game, and *Dudes* is very definitely a Falcon game – the graphic and sonic effects couldn't be achieved with an ST. On top of this, *Dudes* runs from a hard drive making it run very smoothly – an absolute joy to be with! Ooer.

Verdict

Evolution Dino Dudes is an excellent game with fun for all the family especially if you use your Falcon for more serious pursuits the rest of the time. And, of course, it's the only puzzle game for the Falcon (unless you count the abysmal *Breakout* which came with your machine) with the only criticism being that it can be a bit tedious trying to solve one single puzzle and not being able to do anything until you've done it.

The fact that Atari have finally decided to show some positive support for the machine as well surely has to be a good sign – inner confidence seems to be radiating from them these days. Yes, get *Dudes*, it's lovable, it's fun, it's intelligent. And it's a looker. But if anyone can tell me where the women are, I'd be much happier. As long as the answer isn't that they're doing the cooking inside the tent.

PAULA RICHARDS

Some basic moves

You need a joypad to be able to play *Evolution Dino Dudes* – you can get one from Daniel's of Windsor (☎ 0753 862106) for £30. The button on the left is the direction button, whether you want to go up ladders or shoulders, right, left or down. Pause pauses, Option enables you to restart the level, the game or quit, A is Fire, B enables you to pick something up and C toggles between the skills you have. Holding both B and A enables you to actually jump or throw with a varying level of power which is shown by a yellow bar that appears. Hitting the numbers moves you to the dude of that number – which you probably don't remember unless you have a very good memory.

Evolution Dino Dudes

Write to Atari UK at Atari House, Railway Terrace, Slough, Berks SL2 5BZ
Falcon only; needs a hard drive and a joypad

Highs
- Loads of levels.
- Very attractive.
- Humorous.

Lows
- Gets repetitive quickly.
- Pretty tough.

ST FORMAT RATING 83%

SEIKOSHA PRINTERS

Silica are pleased to recommend the high quality range of Seikosha printers, built by a company that is used to manufacturing quality precision products. Seikosha are part of the massive Seiko/Epson group with a turnover of £6 billion and 18,000 staff! Every dot matrix printer from Silica comes with a free printer starter kit which includes all you need to get up and running with your new Seikosha printer (see below).

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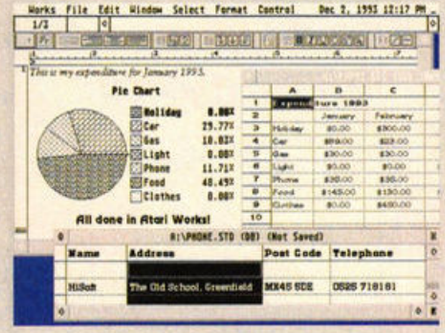
New Software for a New Year

Business Applications



Atari Works

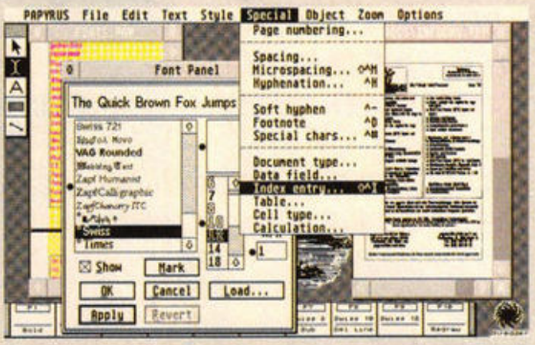
The comprehensive, up-to-date, integrated business package for any Atari 680x0 computer with 2Mb of memory and a hard disk. Atari Works contains a word processor, a spreadsheet and a database in one program, so that swapping between the applications is a piece of cake!

The word processor contains all the normal editing functions plus the drawing of lines & boxes, graphic import, spell checker and thesaurus, mail merge etc.

The spreadsheet is as powerful as many people will ever need - organise your data clearly and simply as text, percentage, fixed or floating-point or currency and then, using the 53 built-in functions, create interdependancies between your information. Then display the results graphically with pie charts, line graphs etc. and cut/paste these into the word processor!

The database is a joy to use; create as many fields as you need and position them on your form using the mouse. Once the data has been entered you can sort it, match records, find specific entries and produce reports, all quickly and simply. It is easy to import data from other databases and export data for use with the mail merge facility of the word processor.

All modules support the new SpeedoGDOS and are fully integrated - Atari Works is probably the most powerful integrated package yet seen on the Atari computers.

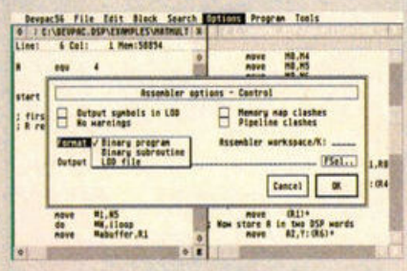


Papyrus

If you need a high-end word processor with many desktop publishing features then Papyrus is the new package for you.

The application is ideal for producing all types of professional-looking output, from one-page flyers to complete manuals. With extensive SpeedoGDOS support, paragraph styles, headers, footers, footnotes, reliable undo, automatic table of contents, flexible zoom, index creation, full margin control, freely adjustable paper format, letter micro-spacing, GEM vector import, text flow around objects, master pages, RTF support and more, Papyrus is the premier choice for all serious writers and designers.

Programming



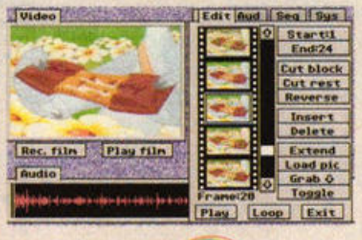
DevpacDSP

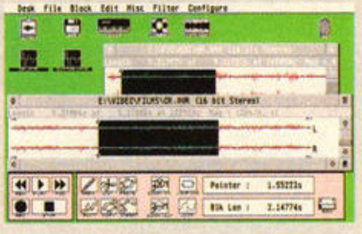
Another new programming package joins the HiSoft family of languages for the Atari 680x0 computers. DevpacDSP is a complete development system for the Motorola 56001 digital signal processor used in the Falcon030.

Remember that we've also updated our other programming languages for the Falcon. Devpac 3.10, Lattice C 5.60 and HiSoft BASIC 2.10 all contain extra libraries/include files for the Falcon, an extended debugger that works in all Falcon resolutions and much more. The *Modern Atari System Software* book (free with Lattice C 5.60) gives full Falcon developer documentation.

DevpacDSP consists of a fast 56001 assembler, fully integrated with our friendly GEM editor, which supports macros, conditional assembly, include files and direct production of .LOD files or Falcon binary plus an easy-to-use GEM-based debugger for disassembling and stepping through your code, modifying registers, setting breakpoints etc.

Video/Music





VIDEOMASTER

The best-value real-time video digitiser you can buy. VideoMaster is available for the ST/STe and, in a special enhanced true colour version, for the Falcon. VideoMaster RGB includes our new colour splitter, ColourMaster and produces amazing quality colour stills.

clarity

Clarity is our latest sound sampling system for the Falcon. Featuring an extensive sample editor, a complete drum sequencer and a powerful MIDI controller, Clarity is an ideal companion for all musicians. Includes extra hardware for CD (44.1KHz) and DAT (48KHz).

Utilities

HARLEKIN 3

This popular collection of utilities for all Atari computers gets another facelift. Harlekin 3 contains a multitude of enhancements including a multi-file editor, a new communications module with a scripting language, support for high density disks, a new Alarms module, for use with the Manager, separate keyboard and font editors and much more. The whole package has a new look, with all modules in a window or a flying dialog so that they can be moved and the memory configuration is now even simpler. Upgrades from Harlekin 2 cost only £19.95.

All products on this page are either available now or by the end of January '94 - please call to confirm availability.

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GAMEBUSTERS

Strap yourselves in carefully, folks, as we tip the best space game ever, and help you find light refreshments...

■ You find lots of strange things, like this tree man, in *Gobliins*. We haven't seen most of them, but hey! Anthony Sheldrake has, and this is his solution.

GOBLIINS 2

DIGITAL INTEGRATION

MONDE 6

Village - Winkle gets the match. Winkle uses the match on the eye. Buffoon uses the eye. Get the glass splinter. Winkle uses the knife point. Fingus uses the knife handle. Repeat. Get the bookmark. Fingus uses the bookmark on the candle. Fingus uses the glass splinter on Ray. Get the wax. Fingus uses the wax on the seal. Fingus uses the imprint on the key-hole. Get the seed. Fingus uses the seed on the village. Fingus, Winkle and Buffoon use the plant.

Plant - Winkle uses the hole. Get the bean. Fingus uses the stone. Winkle uses the bean on the mole. Fingus gets the cap. Winkle uses the match on the apples. Fingus uses the cap on the apple. Fingus, Winkle and Buffoon use the mushroom.

Dream - Fingus uses the skittles. Winkle uses the star. Winkle uses the bowl on the cover. Fingus uses the flag. Get another bowl. Fingus uses the bowl on the cover, then stands on the seesaw. Winkle uses the flag. Winkle uses the flag again. Fingus uses the feeler. Fingus uses the bubble. When the bubble lands on the cover Winkle uses the flag. Fingus gets the safety pin. Get another bowl. Fingus uses the bowl on the cover and then stands on the seesaw. Winkle uses the flag to the left of the Buffoon. Winkle uses the switch. Fingus uses the feeler. Winkle uses the safety pin on the bubble with the Buffoon inside.

Plant - Buffoon stands on the catapult. Winkle uses the switch. When the bird flies across Fingus uses the catapult. Go to the mountain.

Mountain - Fingus uses the stone. Winkle gets the stone on the next level. Repeat one more level. Winkle stands on the lion. Fingus uses the stone. Winkle uses the head. Winkle uses the stone. Fingus uses the stone on the next level. Winkle uses the lion. Fingus uses the stone. Winkle uses the hole. Fingus uses the lion. Winkle uses the head. Fingus uses "!!!" Winkle uses the rock. Then uses the rock again. Fingus uses the file on the cage. Fingus gets the key. Go to the plant.

■ An underwater scene, earlier today. Blimey, that mermaids got funny ears. Er, some other supposedly "funny" things.

Plant - Fingus uses the key on the door. Go through the door.

MONDE 7

Tazar - Fingus uses the magic water on the Buffoon. Fingus gets the pencil. Fingus uses the pencil on the portrait. When the Tazar throws the boomerang, Winkle uses the armchair. Winkle uses the mug on the Tazar. Fingus uses the boomerang on the toothpick. Get the toothpick. Winkle uses the toothpick on the skeleton. Winkle uses the boomerang on the Tazar. Get the sponge. Fingus uses the sponge on the pool. Winkle uses the pipe. Fingus uses the wet sponge on the smoke. Now go through the door in the chair.

Underworld - Winkle uses the wet sponge on the rock. Fingus stands on the eye. Winkle uses "!!!" Fingus gets the mouse. Fingus uses the mouse on the mud. Winkle uses the crocodile. Winkle uses the boomerang on the teeth while Amoniak's hand is out. Winkle uses "!!!" Buffoon stands on the eye. Winkle uses "!!!." Fingus uses the pencil on the rock. Winkle uses the handle. That's it! You've done it.

■ Presumably the slouch lives in one of these little huts. But which one? Find out by, er, looking in them.

CAPTAIN BLUNDER

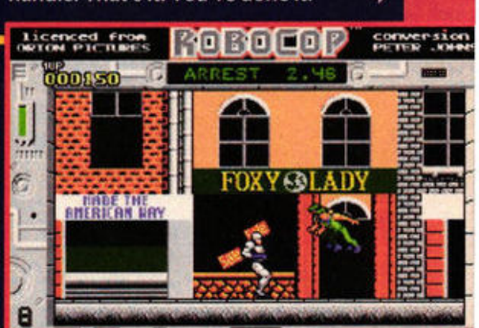
Problems with his pants falling down is Captain Blunder's main difficulty, but you can help stop his obsession with fiddling around with them by sending him game problems

Batman returns

I'm looking for cheats for *Batman, Robocop 1* and *SWIV*. In the first two I can only just get past the first stage, and I can only complete 23% of *SWIV*. Can you help?

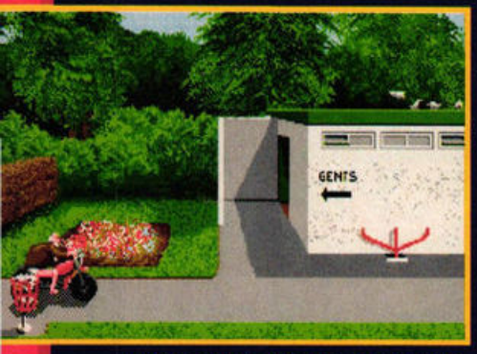
S Haughton, London

CB: *Yes, I can. Batman: On the title screen, type MA, then keep pressing J until a mes-*



■ Peter Johnson's responsible for some of the best games around on most home computers. *Robocop*, however, isn't one of them.

GRANDAD 2: The Search for Sandwiches



This is where the old codger starts out, just outside the gents' lavvy. Fortunately the local council have provided easy access for the elderly and disabled.

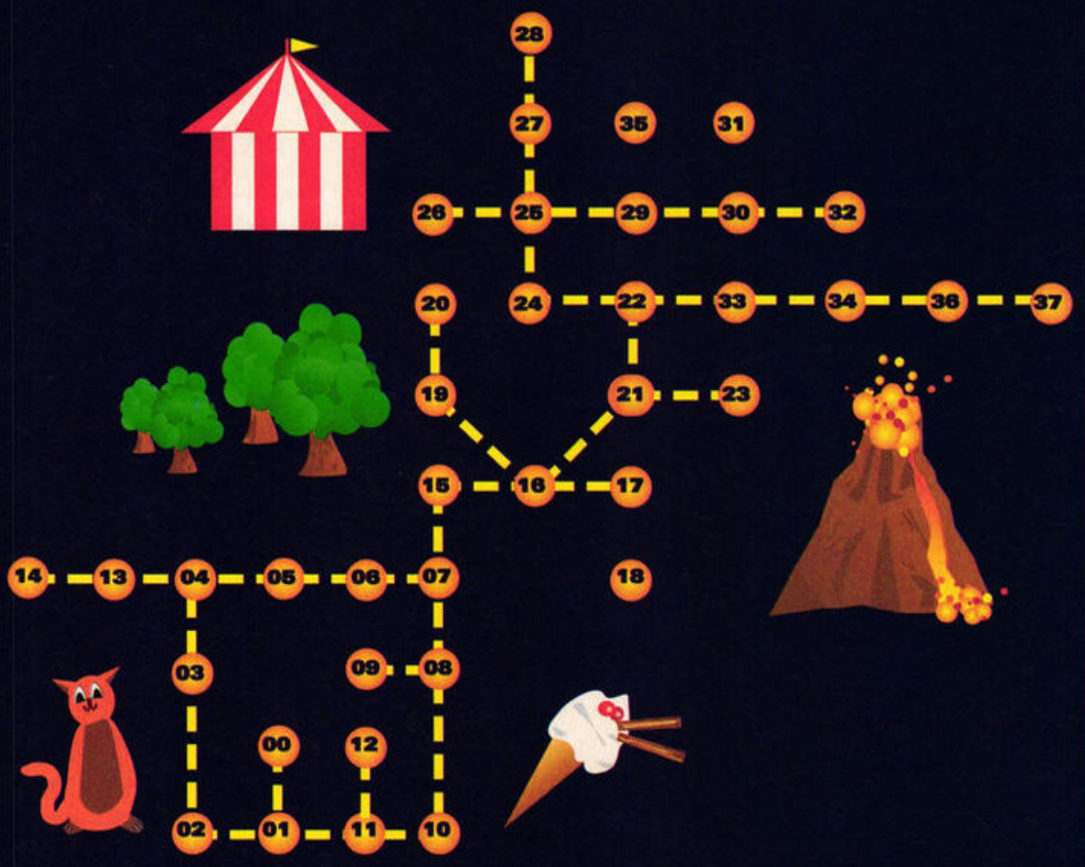
Look under the bush on the first screen, and get the coin. Get the perfume from the ladies' toilets, and give it to the tramp. On the way to the cop, pick up the secateurs (bottom right-hand corner of the Funland entrance), and the stick by the fisherman (right of centre at the front). Give the mag to the cop, get the handcuffs from the bike, then go left. Get the camera from the tourist.

On the next screen use the stick with the gum, then get the trowel from the bush on the right-hand side. Go to the ladies' toilet and hide from the tourist. Use the cuffs on the concrete mixer then search for the coat. Go to the ice-cream man and ask for cheap ice-cream. Then go to the tramp screen, and enter in between the top bushes on the left. Waggle the joystick until Grandad has half his head out of the screen, use the secateurs and take a photo of the girl wearing a mini skirt. Go to the left, and get the log.

The secateurs are around here, which are useful for doing a spot of pruning... especially if there happen to be some nubile girls around.

Go to where the cop was, and on the left of the pond look until you see the ten pence piece. Use the stick and gum to get it. Go to the booth in the park entrance, and give the camera to the man. Give the photos to the ice-cream man, then take the ice-cream to Quentin. Go to the screen with the flasher, and look in the left-hand bushes towards the back. When you find the condom, poke it with the stick, then go to the park entrance. Use the stick near the

GRANDAD'S WORLD



KEY

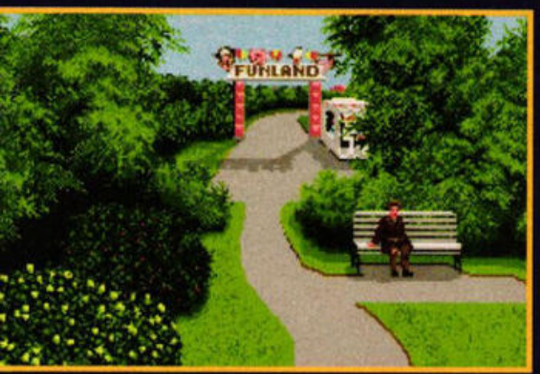
00 Inside men's toilets
01 Outside men's toilets
02 Flasher and cat
03 Park entrance and kiosk
04 Outside pagoda and tourist
05 Policeman and statue
06 Fisherman
07 Funland entrance
08 Tramp and woods entrance
09 Woods
10 Ice-cream van
11 Outside women's toilets and caretaker
12 Inside women's toilets
13 Inside pagoda
14 Secret office inside pagoda
15 Guard and closed shops
16 Junction and rat woman entrance
17 Inside rat woman's entrance
18 Cloakroom
19 Circus tent
20 Behind circus tent
21 Outside gift shop
22 View of complex and ark
23 Inside gift shop
24 Forest
25 Caribbean zone
26 Lots of pirates outside a pub inside a boat zone
27 Desert
28 Inside tank
29 Aztec zone
30 Future zone
31 Inside rocket
32 Underwater zone
33 Volcanic zone
34 Prehistoric zone
35 Control room
36 Maintenance zone
37 Inside ark

sage appears. Infinite lives are yours, while pressing <F10> advances you on one level. Robocop: Pause, then type BEST-KEPT-SECRET and unpause to get infinite energy. SWIV: Pause, then type NCC 1701 and then <Return> for infinite lives.

This film set is the scene for *Last Ninja 2*. Does anyone know of a cheat?

Multi-choice

Can you answer a few questions for me please?
1. What is the best budget (£10 – £50) art package?
2. Is there a cheat available for *Last Ninja 2*?



■ Enter the top hedge, waggling your joystick until you're in this position. Cut a hole with the secateurs to get your bike through the hedge.

man, then take the mug. Go to where you found the condom, come forward, find the cat and poke it with the trowel. Give the mug to the fisherman, get the beer, then give the beer to the tramp. Go to the pagoda, use the key, go inside and use the orb on the bannister. Walk through the door, then go to the right-hand side at the back of the desk and use the small key. Get the pass, then enter Funland.

Walk to the forest (left of screen by Ark), and get the blowpipe from the plastic people. Go up and take the key from the skeleton, go left and look at the plate, then go to the Aztec zone. On the right-hand side at the bottom, keep digging with the trowel until you find a medallion. Go to the Future zone, enter the spaceship, locate the gun in the box, then cut the wire with the secateurs. Dip the dart in the liquid, go to the volcano and then get the pumice from the left. Go right and use the pumice on the door.

Go to the gift shop, give the gun to the man, then go to the circus. Give the hat to the man, then go behind the circus and dip the log in the oil. Use the pipe with the lion, go back to the guard, and give him the medallion. Go behind the circus and use the silver key on the cage. Look, get the remote from under the straw, then move to the underwater zone – right of Future zone. Use the remote, get the spanner, then go to the tank – through the big skull in Caribbean zone. Use the spanner on the tank, use the skeleton key on the cabinet.

Walk to the screen where you can see the Ark, then go behind the bush on the left. Use the hammer on the glass box, use the log on the barbecue, then put the steak on the barbecue. Give the spider to the girl outside the gift shop, go to the bearded rat woman and give her the steak. Use the cloakroom key on the door, then get the pass from the jacket on the right pocket, use the key on the cabinet and note down the code.

Go to the Aztec zone and use the smart card in the slot. Look at the computer that is on, enter 4993, then enter 2971 and go back to the maintenance tunnel and go through. Follow the clues – the answers are: the second clue is on caravan step behind circus; the third clue is on Frankenstein picture in staff room in the haunted house; the fourth is on the telephone outside the pagoda towers; the fifth is on the fan in the pagoda; sixth is on the bollards by the fisherman (talk); the seventh is on the forest people; eighth is on the chest by the skeleton and the huge skull; ninth is on the right-hand side by the fence outside the Aztec zone. The last is by the clam. Get the key, go to the tunnel, use the key, look, then get the sandwiches. And that's it. you've won! Hurrah!

■ Get the metal orb from the tramp, then go into the pagoda and repair the staircase. This reveals a secret door (pretty cunning, eh?).

■ The plastic people are concealing a blowpipe somewhere, apparently. How much fun can Grandad have finding it, we ask?

■ Hang around this area of the park for too long, and you may meet with a surprise... in a kilt, it seems. Perfect dress for a day in the park.

■ This poor unfortunate chap died before he could reach the tank. Can you do better, and take the dead man's bones to crack the cabinet?

3. Do you know if there's a cheat for *Lords of Chaos?*

DJ Drummond, Wolverhampton

CB: *1. Deluxe Paint, probably. Although you can get Hyperpaint 2 for just the price of ST FORMAT issue 54 – turn to page 58 and order your copy if you missed it.*

2. Sadly, we don't know of one. Does anyone else?

3. See 2.

Er, sweet cheeks?

Can you help with a problem? How do I get rid of Sweet Cheeks Marie in the hotel of *Police Quest?* I know she's only trying to help, but after introducing me to the barman I can't get into the casino.

Christopher Shread, Cotgrave

CB: *At some point during the game you may have noted Lt Morgan's number on his desk. After the bartender tells you to ditch the broad, go up to your room and call Lt Morgan at his office. He tells you to call a cab for her. Use the phone and dial 411. When the operator asks for last name, type CAB. This puts you in touch with the cab company, and eventually Sweet Cheeks leaves.*

We could tell you Lt Morgan's telephone number, but it won't work unless you've looked at the phone on his desk.

"L" fire...

I was very pleased with the cheat for skipping levels in *Prince of Persia.* Whatever I try, though, nothing happens. Please can you be more precise about when I must hit the keys.

HV Kessel, Driebruggen

page

FRONTIER - ELITE 2

■ If you want a serious enemy-bashing ship like this, you really have to work at it - and where better to start than with our brilliant tips?

David Braben's excellent game is undoubtedly difficult to get started with, but ST FORMAT readers Christian Payne from Plymouth and Iain Reeve from Winchmore Hill have conquered it and sent in their tips if you're stuck. Here are the best of them...

● Start in the Ross 154 system, because you get the best ship on balance, and you get an autopilot which is essential at first. Do as it suggests in the manual: buy Animal Meat and fly to Barnard's Star, buy Heavy Plastics there, then fly back to Ross 154 and sell them. Continue this for a while, until you get a fair profit.

● To get a bigger profit, you could try taking Robots from Barnard's Star to Sol, then Luxury Items from Sol to Barnard's Star. You won't be able to afford to do those journeys until you have over 10,000 credits, though.

● To get a larger cargo space, sell your missiles because they rarely hit anything! If you can, choose planets that have orbiting space stations, then you can sell your atmospheric shielding as well.

■ Above - Typical houses which you can't afford.
■ Left - You, if you don't use our tips.

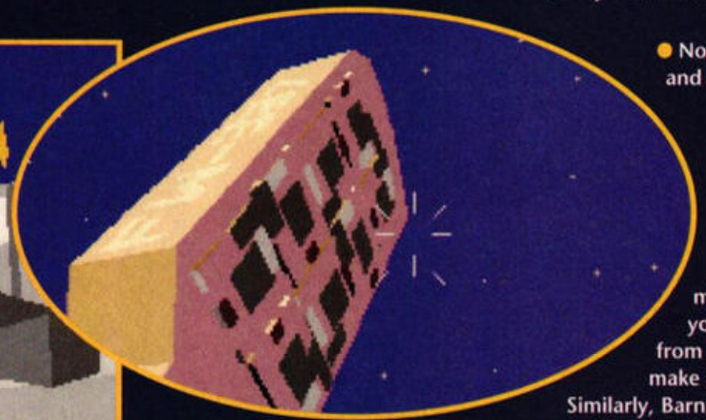
● When you are in combat, click on your opponent's ship so that he is the selected target. Switch the Autopilot on, and your ship chases him so that all you have to do is shoot. Be careful because some attackers like to crash into you, so switch off the Autopilot in time to avoid them.

● Don't save your position immediately after hyperspace, because there may be a whole load of baddies waiting for you there, and you may run out of fuel. You then have no way back.

● Be careful when you're in a space station. Clicking on the right mouse button sometimes fires your lasers, and you need to sell your ship to pay the fine!

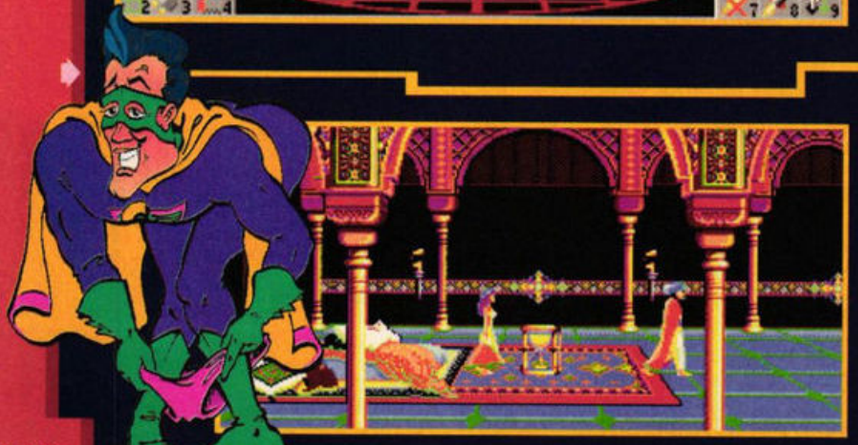
● When dealing with the police, paying the fine is usually the best course of action because a bribe usually incurs another fine.

■ Appollonius City, which you can look at but you can't touch, sadly. Not even cheating enables you to get out of your ship.



■ Above - Apparently, these space stations were modelled on packets of Weetabix, then texture mapped with square pieces of cereal... oh, look. This is so *dull*. Let's talk about something else.

● Note down the major and minor exports of a planet, and then their prices, because then you can work out the profit margins. For example: Sol has Robots as a minor import, but if you bring them over from Barnard's Star you make a 319 credit profit. Similarly, Barnard's Star has Luxury Goods as its lowest minor import, but if you bring them in from Sol you make 234 credits per ton. If you stick with just major export-to-major import, you don't always get the biggest profit.



■ Problem with last month's cheat in *Prince of Persia*? Use L not l...

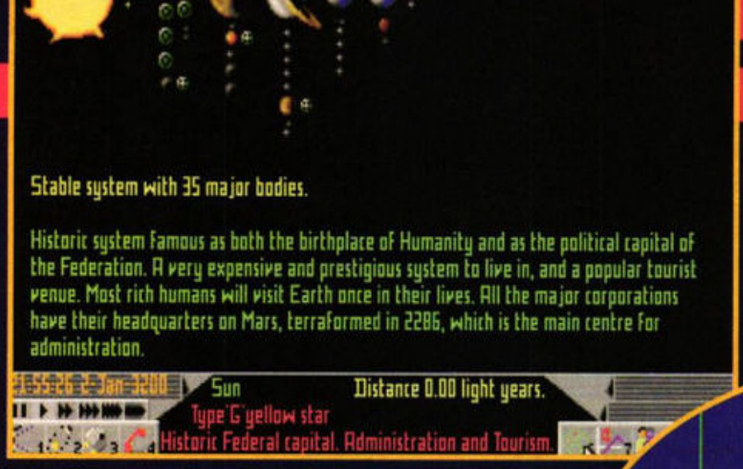
CB: *Ah, I think I see your problem. You have to hold down <Shift> and press <L> simultaneously, from anywhere within the game. We printed a small L in issue 54, which you may have mistaken for an I (capital i).*

Pretty fronty

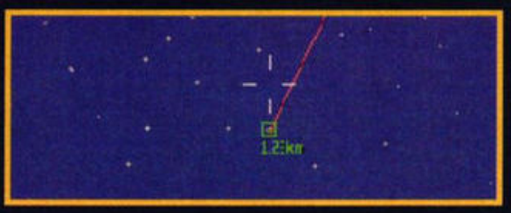
I've found one small problem with *Frontier* which I think you should be aware of. Despite what Gametek say in the documents, it refuses to install on my hard drive and run. That's even with all the Desk Accessories and auto-boot programs turned off. I have an STE with 4MBytes of RAM and a Power 900e hard drive.

Roy Dent, Harrow

CB: *This seems very strange. It certainly installs and runs from the hard*



■ Cor blimey, guv. The weather's been a bit parky lately, hasn't it? Looking out of the window, we can see that it's...



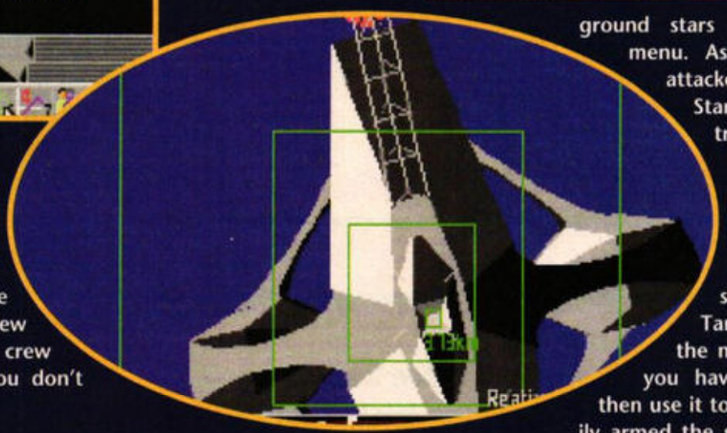
■ ...raining. Yes, that's definitely rain you see out there. Unless you're reading this with a VR helmet on. And if not, how do you know? Aha...

● Be civil to the people on the bulletin board – they might pay you more. Be careful of the military, because they demote you if you arrive late and then won't pay you.

● When hiring a crew, make sure that they are who they claim. Those who say they need a job for "Disabled spouse and starving family," and then say they want to get out of their star systems are not always reliable sources.

● When you have crew, make sure you have plenty of money. Don't fill up your cargo hold, and only leave yourself with a few credits, because crew get nasty when you don't pay them.

● When you get a bigger ship, remember to sell all your old equipment before you get the new one. Sol has the lowest equipment prices in the immediate area. When you buy a ship such as a Constrictor, you may find that you can't dock into space stations any more. The ship is too big to fit into the docking bay, and you need to stick to planet dockings.

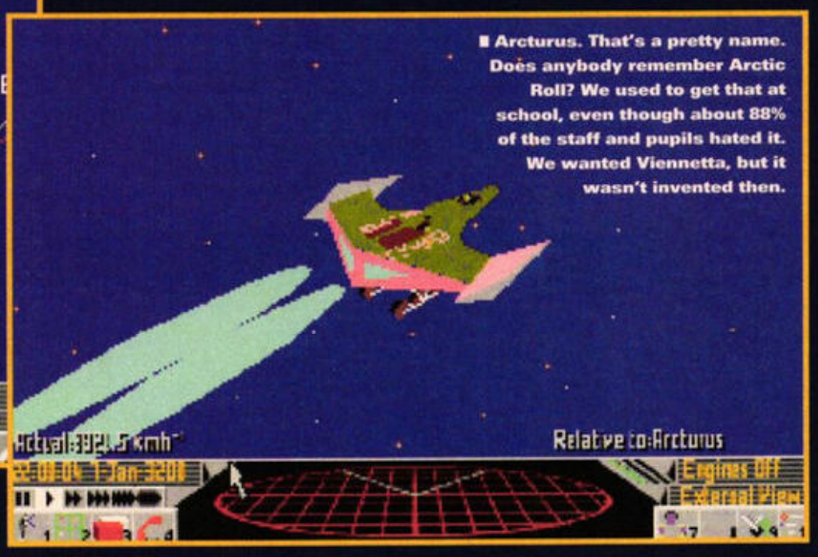


■ Oh, er, what a pretty space station. Right, what can we talk about now? That's a miserable looking face over there, isn't it?

● Combat made easy: by cheating. Switch off space dust and background stars from the options menu. As soon as you are attacked, pause using the Stardreamer time control. While the game is paused, go to external view and use the cursors to move the view until the enemy ship is on-screen. Target the ship with the mouse cursor, and if you have a radar mapper then use it to find out how heavily armed the ship is and whether there is any bounty. Turn on the Autopilot, so that your ship tracks the enemy. Now unpause the game, the autopilot brings the enemy into your sights – so you can really concentrate on firing your missiles or lasers.

● The standard laser is quite pathetic. Upgrade to a better one as soon as possible, taking a beam laser if you can. ***stf***

■ People shouldn't be sad. It's a proven fact that you live five more days every time you laugh. Unless you're at your gran's funeral or something, when you last about ten minutes.



■ Arcturus. That's a pretty name. Does anybody remember Arctic Roll? We used to get that at school, even though about 88% of the staff and pupils hated it. We wanted Viennetta, but it wasn't invented then.

drives in the STF office, with no problems at all. Gametek report no problems with hard drive installation, but they're looking into it anyway. If anything turns up, we'll print the solution in a future issue.

Cuthbert the invulnerable

I recently got hold of *Leatherneck* by Microdeal. I know there's a cheat for either infinite lives or invulnerability, but I don't know what it is. Is there anything you can tell me to help me with this dilemma?
Giles Ward, Colchester

CB: *While you're playing type in CUTHBERTNECK then hit <F3> for invulnerability. Simple, eh?*

If you have a gaming problem or even any tips, send them to Captain Blunder, *ST FORMAT*, 30 Monmouth Street, Bath, BA1 2BW.

■ *Leatherneck* was Microdeal's 1987 answer to the arcade smash *Commando*. And, in all honesty, it wasn't very good. But here's a cheat anyway...

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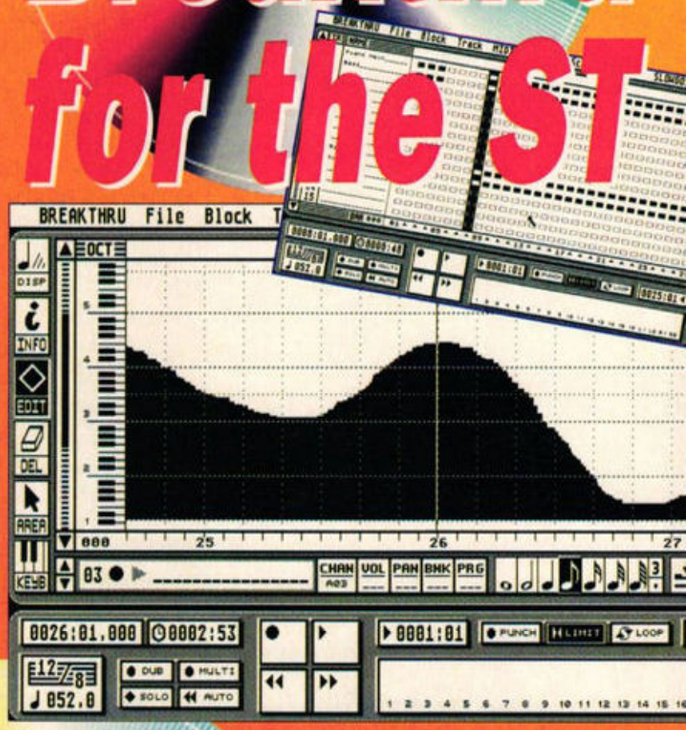
Breakthru for the ST



Has Soft Tech's upgrade to its popular *Breakthru* MIDI sequencer given your ST even more music power? Read the defin review in *Future Music* and find out!

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MAG*SAVE

FEEDBACK

Get more from life with your ST by writing to *ST FORMAT's* Editor at Feedback

Lazy programming

Since the ST is meant to set the standard of music in computers today, how come we rarely get sampled music and sound effects in games?

My friend has an Amiga on which we've played games that both he and I have – *Monkey Island, Chaos Engine* and *Sensible Soccer*. When loading up *Monkey Island* we are greeted by excellent sampled music on the title screen. Throughout the game there is sampled music. I cannot tell him how sad the chip music is on the ST version. *Chaos Engine* is next up. During gameplay there is a real funky tune and the samples are well up to standard. Us ST owners miss out once more.

The final straw is with *Sensible Soccer*. The crowd chants are fantastic and samples such as "come on you reds" are just a joy to listen to. The crowd sample on the ST is just pathetic. I know that fewer games are being made for the ST but that must surely not prevent us from enjoying top class sound in games. So, come on programmers, get your act together!

Thomas Jones, Colwyn Bay

stf: *I totally agree with you, Thomas, and the worst of it is that really it is down to the programmers' laziness that we don't get sampled sounds in ST games. The thing is, games are generally written for the lowest common denominator of machine – in this case, the STFM. Although STEs have sample playing hardware built in, so it's comparatively easy to include samples in games, the same is not true of STFMs which lack this hardware – it is possible to do it, but it's much more difficult. There are some games which are enhanced to take advantage of the STE's capabilities such as Zool and the Chaos Engine, although sometimes the difference between them is difficult to distinguish, but doing this means coders have to create two sets of instructions... and they just don't seem to bother.*

Life goes on

I believe that the ST's future is progressing but that it could still reach a higher level with the support of European companies achieving, maybe in some people's views, the impossible. Despite the fact that I have a Super Nintendo, a Gameboy and a Game Gear, the ST is the machine to which I refer time and again because it's so easy to use and I've got some really good software for it. During the past few months software companies have been led astray from the ST, but many have stayed. Software support has increased with the introduction of foreign suppliers and the help of software companies like the Bitmap Brothers who showed the real potential of the ST's graphics capabilities with the *Chaos Engine*, and games such as *Gods* and *Magic Pockets* showing the machine's excellent graphics and sound capabilities. However, I believe software companies are too lazy to use the ST's hardware to the full. I reckon that software companies should persevere with the machine, going into it in more depth to discover its full potential rather than automatically assuming it's a waste of time.

"The Jaguar is intended to be the main money spinner for Atari over the next few years"

Andrew Tang, Shropshire

stf: *Software companies face a dilemma – should they stick with the markets and the machines they know and get as far into them as they possibly can at the cost of not moving with the times and ignoring new and probably more profitable formats? Many have taken the latter course, looking, as businesses do, for the greatest returns on their investment. I do not believe that it has anything to do with software houses being too lazy to get into the hardware. New software developers such as Binary Asylum (featured last issue) believe there are still profits to be gained with the ST, especially as the bigger softies leave to concentrate on other projects – they, and software houses like them are in a prime position to make the most of the ST's hardware.*

Not very useful?

The quality of your second Cover Disks seems to be deteriorating, not in terms of quality but in terms of their usefulness to the average user. How many of your readers are musicians and proficient enough to use *KCS Omega?* If you know that over half your readers can really find some use for it then you are justified in putting it on another disk and increasing the price of the magazine. If you can't, well, you know what I'm getting at... what's up for next month? Another word processor?

J Sutton, Liverpool

stf: *What do you suggest the average user (and who exactly do you think admits to being the "average user" anyway?) would find useful more than our original standard disks supply? Our second disks come on special issues, giving everyone the chance to use top quality software that they would*

BRAIN DAMAGED? A PROGRAMMER RESPONDS

Dunces Cap Software and *Brain Damage* haven't gone down very well in the ST press... oh dear what a shame.

Reviews by their very nature are subjective, but if the reader is to base his judgment on what is being reviewed, then a full and accurate description should be given – reviewers should show a competent understanding of what they are reviewing. It is apparent that your reviewer didn't read the accompanying files given with the program. If he had a lot of the so-called bugs reported to exist would be found not to be bugs but a different way of presenting a game that uses this platform.

For example, *Brain Damage* only accepts one word answers so you don't need a space, this is fully explained in the text file. You can also correct any spelling mistakes by using <Backspace> as long as you haven't pressed <Return> or <Enter> or by entering the last letter of an 11 character answer. This too is explained in the text file.

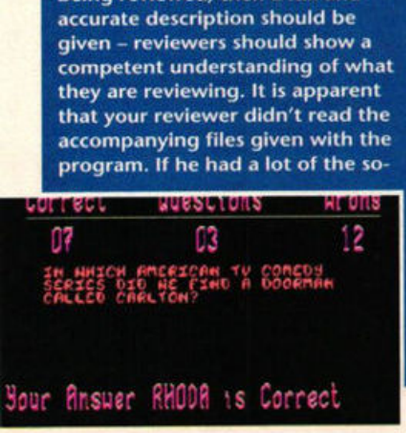
Your reviewer also failed to mention that the question and answer section has no time limit imposed on you so you can take as long as you like to answer a question – you can even go and look up the answer in a reference book – and that you can pass on up to five questions by pressing <Escape> with no penalty. It is also important to note that there are another eight sub-games to be played which are completely different from the question and answer section.

The closing comments of your reviewer were "Come on, Dave, give us a break..." Well, if your reviewer cannot even manage to read a text file and find out how a program actually works and what it fully has to offer, then how about his neck?

Dave Cobbledick, Northumberland

stf: *Andy, as the reviewer, replies. "While your comments are noted, we would like to point out a couple of things in return. Because of the nature of entering single-word answers, in our view it is essential to provide some form of correction to your answer. Not just <Backspace> which, as you quite rightly point out, deletes your typing, but a facility to adjust your answer if, say, your spelling isn't up to scratch. To us, it seems unfair to penalise a player if they can't spell, or if they make a typing error.*

"And, call us picky if you like, surely the point of a trivia quiz is to test your knowledge of trivia, not your ability to go and find the answer in a book. Maybe a time-limit would be a good thing. The last thing we want to do is to tell you how to program, but surely you can accept criticism of your work in the spirit in which it is intended."



Brain Damage – a good quiz, but let down by its presentation.

BRIEF AND TO THE POINT

DIY moving pictures
Please can you tell me where I can get hold of *Video Titler ST* or another video titler?
Christopher Mander, Surrey

***stf:** Laser Distribution are no more (unless anyone knows any different...) and we don't know of anyone else who supplies the program you want. We can, however, recommend Video Supreme (£14.95 from Goodmans International ☎ 0782 335650) which we gave 79% back in issue 52 – turn to page 58 if you missed it.*

Directly to disk
I'm confused by the whole aspect of D2D recording and how it actually works – can you shed any light on this ignorance of mine?
Ian Thrilling, North Humberside

stf: All you have to do is wait until next issue when, barring any unforeseen and unwanted circumstances, we're going to be looking into the whole arena of direct to disk recording. The April issue comes out on Tuesday 8 March, so make sure you reserve your copy using the form in the news pages.

I've got this PC...
Lately I bought *ST FORMAT* and realised that it is written for the Atari user group. I placed the disk in an IBM computer and could read many DOCs. Please advise if any emulator or convertor program exists so I can use your Cover Disk properly.
Yves Lanctöt, Canada

stf: Well, you could spend $230 on a Gemulator (Branch Always Software ☎ 0101 206 369 5513) which is a plug-in ST emulator for PCs which would enable you to use the Cover Disks, or you could get yourself an ST for around £200 from any of our advertisers. You might find it cheaper to buy a magazine that deals specifically for PCs, like our sister mag PC Format.

Not my idea of fast
What do you mean by *"Raystart is a very fast raytracer?"* After tracing a picture for about six and a half hours, the screen wasn't even half finished!
Gaf de Bruyn, The Netherlands

stf: You've got to get into comparative terminology here... after all six and a half hours isn't that long if you were, say, trying to write your first novel. Six and a half hours would actually be quite fast. Raytracing's a bit like that – long and complicated and needs lots of thinking about on your ST's behalf.

We stand by the statement that Raystart is very fast compared to other ST raytracing programs. It just doesn't seem that way when you're sitting there waiting for it to finish.

otherwise not be able to afford – a far better option than putting a couple of mediocre Public Domain programs on that you'd have been able to try for yourself for a small cost. What exactly do you suggest a useful program would be – what do you want? Word processors, databases, spreadsheets and accounts programs are unarguably very useful, but just a teeny weeny bit boring... we give you an exciting professional standard program with the option to get the manual at a knock down price and you complain. When you've decided what it is that you do want, please let us know.

Two book trilogy
I was a wee bit worried about Atari's statements in the last *ST FORMAT* about "putting the computer side of the business on hold" to concentrate on the Jaguar. It seems that Atari may just as well have said that they are pulling out of the home computer business altogether. I mean, if potential ST and Falcon developers read this it will probably put them off any new developments. It also implies that Atari, with their talk of a Jaguar computer in the next couple of years, are unable to maintain the standards they themselves introduce. It seems a bit like an author who continually trots out books intended to be trilogies but never concludes the series.

All this suggests that Atari are incapable of future planning and have an extremely cynical view of the marketplace. If Atari don't show some positive support at least for the Falcon within the next few months, I'll sell my Atari kit and buy a PC, something I should have done a long time ago.
Dug Armstrong,
c/o *ST FORMAT* BBS

***stf**. The Jaguar is intended to be the main money spinner for Atari over the next few years – without some solid capital behind them they're hardly in a position to be able to develop new technology, which is after all, what their core business is all about. I do not believe that Atari are incapable of future planning – after all they planned the introduction of the Jaguar more than three years ago and they're still way ahead of the competition. The Falcon, too, is a masterpiece of technology, the only (rather major) problem is that PCs dominate the computer marketplace – perhaps when Atari were developing it, they weren't cynical enough.*

Our fault... or yours?
I wish to bring to your attention the number of files from your last few Cover Disks that show CRC errors when decompressing. I refer to *Glossary, Hyperpaint 2, Raystart* TOS 2 and TOS 4, GDOS_MED.TOS to name but a few. Could you advise how these errors only seem to occur on the main disks when a second disk is supplied?
LD Salter, Bristol

***stf:** We tried to recreate your difficulties on our office machines, but the programs all decompressed perfectly... it looks as if you could have problems with your disk drive, so get you and your machine down to your local computer repair shop. It tends only to happen on the main disk because we don't usually compact programs that go on the second disk, so this problem wouldn't occur.*

If you have any problems, queries, or comments send them to **Paula Richards, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW**

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■ If you would like to correct or add to any of the entries, please write to Essential Contacts, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW.

ST ANSWERS

Your top ten questions of 1993 answered along with more hints, tips and solutions

Get powered up

HARDWARE

I use a four-way adaptor to run my ST, monitor, printer and hi-fi from the only power socket in my room. I want to buy an external disk drive, is there one available that is powered from the ST and not from the mains?

Ian Smith, Staffs

A Power Computing used to supply external floppy drives powered from the joystick port but these are no longer available. It's not a good idea to power a drive in this way because the keyboard circuitry isn't designed to cope with the higher power requirements and could cause problems with your ST.

This leaves you with a couple of options. Either tell your dad to call an electrician and get a double socket installed in your room or unplug your hi-fi while you are using your ST.

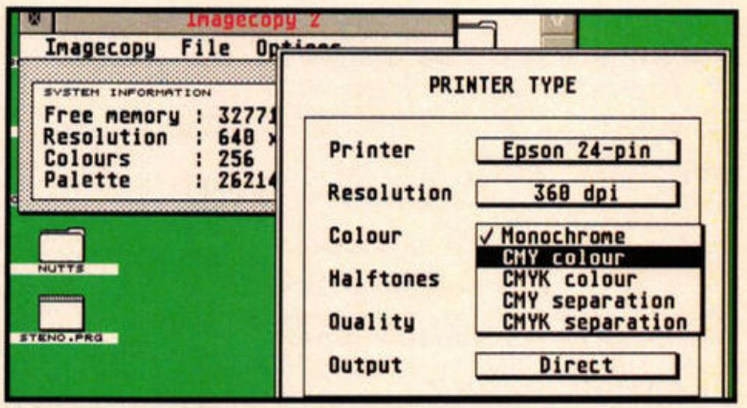
In living colour

PRINTERS

I am having the age-old problem of getting my Star LC24 200 printer and my ST to work together correctly. I can print text without problems but I have been unable to do any colour graphics screendumps from any of my graphics programs. I have tried using Epson drivers and setting the printer to Epson LQ 860 emulation by setting the dipswitches but it doesn't seem to work. I read your feature on *Imagecopy Colour 2* and it sounds very good but I'm a bit concerned about spending £20 on something else that won't work.

Jason Roberts, Cardiff

A You should be aware you can only generate a colour printout from an art program if it has a colour printer driver, most older ST programs don't have colour drivers. Using a normal Epson LQ driver just gives you mono output. The dipswitches do work on your printer if you set them properly. Take a look at your printer manual and set the switches to Epson mode then switch the printer off then on again, your printer is now in Epson mode. If any of your software has an Epson LQ 860 driver then it now works. Don't be concerned about using Imagecopy Colour 2 (ST Club ☎ 0602 410241) with your printer, all the printouts used in our colour printer feature in issue 51 were created using Imagecopy Colour 2. Isn't it worth investing £20 to finally get the most from your printer?



Surely this rather ordinary looking dialog box can't produce stunning colour pictures? Well, it can - as long as you have a colour printer as well.

ASSEMBLY POINTERS

Tony Wagstaff explains some of the finer points of machine code programming

Hip, hip, array

Is it possible to have arrays in assembly as you can in BASIC?

G Mill, Kent

stf: Assembly doesn't have any commands like the `DIM` *command, since unlike BASIC, where the compiler takes care of memory storage, storage has to be organised entirely by the programmer. Luckily, arrays are quite simple to arrange in assembly, once you know a few tricks of the trade.*

In order to store or access data, you need to state where it is, in a data or address register, or a memory address for instance. There are different ways of pointing to the data, known as addressing modes. An important tool we can use with arrays is an addressing mode with the grand title of address register indirect with displacement and index. It's not as complicated as it sounds, it simply means we add the contents of a data register to an address register, and then add a further figure to that to locate the address where our data is stored, all in one command.

It looks something like this:-

```
8(a4,d3.w)
```

which translates as, add the signed word value of `d3` *to the contents of* `a4`*, and then add* `8` *to that to obtain the address we want. To set up the array, declare a storage area the size of the array, and load its address into an address register.*

To access or store data from the array, load a data register with the element number, and multiply it by the size of each element, two for a word for example

```
lea array,a3
move.w #5,d3
asl.w #1,d3
move.w #8,0(a3,d3.w)

bss
array ds.w 8
```

places `8` *into the fifth element of the array.*

Lost mouse

I'm having problems with one of my programs in that the mouse pointer sometimes disappears. Do you know what's wrong?

N Manley, Southend

stf: It's difficult to say for certain what's happening without seeing the code, but there are some common problems which may be causing this. Check that each time you switch the mouse off with a `graf_mouse` *call, there is a matching call switching it on. In addition, make sure you call* `wind_update` *with* `intin` *set to* `BEG_UPDATE`*, or zero, before you switch the mouse off and commence screen redraws.*

Stack 'em high

Please can you tell me how and why `a7` needs adjusting after a trap instruction?

K Hart, Swindon

stf: The stack is an area of memory used to hold data. The stack pointer, or `a7`*, initially holds the address immediately above the stack. When you push data onto the stack,* `a7` *needs to be adjusted to hold the address just below your data, to stop it being overwritten. Generally this is done automatically with a command like*

```
move data,-(a7)
```

The minus sign instructs the processor to subtract the correct number from `a7`*. To set* `a7` *to its previous value, simply add up the data used, allowing two for 1MByte (the stack pointer always contains an even number), two for a word and four for a long, and add this to* `a7`*. As a matter of efficiency, use* `lea x(a7),a7` *when* `x` *is greater than eight, otherwise use* `addq`*. Since the stack is also used to store the return address after a* `jsr` *instruction, failure to keep it tidy may result in it attempting to return to the wrong address, almost inevitably causing a crash.*

Monitor wizard

HARDWARE

I run my ST through the SCART connector of my TV and I am very pleased with the results. I have just been given a Goldstar 1453+ VGA colour monitor, is there any way I can get it to work in medium resolution colour with my ST? I'm sure that there's a device available that enables a VGA PC to be used on a SCART TV.

R Peterson, Skelmersdale

A There is no device that enables an ST to be used in colour on a VGA monitor, although Ladbroke Computing (☎ 0772 203166) sell an adaptor for £20 that enables you to use the VGA monitor in high resolution mode. The only PC compatible monitors that enables you to use the ST's colour modes are multi-sync monitors, they start at around the £400 mark for a 14inch screen.

Accessory problems

FALCON

I am having problems accessing the Desk Accessories on my new Falcon030. I have an IDE hard drive installed and I have put the .ACC files in the Auto folder on drive C but they don't appear under the Desk menu. The MultiTOS quick start manual

THE ST ANSWERS ANNUAL TOP TEN

We often get the same questions asked over and over every single month, here are some typical examples of the most popular questions you've sent us over the last 12 months

1 I recently bought an Apricot XEN computer with a colour monitor and a 20MByte hard drive. Can I connect the hard drive to my 520STE?
A Mylnek, Lancs

stf: Generally the answer is no unless the hard drive is a SCSI device, but you need a power supply, case and host adaptor to connect it to your ST. Most older PCs do not use SCSI drives so it's unlikely that you can use the hard drive.

2 I want to connect my ST to my SCART TV and video recorder. Can you tell me where can I get the correct leads from?
Allen J Hynek, Wilts

stf: You need to contact Meedmore (☎ 051 521 2202), they can supply any lead you want as long as you provide the make model number of the TV, monitor or video you want to connect your ST to. You should also specify which type of ST you have.

3 I've been told that I could play PC games on my STE if I bought a PC emulator. Is this possible and, if so, which is the best one to buy?
Timothy Good, London

stf: No, you cannot use a PC emulator to play PC games. PC emulators are designed to enable PC business software to be used on an ST, usually using a maximum of 16 colours in CGA mode and running slower than a 286 PC.

4 I have bought a second-hand printer at an auction. It's a Digital 4205 serial printer from a mainframe. How do I connect it to my ST?
Ernest P Worral, Derby

stf: You can't! Serial printers are old and outdated and you won't be able to find a printer driver in any software to run it correctly. You should only buy Epson compatible parallel printers – also called Centronics – to use with your ST.

5 I know the ST can read PC disks, so does this mean that I can run PC software on my 4MByte STE?
Jim Doohan, Canada

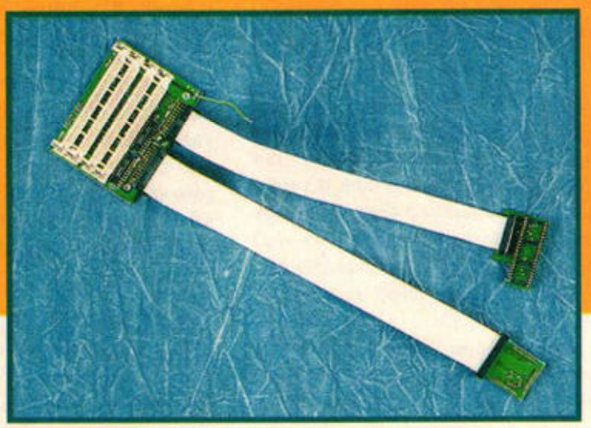
stf: No it doesn't. All it means is that you can read the information on 720K disks formatted on a PC, this means that you can transfer ASCII text files, graphics and spreadsheet data but you cannot run PC software on your STE.

6 Can you tell me if it's possible to use Jaguar games cartridges in the cartridge port of my STE, when they are released?
Avery Brooks, USA

stf: You cannot use Jaguar hardware with any version of the ST or Falcon because it's designed around a completely different hardware architecture. Besides, Jag carts don't fit into the ST cartridge slot.

7 I want to upgrade my STFM to 1MByte, what's the most reliable memory upgrade available and where can I get it?
Matthew Hill, Isleworth

stf: The best – and easiest to install – memory upgrade for the STFM is the Marpet Xtra-RAM Deluxe kit. It's available direct from Marpet Developments (☎ 0423 712600) for £44.99 including the RAM.



The beast itself in the flesh, the Xtra-RAM Deluxe board is the only way of getting SIMMs into an STFM.

also states that you can run a Desk Accessory by double-clicking on it but all I get is the message "you can only show or print this file." I don't know what am I doing wrong! Can you help?
John Price, London

A Desk Accessories do not load into the Desk menu because they are in a folder, you must copy them from the Auto folder to the root directory of your boot drive. All other files connected to a Desk Accessory – .INF and .RSC files usually – must also be in the root directory.

MultiTOS must be running before you can load Desk Accessories by double-clicking on them, they then load into the Desk menu in the same area as any other applications in memory. If MultiTOS isn't loaded then you get the error message you mention. There's no need to load Desk Accessories in this way if you use some kind of boot management program like Superboot 8, a PD program which enables you to choose the Desk Accessories and Auto programs you wish to run when you boot-up the system.

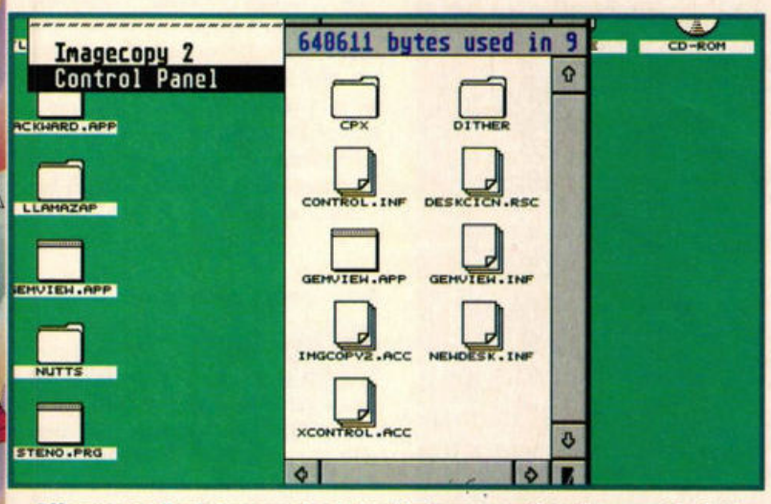
Training course

BEGINNERS

I have just bought myself a 1040STE but I am having a bit of trouble getting used to the TOS/GEM operating system. I don't have much experience of STs as I've only ever used PCs before. Are there any books available that can help me discover more about using my ST?
John Flook, Herts

A There are a few of good books you can get that teach you a little more about the ST. The Atari ST Explored costs £9.95 from the ST Club (☎ 0602 455250) and is a good introductory guide to using your ST. Another popular beginners book is Your Second Manual to the Atari ST, which is also available from the ST Club for £8.95. This book takes a more light-hearted approach to the subject and avoids too much technical jargon.

The Best of ST FORMAT is packed full with reviews, features, technical guides, beginners' guides, optional disks and a great deal more. It's available from ST FORMAT mail order on page 82.



If you want Desk Accessories to load into memory then they must be in the root directory of your boot disk - not inside a folder.

GFA Basic corner

Mac Marsden picks another selection of your GFA problems from the bulging ST Answers mailbox

Selection box

Is it possible to program in *GFA* so that I can use the built-in GEM fileselector box? I would like to write a program that loads in ASCII or text files and then shows them on-screen.
Brian Liverton, Lincolnshire

stf: Yes, you can call the file selector in GFA Basic using the following program;

```
a$="A:\"
n$="FILES.LST"
DO
    ~FSEL_INPUT(a$,n$,button)
LOOP UNTIL button
PRINT a$
PRINT n$
newfile$=LEFT$(a$,3)+n$
PRINT newfile$
```

Where on entry to the loop a$ holds the pathname, n$ holds the name of the file you wish to look for (this may be left empty n$=""). On exiting the fileselector a$ still holds the pathname (this could have changed), n$ now holds the filename that you wish to load (but not the pathname). So we have to put these two (a$ and n$) together to give us our path and filename to load.

Because a$ returns "A:.*", we have to remove the wildcard so the line*

```
newfile$=LEFT$(a$,3)+n$
```

does this for us, while adding both strings together so that we end up with

```
A:\FILES.LST
```

and not

```
A:\*.*FILES.LST
```

which means nothing to the computer. The variable "button" either returns a value of 1 if "OK" is selected and 0 if "CANCEL" was selected, so you can detect if nothing is selected.

Error break out

Can you tell me how I detect the <Control>, <Left Shift> and <Alternate> keys when they are used to break out of a program? Also am I

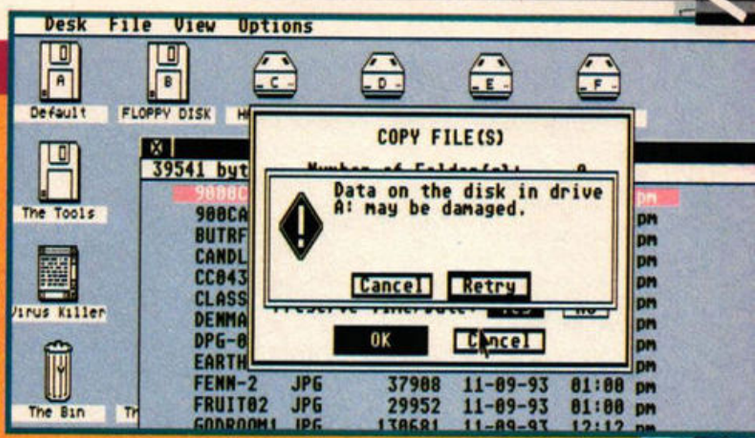
8 If I install TOS 2.06 in my STE can I use 1.44MByte disks? I have heard that TOS 2.06 supports high density drives.
Nigel Austin, Bradford

stf: *No, you cannot use high density disks in a standard disk drive in an STE. To use 1.44MByte disks you must install a high density adaptor kit and a high density drive, you can get the complete kit from Analogic Computing (☎ 081 546 9575) for £79.95.*

9 I am keen to use the new image processing software for the Falcon on my STE, what do I have to add to my system to be able to use programs like *InShape*?
Andrew Hooper, Reading

stf: *Falcon software like InShape only runs on the Falcon because it relies on the Falcon's own internal hardware. You could spend lots of money and add all sorts of hardware to your STE like a 16.7 million colour graphics board, hardware accelerator, loads of RAM and so on, but this would work out to be more expensive than buying a Falcon in the first place.*

You can only create pictures like this using *InShape* on a Falcon, but you need a 68882 co-processor installed in the Falcon.



The dreaded "Data may be damaged " message. If you get the same message with every disk then it's probably your disk drive causing the problem rather than your disks.

10 Magazine Cover Disks won't work in my STFM! It's not just *ST FORMAT* disks, but the disks from other magazines also don't work, yet any disk I format myself works. I get a message saying the data on the disk may be damaged. Do you know what the problem is?
Dave Atkinson, Hereford

stf: *It sounds as though you have a very basic problem, you have a single-sided disk drive and you are trying to read double-sided disks. Power Computing (☎ 0234 843388) can supply a replacement internal drive for £45, part number PC720 01.*

On the wing

FALCON

Can I use the System Solutions' *FalconWings* memory upgrade with two 1MByte SIMMs to give me 2MBytes of RAM?
James Prior, Hants

No, you can only use the FalconWings board with all four SIMMs sockets occupied, so you can have either 4x256K SIMMs, 4x1MByte SIMMs or 4x4MByte SIMMs to give you 1MByte, 4MBytes or 16MBytes of RAM in your Falcon.

Serious software on the Falcon demands 16MBytes of RAM for full use of its capabilities and potential, *FalconWing* is the perfect way to upgrade your Falcon.

able to detect an error or fault and still continue running my program without causing a crash?
Paul Wallace, Edinburgh

stf: *The command*

```
ON BREAK GOSUB
```

enables you to detect this key combination, amend the listing we have supplied below to suit your needs.

```
ON BREAK GOSUB test
PRINT "Press Control+Left↵
    Shift and Alternate keys."
DO
LOOP
PROCEDURE test
    PRINT "Break has been ↵
    detected!"
    PRINT "Do you really wish↵
    to end this program? [y/n]"
    a|=INP(2)
    SELECT a|
    CASE "Y","y"
    PRINT "OK, I will finish"
    ON BREAK CONT
    END
    CASE "n","N"
    REM here you would go back↵
    to your program
    ENDSELECT
RETURN
```

Detecting an error uses the same format as the <Control> <Shift> <Alternate> key combination. Type in the line

```
ON ERROR GOSUB procedure
```

with this command we are given two extra commands; RESUME *which causes the error to be repeated and* RESUME NEXT *returns you to the next command to be executed, so your program ignores it.* ON ERROR *returns your machine to its normal error trapping state, where, if a fault arises, the appropriate error message appears and brings about an abnormal program termination.*
Both ON ERROR *and* ON BREAK *can be used in the same program listing.*

Timed out

Is there any way in which I can pause my programs or at least delay the operation of them so that a person using my program cannot just press a key to short cut the delay routine?
Mark Jefferson, Hertfordshire

stf: If you use the command ~EVNT_TIMER(xxx), *where* xxx *is the required delay in milliseconds (hundredths of a second).*

Banned

I am writing an art program for my young daughter and was wondering if there was a way in which I could keep her from drawing on a particular part of the screen. For example, I would like to display a picture on the top third of the screen and let her draw on the bottom two-thirds of the screen. Do you know if there is any way that I can do this?
Pamela Shelly, Manchester

stf: The EVNT_MOUSE *command enables you to do just this.*

```
a%=0
b%=0
c%=320
d%=66
flag=1
DO

~EVNT_MOUSE(flag,a%,b%,c%,d%,↵
    x%,y%,u%,k%)
    IF u%
    PLOT x%,y%
    REM the commands here ↵
    could be anything
    ENDIF
LOOP UNTIL BTST(k%,2)
```

Where a% *and* b% *are the top left co-ordinates of the area where drawing is excluded, and* c% *and* d% *is the bottom right co-ordinates,* x% *and* y% *is the position of the mouse pointer,* u% *is the mouse button state and* k% *is the state of the <Shift> keys when an event occurs.*

Program operation – while the left mouse button is held down and the mouse co-ordinates are outside our no go area, a point is plotted on the screen. To exit the program hold the <Control> key down while the mouse pointer is within the drawing area.

The variables a%, b%, c% *and* d% *in our example have been set for low resolution and have to be altered if another resolution is to be used. The variable "flag," if set to zero has the opposite effect, enabling you to draw on the top third of the screen and leave the bottom two-thirds untouched.*

Music and MIDI

More musical musings from Andy Curtis and his MIDI therapy group

TCB update

I've just been given ten disks full of *TCB Tracker* MODS but they won't load into my copy of *Audio Sculpture*. I asked a friend to check them and he says they are all OK but they won't work on anything but *TCB Tracker*. I don't think this is true because they load into my copy of the ESION tracker OK, just not *Audio Sculpture*. Is there something wrong with *Audio Sculpture*?

Anthony Simons, Dorchester

stf: TCB Tracker uses a slightly different file format to the other sound trackers but it is easily convertible. The ESION sound tracker was specially designed to load TCB Tracker MODS and convert them, when saved, to standard format. The program doesn't tell you it is doing this, but it is.

You were very near to solving your problem, save all the .MOD files when you have loaded them into ESION and then they work with Audio Sculpture.

MIDI expression

I have been MIDI sequencing for quite a while but I am running into problems with the quantise feature of my sequencer. I like to play pieces with a lot of expression, that is, slowing down and speeding up so I don't like to use the metronome. However, when I come to quantise the pieces that I have done the music comes out all garbled. I thought quantise was there to help me to clean up my music, so is it really working?

Christine Brown, Cornwall

stf: What you need to understand is that the quantise feature of your sequencer is not a magic wand! If only it were. For quantise to be of use you have to play the original music as close to the beat as possible, this means having a metronome ticking away in the background. In simple terms, quantise "rounds up" notes to the nearest beat. If you are doing a quaver quantise (also known as eighth quantise) all of your notes are moved to the nearest quaver beat of the bar. If you have played without a metronome then your notes won't be anywhere near the beats of the bar at all – particularly if you are speeding up and slowing down, this is why you are getting problems.

When working with MIDI it is sometimes necessary to achieve results in a slightly different way, this means playing the notes in strict time and then changing the tempo throughout the piece afterwards. If you work at it you can produce music with a great feel. If you are convinced that you cannot work this way then simply use your sequencer as a multi-track tape recorder, just don't expect the quantise feature to work.

Fade to grey

I give up! I've tried everything and the only way I can get my MIDI music to fade out properly is to edit each individual note velocity using grid edit. It took me a whole afternoon to organise a nice smooth fade on my last piece of music. There has got to be an easier way. I use *Cubase* and I'm going to get v3. Please can you help!

Bill Titterington, Rosendale

stf: There are several different ways of going about this. A quick way to get a fade-out is to use the "baton" in key edit and simply paint the values on. Click on the "CNTRL" button and a row of controller information appears at the bottom of the screen. Move your pointer over the top of the bar until the hand appears and drag it upwards. You should now be looking at lots of vertical bars representing velocity. Select the "baton" using the right-hand mouse button and now you can paint the values you desire very quickly indeed for each part. Not only fades are possible, but swells and all manner of expression. Have fun.

Tuning samples

I have been collecting samples for quite a while now and I'm trying to make a complete collection so I can produce soundtracker music to order in any style. I have bought many samples from Public Domain libraries and also commercial ones. My problem is that so few of them are in tune with each other. When I load them into *Audio Sculpture* and play the same note with each sound, different pitches come out. Do you know if there's a way that I can rectify this?

Julien Deville, Hants

stf: This is a tricky little problem and one that needs patience to solve. The real trick is to use a reference tone, record a stable note on a tape recorder and have the tape handy. Using Soundlab (or any good sample manipulation package), load in the sample. Go to the tuning section and move the sample's pitch until it matches the tone on your tape. Now, click on the "Convert" (or whatever) button and the sample locks at the required pitch. Do this with all the samples you wish to use and they work well together.

You may need to play around a little with the pitch of the reference tone initially but, once you have it worked out, this is a foolproof method.

Unblock those nozzles

The nozzles on inkjet cartridges have a nasty tendency to become clogged with dried ink resulting in streaky printouts, this usually happens if the printer hasn't been used for a while. A quick and easy way to clear the nozzles is to steam-clean them, boil a kettle and pour a small quantity of boiling water in a mug. Hold the cartridge half an inch over the hot water for about 30 seconds or so then wipe the cartridge dry with a tissue without touching the nozzles. Install the cartridge in the printer and try a test print, all the dried ink clogging the nozzles should have been removed. If it doesn't work the first time then you may have to try a longer exposure to the steam.

Mark Jones, Bournemouth

Thanks for the tip Mark, there are a couple of points we should make regarding your advice. First, it can be very dangerous to mess about with boiling water, it's dead easy to scald yourself if you're not careful. Second, make sure that there is no moisture on the electrical contacts when you replace the inkjet cartridge back into the printer.

The STF address

Send all your ST related problems to ST Answers, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW. Please indicate the type of problem on the envelope.

STOS corner

Billy Allan sorts out one more of your STOS problems...

Data glutton

I am writing a database program, but it takes for ever to load or save the data using `OPEN, PRINT #` and similar commands. Is there a faster way of accessing the data?

Mary Sweeney, Chester-le-Street

stf: There is a quicker way to do this. By copying the data from the array it's originally stored in into a memory bank then using `BSAVE` to save it, or conversely, use `BLOAD` to load the data to a memory bank then copy it back into the array. This listing should give you the general idea.

```
10 key off : hide : mode 1
20 dim NAME$(4),ADDR$(4),MON(4)
30 reserve as work 10,32000
40 print "Press <1> to enter data ↵
   or <2> to view"
50 repeat : G$=inkey$ : until ↵
   G$="1" or G$="2"
60 if G$="2" then goto 300
70 for T=0 to 4
80 input "Name :";NAME$(T)
90 input "Address :";ADDR$(T)
100 input "Amount :";MON(T)
110 next T
120 H=0 : S10=start(10)
130 for T=0 to 4
140 ST=varptr(NAME$(T)) : Q=0
150 for Q=0 to len(NAME$(T))-1
160 poke S10+H,peek(ST+Q) : inc H
170 next Q
180 poke S10+H,0 : inc H
190 ST=varptr(ADDR$(T)) : Q=0
200 for Q=0 to len(ADDR$(T))-1
210 poke S10+H,peek(ST+Q) : inc H
220 next Q
230 poke S10+H,0 : inc H
240 if H mod 2=1 then inc H
250 loke S10+H,MON(T) : H=H+4
260 next T
270 loke S10+H,0 : H=H+4
280 bsave "DATABASE.DAT",S10 to S10+H
289 rem
290 rem> VIEW DATA <
291 rem
300 S10=start(10) : bload "DATABASE.DAT",S10
310 T=0 : H=0
320 repeat
330 P=peek(S10+H) : inc H
340 NAME$(T)=space$(128) : Q=0
350 ST=varptr(NAME$(T))
360 repeat
370 poke ST+Q,P : inc Q
380 P=peek(S10+H) : inc H
390 until P=0
400 NAME$(T)=left$(NAME$(T),Q)
410 ADDR$(T)=space$(128) : Q=0
420 ST=varptr(ADDR$(T))
430 P=peek(S10+H) : inc H
440 repeat
450 poke ST+Q,P : inc Q
460 P=peek(S10+H) : inc H
470 until P=0
480 ADDR$(T)=left$(ADDR$(T),Q)
490 if H mod 2=1 then inc H
500 MON(T)=leek(S10+H) : H=H+4
510 L=leek(S10+H)
520 inc T
530 until L=0
540 for T=0 to 4 : print
550 print "Name : ";NAME$(T)
560 print "Address : ";ADDR$(T)
570 print "Amount :";MON(T)
580 next T
```

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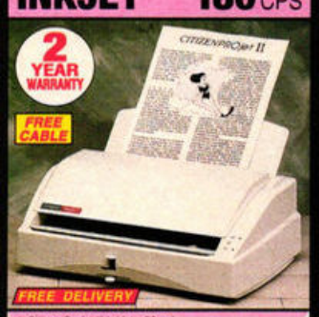

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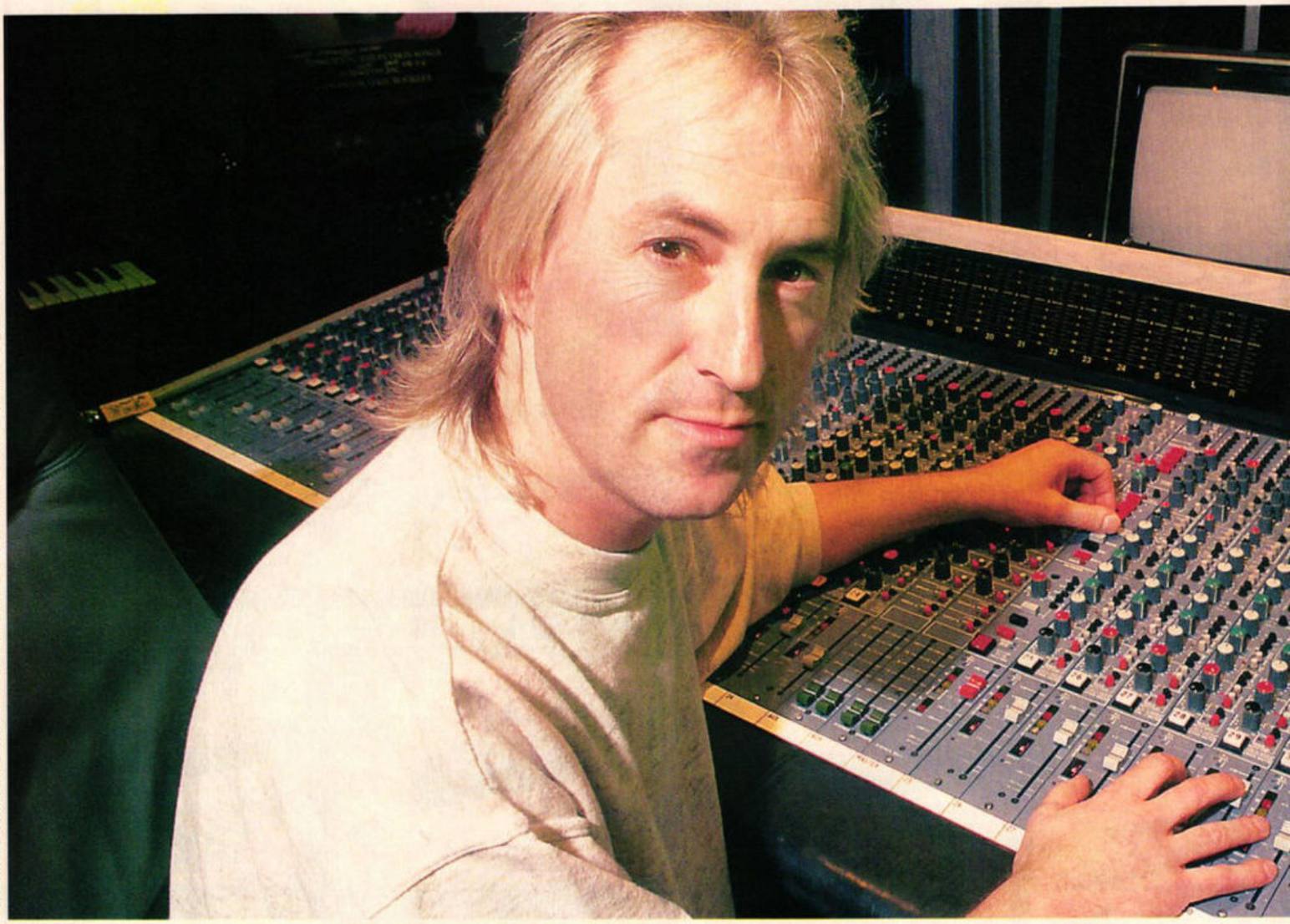


Thanks to System Solutions for the loan of software and hardware for this feature.

This man's been recording and producing music for 23 years, he uses *Cubase* on an ST, and he's worked with Monty Python. What better qualifications to review *Cubase Audio* for the Falcon? Introducing... André Jacquemin

Does the song *Always Look On The Bright Side Of Life* mean anything to you? How about *Every Sperm Is Sacred? One Foot In The Grave?* Ring any bells?

Well, they have two things in common. All were written in conjunction with members of Monty Python (who are they? Get a life), and all three were written by André Jacquemin. André, who has been producing and recording music since the early '70s, runs his own audiovisual production company in London. He's an avid Atari fan, owning three different STs, and he has used *Cubase* professionally for several years.

"André has produced work from *The Lumberjack Song* to the *Life of Brian* soundtrack"

Having written the odd article for our sister magazine, *Future Music*, we thought that André was perfectly placed to review *Cubase Audio* on the Falcon for *ST FORMAT*. He agreed, so we let him borrow our Falcon and a 1GByte (1,000 MByte) hard drive over Christmas for him to play around with. Now we've received his review, which starts on the opposite page, we thought you might like to know something about the man himself before you read it. So, here he is.

Presenting...

"At the moment I do a fair bit of work for TV companies, composing and writing music." Since 1970 André has been working with Monty Python, sometimes composing sometimes producing varied work such as *The Lumberjack Song*, the soundtrack for *The Life of Brian*, and the ground-breaking *Matching Tie and Hankie*, a record which contained three different grooves – which one played depending on which the needle hit first.

Since then he's done the odd bit of work for the ex-Pythons, such as the *One Foot in the Grave* theme with Eric Idle, and the soundtrack for *A Fish Called Wanda*.

"Last year with Dave Howman I co-wrote a 13 part cartoon series

STATE OR ART?

called *Rubbish – King of the Jungle*, for HTV," he says. "I'm doing a bit for the Cartoon Network at the moment – the satellite channel. I do a lot of their promo music. Generally my work is with records, though.

"I produced the music for Mike Leigh's last film, *Naked*," André continues. "That was quite good because it was in Dolby Stereo. I like to do a bit of everything, really, as long as it's audio work. I've just finished a film for Eric Sykes called *The Big Freeze*. That's sort of like *The Plank*, a silent farce with Bob Hoskins playing Tommy Cooper."

Getting to grips

What makes André such a good assessor of new products is that he is incredibly impatient with manuals. He doesn't like reading them, and if he hasn't got to grips with a piece of equipment within a few hours he packs it up and looks for something else. That's one reason why he found *Cubase* to be so good.

"*Cubase* is very easy to use," enthuses André. "My first sequencer was *Pro-24*, and I couldn't get on with that. After living with it for about two days, and then reading the manual, I sold it. I'd rather not bother, because it was so quirky to use. When *Cubase* came along, within an hour I had a 30-second commercial written on it. It was brilliant."

André's studio is already equipped with an 8-track D2D recorder – a Dawn system running on an Apple Quadra 950. "It's slightly different to *Cubase Audio* – I paid £24,000 for it, which is quite expensive," André told us. "But, you do get eight inputs and eight outputs, so it's slightly more serious. Having said that, in a sense I thought *Cubase Audio* was just as good value for money but I couldn't do as many things with it. Eventually, you will be able to, I reckon. One day you'll be able to buy a box add-on with eight inputs and outputs."

"I think *Cubase Audio* is going to follow where Soundtools was about five years ago. *Pro-tools* now goes up to 16-tracks, and I think *Cubase Audio* will soon have to meet that kind of criteria. In a sense it's a shame that Atari didn't get the Falcon together a little earlier."

"He's done the odd bit of work for the ex-Pythons, such as the *One Foot in the Grave* theme with Eric Idle"

After looking at the Falcon, André's even considering buying one for himself. "I'm going to leave it for a few months, but I would consider buying one. Even just for doing my master mixes, because DAT is all very well but you still get error corrections which cause problems. The incompatibilities between the error corrections in Sony, Otari and Fostex DAT machines is horrendous. So, a Falcon would be good to store all my mixes."

Is it time to put the trusty old portastudio in a car boot sale? Atari's Falcon finally gets the professional treatment from those nice chaps at Steinberg, and André's here to test it for us...

Despite the many things Atari have got wrong over the last decade, the one major thing they gave ST users, and got right, was to put direct MIDI access onto the ST keyboard. It's not quite industry standard, but it works and works well. This contributing factor has opened the doors and given access to everyone with an ST who wishes to turn their dreams of producing music into reality.

We have been fortunate enough to be supplied with countless programs to run on STs, from sound editors for synths to sequencers for composing. Notably, *C-Lab* and Steinberg's *Cubase* have been picked up in the professional market-place and have revolutionised the way we put music tracks together. It was difficult to see, up until now, how things can be improved. After all, you can compose and conduct a full symphony orchestra from your living room. You can even compose music to film running in sync and hitting cue points accurately with your video recorder.

Well, yet again there are major developments going on in the way we put music and soundtracks together with direct-to-disk recording. One of these packages has been developed by Steinberg and it's called *Cubase Audio*. If you are familiar with *Cubase* as a sequencer, you know that it's friendly and easy to use. Add a facility to turn your computer system into an 8-track recording system to your MIDI set-up and you can now become your own band, engineer and producer.

"After all, you can compose and conduct a full symphony orchestra from your living room"

I was very pleased when *ST FORMAT* contacted me to see if I'd be interested in doing this review of *Cubase Audio*. As a professional *Cubase* user I was keen to check out the system which has been developed on the Falcon.

THE LOW-DOWN

Does it crash?
All computers have their bugs and unfortunately crashing is the worst, so continually saving is an absolute must. However, in the time I had the pleasure of using this program it performed without any problems.

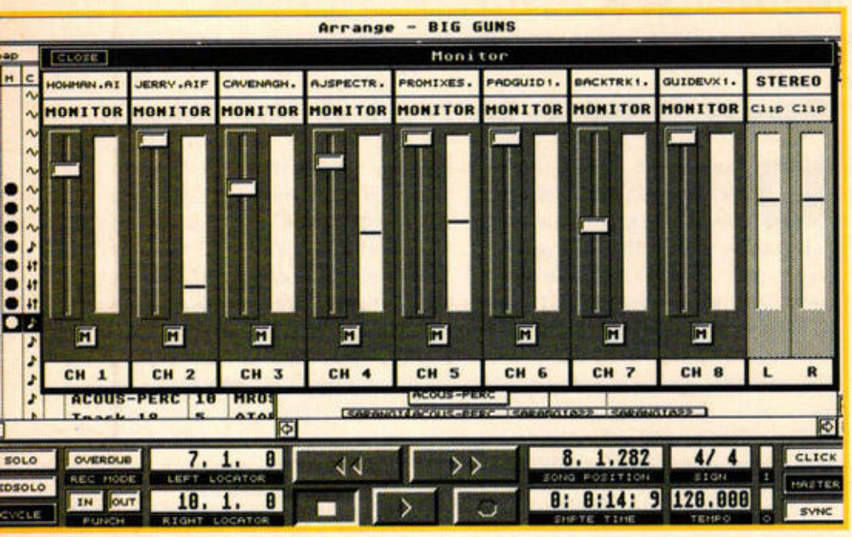
Ease of use
If you like *Cubase* as a sequencer you're going to love using this!

Flexibility and versatility
As a user friendly program you can get to grips with *Cubase* fairly easily but make sure you have a sufficiently huge hard drive with lots of memory and quick access times. Occasionally when loading existing programs they can become fragmented, that is, corrupted. This is not too big a problem with *Cubase Audio* and a decent defragmentation program rescues any problem files. So when you buy this program ask your dealer for recommendations of packages.

Is it worth it?
Well, if you are a musician and you demo tracks at home D2D systems are definitely worth checking out as the amount of flexibility is astounding. If, however, you just like to dabble with sound it's probably not worth the financial outlay.

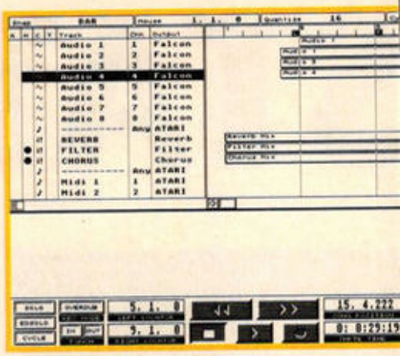
Number of tracks
There are eight tracks – but the downfall is that it only has two inputs and two outputs.

Recording Quality
Cubase uses the processing power of the Falcon so we're looking at 16-bit digital audio record and playback with up to 50 KHz sampling rate.



The Monitor section gives you all the levels and balance when playing back all eight tracks. Great for fast finger jockeys!

Here we have the Falcon set up with the keyboard and hard drive.



***Cubase Audio's* Arrange page works just like the original *Cubase* MIDI Arrange screen. The eight separate audio tracks are laid out horizontally, and as the cursor moves the audio plays directly from the hard drive - along with MIDI sequences in sync if required.**

D2D, or not D2D?

With direct-to-disk recording (or D2D recording) you have the capabilities and potential to record to the state-of-the-art technology. A simple analogy would be if you could imagine word processing with sound. After recording a track you can cut it, copy it, paste it, stretch it, loop it... I could go on but I guess this is where the art bit comes in.

There are many systems on D2D recording, with many more in development – from computer-based to specifically-built dedicated systems such as the AMS Audiofile and DAR sound station. These dedicated systems have been around for some time, but in the last three years or so computers have been able to cater for the complexities that D2D recording demands. All of these systems use the same process for recording, which is to store the audio onto large memory hard drives.

If there's one thing you need a lot of, it's disk space! To record one minute of mono sound you need 5MBytes of disk space, that's 10MBytes in stereo. So for 20 minutes mono or ten minutes stereo recording you need 100MBytes. This disk capacity is shared across all the tracks, so you may have four minutes recorded across four of the tracks and 16 minutes on another single track, which means you need 100MBytes of disk space.

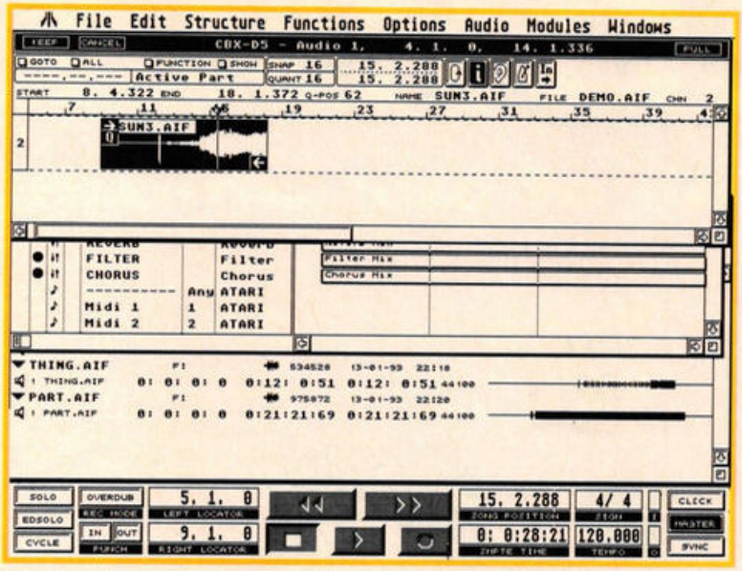
"You have the capabilities and potential to record to the state-of-the-art technology"

This is the only major area of huge financial outlay, and considering some of the systems that are available can cost you well over £25,000, the Falcon option has got to be worth looking at. Or do you get what you pay for? Well, *Cubase Audio* does have some shortfalls but it also has some surprising extras too.

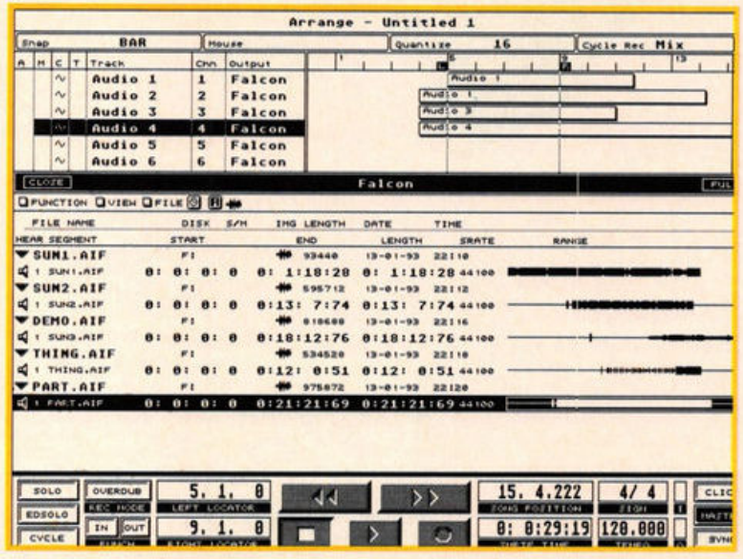
Modes of operation

To get started you need a Falcon with at least 4MBytes of RAM. This isn't ideal because the *Cubase Audio* program takes up the best part of this memory, but at least it's enough to get you going. Eventually you should look to get 14MBytes on board to get any satisfactory results.

Cubase Audio is unique in that it can choose three ways of



Each individual track can be analysed in sections on the Segment page. This displays your recorded audio as one or a series of many sections, which don't actually contain any audio, but point to a particular area in the main audio file. When looping and joining samples to create a song, this conserves valuable disk space.



The Pool screen enables you to view the audio tracks on the same screen, information such as length and sampling rate, and a graphical representation. Clicking on the speaker icon plays the individual track.

using the eight audio channels, each of which uses a different amount of memory. In the normal operating mode you would select the Hard Disk option which means that the audio channel reads its files direct from the hard drive once when recorded and then again during playback.

In RAM

In the RAM operating mode the chosen channel can record and play back from RAM, and the recording is automatically recorded onto the hard drive as well. One advantage of this type of recording could be that before an extensive editing session on a piece, you could save this to the internal drive or even a floppy, thus saving valuable memory.

The third option is to use Sample mode. There are a few drawbacks here as the sampler channels store audio in RAM and can only be used for mono sound files. However, you can assign various sampler channels to receive

"If you're relatively new to sequencing the visual aspect to *Cubase* makes it a very intuitive program to operate"

MIDI triggers, and these assigned MIDI triggers can be recorded onto a separate dedicated track and played back. You can also trigger several audio files simultaneously.

Limited I/Os

Although the Falcon has eight separate tracks to record and playback from, it has only one stereo input and output. Unfortunately, this limits its use in many professional applications such as the need for separate balancing, moving pans and audio sweetening (adding effects) during mix down. But look at it this way, with more outputs you would undoubtedly need a larger mixing desk and an extra add on processing box to access the separate channels, and it would cost a hell of a lot more to buy.

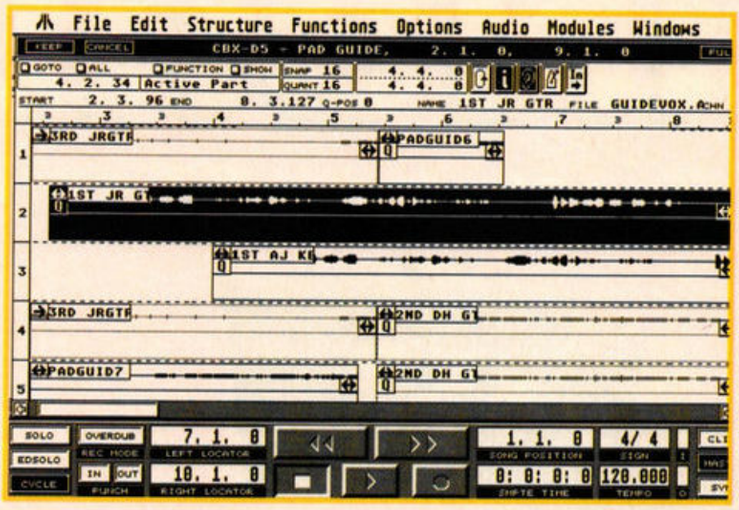
On the positive side, you can automate a mix internally by adjusting the volume, doing channel mutes and panning; even adding reverb, parametric filtering and chorus effects. It should be noted though that the effects can only be produced one at a time, but as you are in the digital domain you can copy and add as much as you like without degrading the original recording.

Once you have done all the treatment you want on each track, the channels can then be recorded directly onto one mono or stereo track. Again, once you've completed the mix you can mute and keep the originals for safety or use them for new recordings.

Verdict

Cubase Audio retains all of the original features and user friendliness that made *Cubase* one of the most popular sequencers to date – but with the added advantage of built-in recording. All the facilities for copying parts, editing and moving tracks around are really straightforward if you're already a *Cubase* user. Even if you're relatively new to sequencing the visual aspect to *Cubase* makes it a very intuitive program to operate.

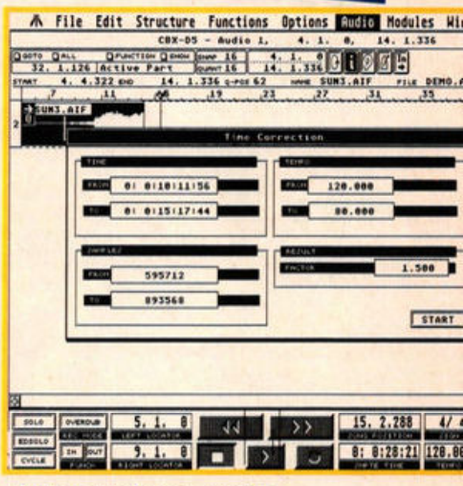
If you are using your ST for music, and you're thinking of upgrading to the Falcon with all its faster advantages, then definitely check this package out. ***stf***



Mess around until your mouse ball drops off in the Edit window. Overlay, cut, move samples, rename - just like a word processor, only with music.

The vital equipment

- An Atari Falcon with preferably 14MBytes of RAM – £1,200
- A large hard drive (1000 MBytes) – £1,000
- Cubase Audio Package – £700
- Defragmentation program – £50
- A decent microphone if doing live sound recording: from £75 upwards
- A midi keyboard or expander – £100 – £5,000



An important and powerful function is Time Stretch. This enables you to mark out a section of audio, and stretch or squash its length without affecting its pitch. So, if you have a breakbeat that doesn't quite fit into your loop, you can make it slightly longer until it does - and it won't affect the sound.

Cubase Audio

£700 Harman Audio
☎ 081 207 5050

Highs
- Built-in recording.
- Very flexible.

Lows
- Needs 14MBytes to work effectively.

STF RATING 94%

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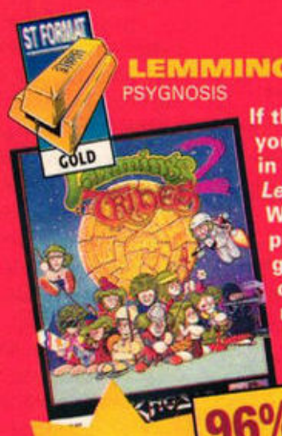

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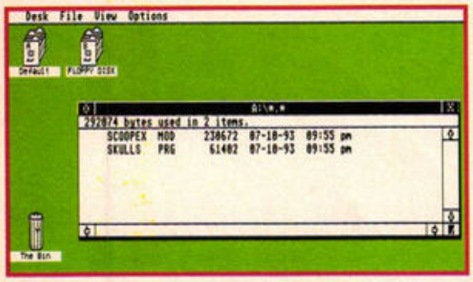
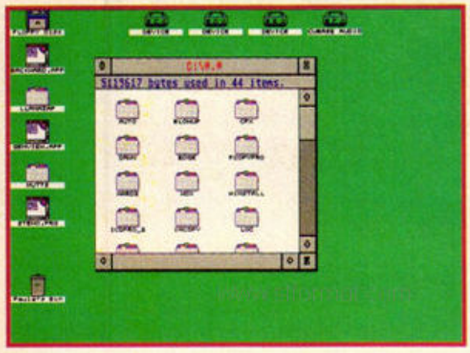
UNDERSTANDING

Although the Falcon looks superficially similar to your ST, its operating system is very different. Clive Parker takes a look at the major differences between these two machines

■ The Falcon looks like your ST but it's a much more powerful piece of kit altogether.



■ Above - The familiar ST green Desktop we all know and love, it's practical but hardly the best looking screen setup on a computer.



■ Left - Ah, this is much better. The Falcon's Desktop has a completely different look, it's colourful and you can customise it to suit yourself.

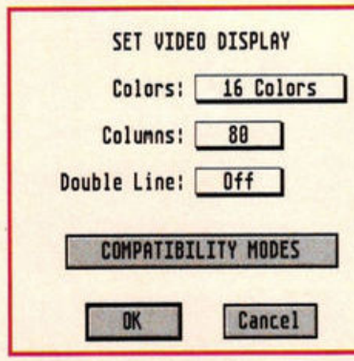
Your Falcon is a radically different machine to your ST. Apart from a few extra ports and some cosmetic colour changes, it looks almost exactly like a standard STE or STFM. If you've just upgraded to a Falcon, or added a Falcon to your system then you've probably noticed a few big changes in the main operating system and in the look of the Desktop as well.

The Falcon's Desktop is much more colourful than the ST's, and if you're in VGA mode, it's much larger too. A coloured version of the TOS 2/TOS 3 Desktop icons are included enabling you to install a more pleasing Desktop layout on your screen. If you haven't used TOS 2.06 on your ST then you won't be used to the idea of installing program icons on the Desktop, the more modern versions of TOS enable you to drag a program icon from a drive window and place it anywhere on the Desktop in exactly the same way as a drive icon. When you save the Desktop the position of the icon is saved and you can run the program by double-clicking on the Desktop icon whenever you boot up your Falcon.

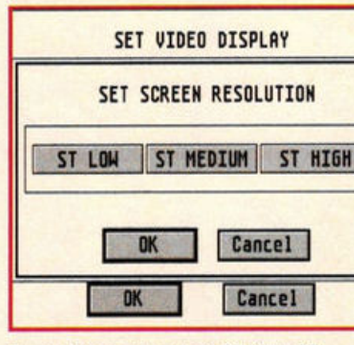
Using ST software

One of the biggest problems with the Falcon is that a lot of ST software simply doesn't run on the new machine. There are several reasons for this, these simple guidelines should enable you to find out what software works on your new machine.

Almost all GEM based software runs happily on the Falcon as



■ Select Set Video at the Options menu and you can set up the screen resolution. For best results with ST programs select the large Compatibility Modes button...



■ ...and you can select ST low, ST medium or ST high resolution on any VGA or Atari monitor, although high resolution mode is a bit flickery on an Atari colour monitor.

THOSE ESSENTIAL FALCON CONTACTS

There are relatively few Falcons compared to STs so it's a little harder to get hold of PD and Shareware software. Here are some essential Falcon contacts

16/32 Systems: The official UK distributors of Lexicor graphics software, 16/32 are also major Falcon PD suppliers.
☎ 0634 710788

FFF: Falcon Fact File, a group dedicated to putting Falcon owners in contact with each other and supplying Falcon software. Send a HD disk and stamped self-addressed jiffy bag to Falcon Fact File, 11 Pound Meadow, Whitchurch, Hampshire G28 7LG.

Floppyshop: Apart from a large collection of Falcon PD and Shareware running to over 80 disks, Floppyshop are the UK distributors of the new Falcon image processing program *ChromaStudio 24*.
☎ 0224 312756

FOG: Falcon Owners Group, a large group of Falcon fanatics able to supply the cream of Falcon PD software as soon as it becomes available. Members also get a regular magazine style newsletter and disk. Send an SAE to Falcon Owners Group. PO Box 353, Stafford ST17 9US.

Goodmans International: One of the first PD and Shareware libraries to support the Falcon, Goodmans have a large selection of Falcon software.
☎ 0782 335650

Holodeck BBS and the Chameleon BBS: Large ST based BBSs with extensive Falcon areas, acting as a node to all the major networks and are networked together themselves. These BBSs are the official Falcon Owners Group BBSs.
Holodeck BBS ☎ 0454 317047,
Chameleon BBS ☎ 0454 881095

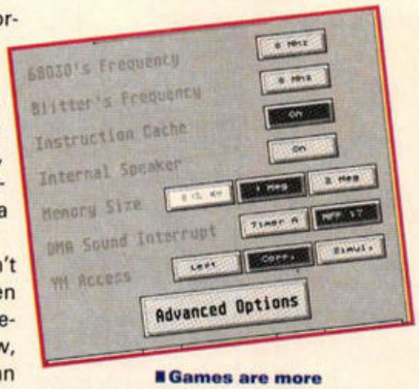
ST Club: Already justly famous as one of the largest PD libraries in the UK, the ST Club has a growing Falcon library and a Falcon section in their *ST Applications* subscription magazine.
☎ 0602 455250

YOUR FALCON

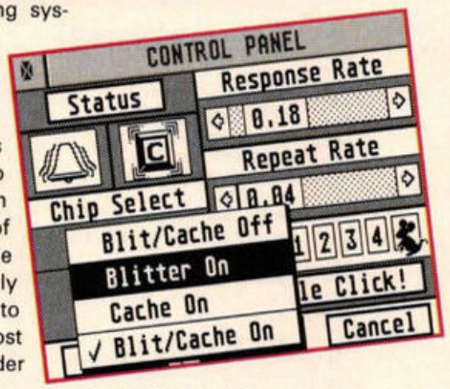
long as it has been written correctly following the official Atari programming guidelines. You can identify GEM programs because they use the drop-down menu bar at the top of the screen, provide access to Desk Accessories and output all screen data in GEM windows.

Some GEM programs won't work in any of the Falcon's screen modes because they look for a specific ST screen resolution – low, medium or high – and exit with an error message if they don't find the right resolution. None of the Falcon's own resolutions is an exact counterpart of the ST's resolutions.

To get around this problem the Falcon's video operating system has ST screen modes built in, to access them you have to select Compatibility Modes from the Set Video function in the Options menu. This enables you to run ST low, medium or high resolutions on any type of monitor. Running one of the compatibility modes usually enables a GEM program to run on the Falcon, and most TOS programs also run under the compatibility modes.



Games are more difficult to run on your Falcon. The excellent *Backwards* ST emulator fools your Falcon into thinking that it's just a humble ST and enables about 70% of ST games to run.



Disabling the Cache sometimes enables some ST software to run on the Falcon, the Blitter doesn't usually make any difference.

Other options

If you find your software still doesn't run then there are a couple of other options to consider. The Falcon has a hard drive cache which some ST software doesn't like, the latest version of the XControl Panel enables the cache to be disabled by clicking on a button in the Chipset CPX. Other software may not like the 16MHz clock speed of the Falcon's 68030, there is no way of changing the processor speed to 8MHz using a CPX at present although there are several PD utilities that set the processor speed from the Auto Folder.

Games are a big problem, ST games just aren't designed to run on anything but an ST. To enable some ST games to run you need a program called *Backwards*, it's an ST emulator for the Falcon and enables about 70% of ST games to run. It's available from most PD libraries and was also featured on *ST FORMAT* Cover Disk 55 (see page 60 if you missed it). The program's stuffed with options enabling your Falcon to be configured, but it's worth noting that different games need different setups so it's basically trial and error. ***stf***

Ten ways to get more from your Falcon

1 The internal speaker of the Falcon is included because VGA monitors do not have speakers, an external set of powered speakers connected to the headphone socket is a useful addition if you are using sound sampling software.

2 If you don't have a hard drive then always use High Density (HD) disks, Falcon sound and graphic files tend to be on the large side.

3 If you are using VGA resolution or 640x400 with interlace on a standard monitor then it's a good idea to set your Falcon to 16 colour mode, this improves screen scrolling in text based applications.

4 Your Falcon whizzes along at a respectable 16MHz, adding NVDI (System Solutions) to accelerate the system makes the already fast Falcon seem turbo-charged.

5 If you don't have a hard drive already then get one. Almost all Falcon software relies on a hard drive.

6 All of the major Public Domain libraries already have reasonable Falcon sections. Most software seems to be either demos or graphics programs but some good utilities are mixed in.

7 If you have a standard Atari (or Philips) colour monitor then you can emulate VGA mode for using serious graphics software.

8 If you intend to use the Falcon for D2D recording then your best bet is to get an external SCSI hard drive – the larger and faster the drive, the better. Use the internal hard drive for the software and the external drive for the files.

9 If you have a 1MByte RAM Falcon then upgrade it to 4MBytes. There's very little Falcon software available that just uses 1MByte.

10 If you can't afford a 16MByte RAM upgrade – typically costing £700 or more – then use a virtual memory program like *Outside* available from 16/32 Systems. This program enables you to use an area of the hard drive as if it were RAM and only costs around £70.

THE ALL IMPORTANT FALCON JARGON

32-bit: The 68030 is a 32-bit processor, this means it can process twice as much data as a 16-bit processor in just one single operation.

68030: The main processor in the Falcon, a 32-bit processor that is a direct descendant of the 68000 found in the ST.

68882 Co-processor: Also known as a floating-point processor, this chip copes with complex mathematical operations at very high speeds leaving the 68030 processor free to concentrate on other tasks.

CPX: Control Panel eXtension, the Falcon uses a special Desk Accessory called the XControl Panel to load small utilities called CPXs. These can be unloaded when they are no longer required.

D2D: Direct to disk recording, the Falcon's DSP system enables CD quality recordings to be made and stored on a hard drive. Basically, direct to disk recording is a very advanced form of sound sampling.

DSP 56001: Digital Signal Processor, this is the chip that enables the Falcon to run such powerful applications. The DSP is a parallel processor that enables digital sound and graphics data to be processed at very high speeds.

HD drive: 1.44MByte high density drives are fitted as standard in the Falcon, enabling twice as much data to be stored as on a standard floppy disk.

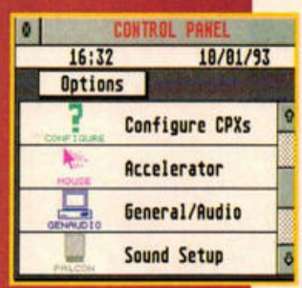
IDE hard drive: Falcons come supplied with an internal IDE hard drive. This is fitted as standard enabling software to run at high speed.

MultiTOS: Hard drive based multi-tasking operating system enabling more than one program to run at once.

SCSI2: The SCSI2 socket is the external hard drive connection of the Falcon, enabling CD-ROMs, optical drives and other SCSI devices to be used.

True colour: A bit of a fib here by Atari, the Falcon screen mode should really be called high colour. True colour means any pixel on the screen can be any colour without any palette restrictions, the Falcon is in fact restricted to 32,000 colours.

VGA: Virtual Graphics Array, VGA mode is 640x480 pixels using up to 256 colours.



Atari's XControl Panel enables as many CPX utilities to be loaded as memory permits.

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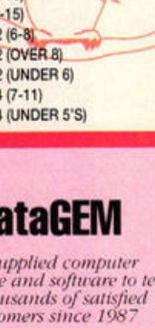

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THE INSIDE STORY

So how do the various cogs and gears mesh inside your keyboard to produce what you see on-screen? Clive Parker gets out his tools and probes gingerly within...

You just don't know what's actually going on under the skin of your ST, so we're going to tell you.

Disaster! Your ST seems to be broken, it's died – or at the very least it's severely depressed – and you fear you may never get the chance to nuke a level of *Lemmings* again. In most cases of "sudden ST sleeping syndrome" there's no need to fret too much because there's usually a perfectly simple solution.

"And you fear you may never get the chance to nuke a level of *Lemmings* again"

This typical example happens to all of us at some time. You turn on your trusty old ST and go through the warm-up delay, you finally get to the Desktop only to be confronted with a totally unresponsive mouse, a dead keyboard and continuous beeping from the speaker. You begin to panic and feel all warm and a touch sweaty. Nothing you do seems to work even when you turn off your ST and start again, you fear that you may have to take your ST for an expensive trip to the repair man.

In fact, the solution to this particular nightmare is nothing more difficult than turning off the auto-fire button of your joystick. The continuous signals sent to the joystick port by the auto-fire button swamp any signals that are sent from the mouse or the keyboard, and because your ST can't get any instructions it appears to be dead.

An intelligent keyboard

As you pound furiously away at your ST keyboard you may imagine that the information generated by each key is instantly entered into the program you are running. Well it's not. In fact, a very complex process takes place between you pressing the key and the character appearing on the screen.

The keyboard is controlled by a special keyboard processor chip called the 6301. The 6301 is known as an intelligent processor because it can receive data as well as send it, in fact, it's a complete single-chip computer in its own right. It contains 128 bytes of RAM, 4K of ROM, I/O lines and a serial interface for communication with the main 68000 processor of the ST. The ST's real-time clock is also part of the keyboard processor.

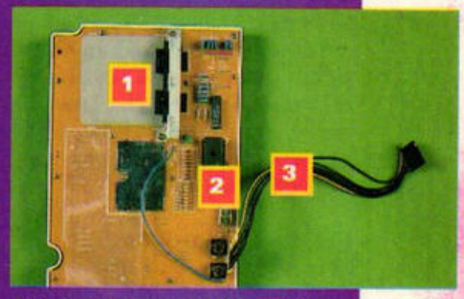
All of the information generated by the keyboard is dealt with by the keyboard processor, including data from the mouse and joystick ports, which means that the main processor doesn't have to keep an eye on the keyboard.

The 6301 lets the system know of any activity taking place in the keyboard including working out which key has been pressed, joystick movement and calculating the mouse position. Only the actual X and Y co-ordinates of the mouse pointer are sent to the 68000, leaving the main system processor to get on with running the current program. The last link in the chain between the keyboard and the

KEYBOARD HARDWARE

The actual hardware side of the keyboard system doesn't look that impressive but it performs one of the most vital jobs in your ST

1. Mouse and joystick ports.
2. 6301 keyboard processor.
3. Connection to main circuit board.

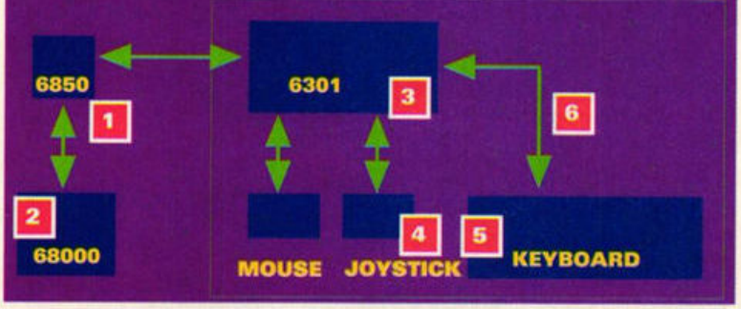


A powerful processor is hidden away under your keyboard.

HOW IT ALL LINKS TOGETHER

The keyboard's systems are connected to the main board by a serial link and the keyboard processor

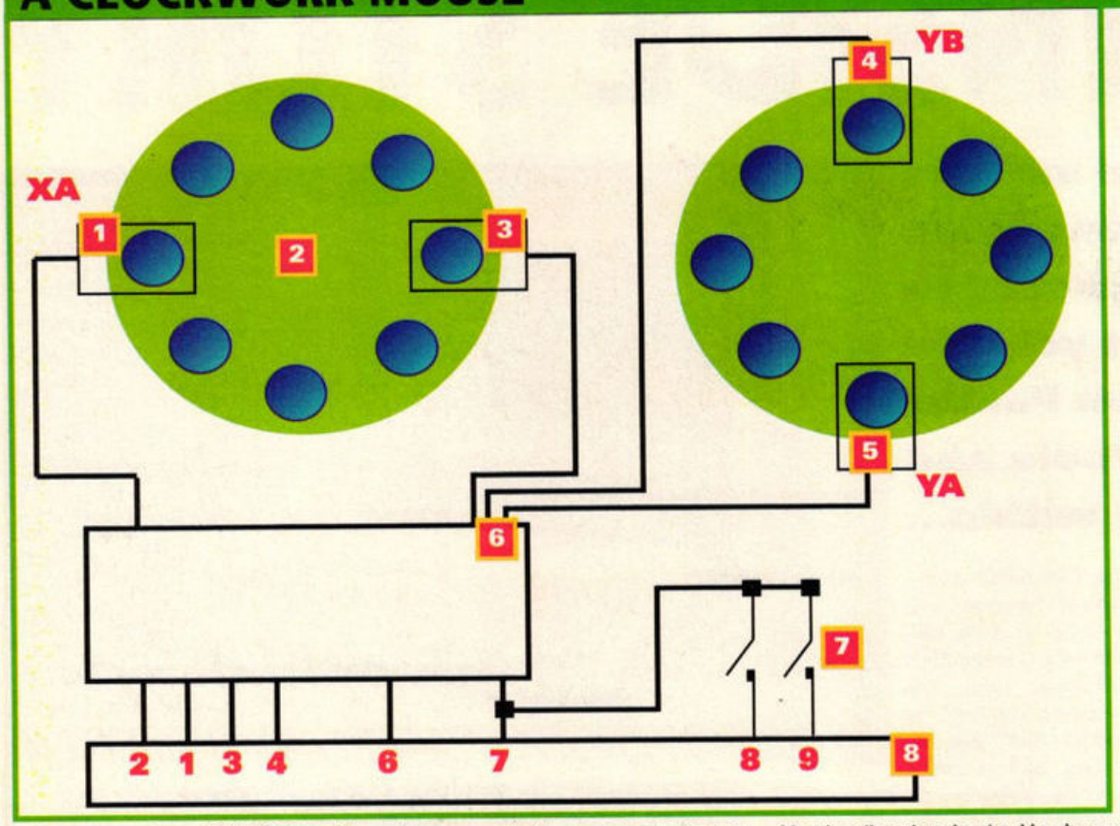
1. 6850 ACIA serial chip.
2. Main 68000 processor.
3. 6301 intelligent keyboard processor.
4. Mouse and joystick ports.
5. Keyboard circuit.
6. Keyboard system.



IT'S DEAD, JIM

There is another cause of the ST "dying" which is connected to the keyboard processor that can cause you needless worry. If you have the mouse buttons pressed when you boot your ST then the processor tries to enter a special mode of operation not supported by the ST's hardware and everything "locks up" completely. The only way to remedy this is to reset your ST and make sure you don't play with the mouse buttons when you boot up.

A CLOCKWORK MOUSE



There are all kinds of bits and pieces tucked away inside your mouse, here's how they all link together to move the cursor

1. **XA light barrier, determines downward movement.**
2. **Encoder wheels, the rubber ball turns these.**
3. **XB light barrier, determines upward movement.**
4. **YB light barrier, determines right movement.**
5. **YA light barrier, determines left movement.**
6. **Amplifier, cleans up light barrier pulses.**
7. **These switches represent the mouse buttons.**
8. **This number represents the pin on the mouse plug.**

main system is an ACIA 6850 serial interface chip that controls the flow of information to and from the 68000. Data from the keyboard is sent to the main circuit board of the ST where the 6850 ensures that keyboard data is passed on a complete byte at a time.

Inside your mouse

Your mouse is one of the most vital parts of your ST, without it you wouldn't be able to use any of your software except auto-loading games. So how does it actually work? The internal construction of the mouse isn't very complicated at all considering the precise positional information that has to be sent to the main processor to control the mouse cursor on-screen. The basic components consist of two encoder wheels, four light barriers, which detect the movement of the wheels, and a drive mechanism – that's better known as the rubber ball.

The mouse sends information to your ST about the cursor position on-screen and the mouse button status. Movement information is broken down into direction in the X-axis, direction in the Y-axis and the distance travelled.

When you move the mouse over your mouse mat, the rubber ball turns the drive axles of the two encoder wheels, set at right angles to each other, and the direction of the mouse movement determines which way the wheels turn. Each encoder wheel has a series of holes in it, the light barriers detect the movement of the encoder wheels by the interruptions to the light. Every time the light is interrupted a pulse is sent, by counting the number of pulses the amount of movement can be calculated.

Determining the direction of movement is slightly more complicated. Each encoder wheel has two light barriers that record pulses slightly out of step with each other so they don't send pulses at the same time. The keyboard processor senses which of the two barriers on a wheel sends the first pulse first, this determines the correct direction of movement. A small amplifier chip in the mouse cleans up and strengthens the pulses from the encoder wheels so that they are strong enough to be analysed by the keyboard processor.

Joysticks and trackballs

Joysticks send the same left and right and up and down information to the keyboard processor as the mouse. Instead of the slightly more complex system used in the mouse a joystick sends its directional information by simply completing a circuit or closing a microswitch, there's no messing about with calculating pulses. Trackballs work in much the same way as the mouse, moving the ball drives a similar set of wheels and detector. ***stf***

Joystick and mouse connections

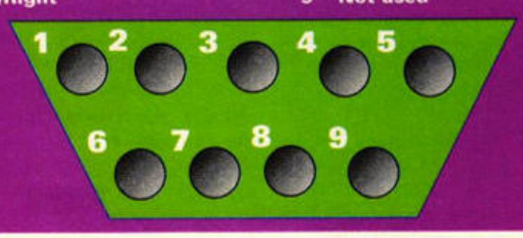
Where a pin connection has two designations on port 0 - such as XB/Up - the first item (XB) refers to the pin function when a mouse is connected and the second (Up) refers to its function with a joystick connected

Port 0 - Mouse

Pin	Function
1	XB/Up
2	XA/Down
3	YA/Left
4	YB/Right
5	Not used
6	Left button/Fire
7	+5V
8	Ground
9	Right button

Port 1 - Joystick

Pin	Function
1	Up
2	Down
3	Left
4	Right
5	Port 0 enable
6	Fire
7	+5V
8	Ground
9	Not used



JARGON BUSTERS

The mouse and keyboard contain an interesting variety of bits and pieces that you may not have heard of before

6301 processor: The "intelligent" single-chip computer that interprets and processes keyboard output.

6850 ACIA: Asynchronous Communications Interface Adaptor, a serial interface chip that regulates the flow of information between the keyboard systems and the 68000. Another 6850 controls MIDI information.

Encoder wheel: Small wheel inside the mouse that generates pulses of information by interrupting the light source of the light barriers.

Light barriers: Small light source and detector combination that sends a pulse when the light beam is broken.

XA, XB, YA, YB: The four light barriers used to determine X and Y movement in the mouse.

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The 'Link' from ICD includes an external SCSI host adaptor, allowing the Atari ST to connect to external SCSI devices e.g external hard disks, optical drives and CD-ROM drives which were originally designed for the Apple Mac, IBM PC etc. Just plug-in and no power supply is needed.

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Python 1 Joystick **£9.99**
Apache 1 Joystick **£7.99**

power drive

The award winning external disk drive which includes a virus blocker, built-in Blitz Turbo and is able to boot from drive B. This is the ultimate in external disk drives for the Atari ST computer.

£60

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Power Computing manufacture many disk drives for the Atari ST, all of which are made from high quality components.

PC720P (Inc. PSU) **£55**
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(360K upgrade drive, needs case modification)
PC720 OI (Official internal) .. **£45**
(720K replacement drive)

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If you have an internal drive that is not compatible with 'boot from drive B', this cable will solve your problem.

Drive-B Cable **£9.95**

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Back-up disks at lightning speeds, Blitz copies from the internal to the external drive and cleverly by-passes your ST's controller chip. In around 40 seconds you can back-up an ST disk, what's more you can now switch between your disk drive and Blitz Turbo without disconnecting your Blitz interface. Probably the best Atari disk copier on the market. (1988 Copyright act applies)

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Supra Modems come complete with English phone cable, RS232 serial cable, heavy duty PSU and comms software, send and receive fax's, 100% compatible with industry standard 'AT' command codes, free trial offer to various services and V42 bis data compression.

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ring interruption

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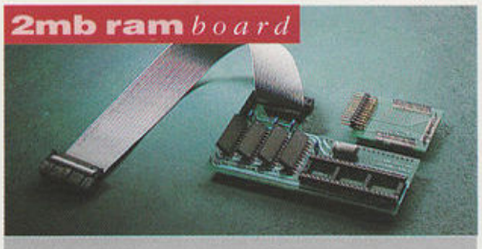
Ring Interruption **£15**

super mon

SuperMon comes with all the features of the 'Ultimate Cartridge' and more. Some of the features included with SuperMon are: Program Switcher- allows two programs to be in the memory simultaneously and switched between at the touch of a key, Printer Spooler- allows files to be printed at the same time as other tasks, Comprehensive Debugger- disassemble programs and step through them, intercept OS calls, search memory or find where a routine is called from automatically, Diagnostics Function- check the internal functioning of your ST disk analyser, custom format disks, read/write sectors, hide files, Utilities- the SuperMon also has many utility functions available, including reset proof RAM disk, mouse trap function, time display, screen snapshot and 50/60Hz display toggle.

Ultimate Cartridge **£25**
Including SuperMon **£35**

2mb ram board



The Atari RAM Board requires no soldering and plugs directly inside the ST using the latest capacity RAM chips. Full fitting instructions are supplied. The ST RAM Board is available either as a 2MB or 4MB RAM expansion.

£99

4MB RAM Expansion **£169**
1MB SIMM for STE **£35**
512K RAM STFM **£45**

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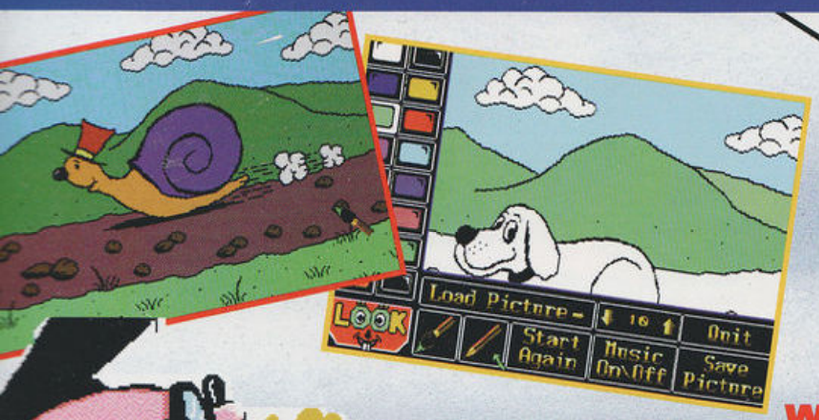
ST FORMAT

On this month's...

COVER DISK



F1

Whizz round the tracks in this fully playable demo of Domark's speedy racing game, complete with loads of options

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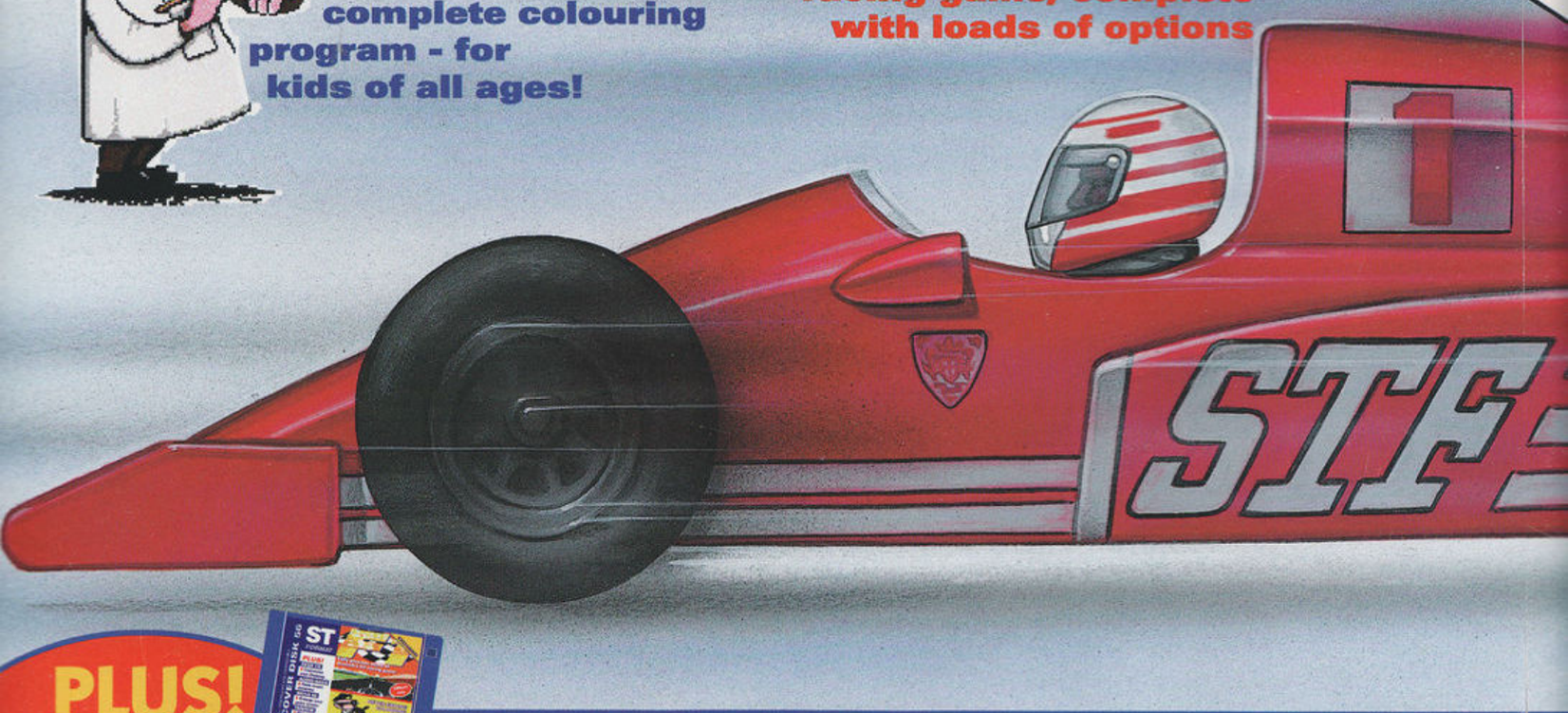

PLUS!

he utilities *you* sked for. We've found another 5 great ways to improve your ST

- **Tandem** banish those disk swapping blues
- **Audio Bass** essential database to catalogue all your CDs
- **Searcher Deluxe** find missing files, modify and update 'em
- **Mega 60** fill your screen and get rid of those annoying borde
- **Desk FX** customise your Desktop: change the fonts, add the background you want and animate the mouse pointer