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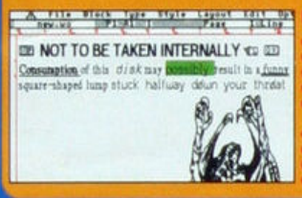

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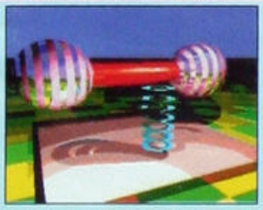

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"An experience not to be missed" – Another World goes under the microscope

Reviewed and rated this month: ***Imagecopy, Quick ST 3 and more in our new mini-reviews section.*** ***PLUS:*** ***A new three-part series on using Sequencer One***

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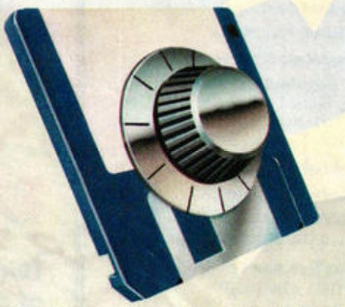

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150 unbeatable ST tips

This could be most useful issue of *ST FORMAT* you've ever read! This month we answer 150 of your most common problems, then next month we guarantee to answer every ST query we receive. There's nothing holding you back any more!

Can I get a new power supply? ● Is my second drive faulty?

What do "FM" and "E" stand for? ● Can I connect my ST to a hi-fi?

Can I get samples from *STOS Maestro?* ● How can I get stereo?

Can I get a printer driver? ● How can I print GDOS documents?

Kings Quest crashes occasionally – why? ● Can I back up my games?

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AND NOW FOR A WORD FROM YOUR EDITOR...

We think the ST is the best home micro you can buy. But no matter how good the machine might be or how knowledgeable you are, everyone experiences problems at some time or another – whether it's trying to create an AUTO folder or programming the blitter chip. This month we're starting a brand new section to help you overcome every problem you ever had. It's called ST Answers, and it's our aim to answer every query you send us about your ST. Using a set of icons, explained here. you can go straight to the kind of tip you want – music, printing, getting started, whatever it may be.

This month we've devoted a massive 20 pages to your problems. From next month we'll devote as much space as we need to answer all your queries. So, if you have a problem with your ST, turn to page 26 to see if we've answered it. If not, just write your problem on the Freepost card inserted in this issue after page 34 and send it to ST Answers *absolutely free*. We guarantee to answer *every* ST query we receive.

Can I convert GFA listings? ● How can I load samples into my programs?

Is there an RTTY teletype? ● Can I use split baud rates?

Why do I need a hard drive? ● Can I connect two floppy drives?

Can I compress files? ● How can I recover accidentally deleted files?

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● **No point in customising *Shadowland* characters – they're all in the shadows...**

THE GREAT *STF* COVER DISKS

Turn to page 8 now!

HAVE WE GONE COMPLETELY MAD?

Not content with giving away *Sequencer One* and *Canvas* in January, now we're giving away a complete word processor worth £50 too!

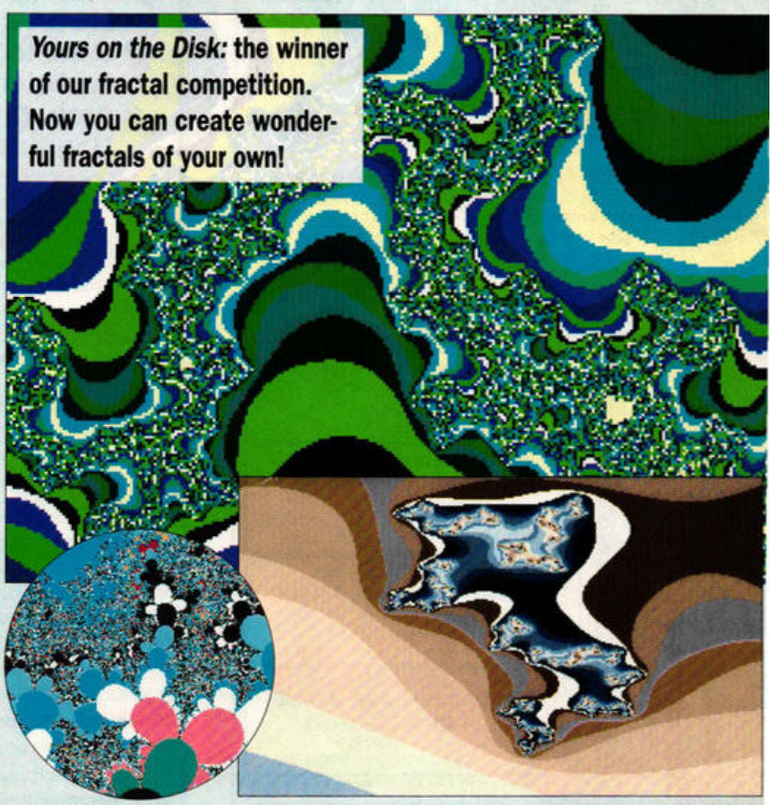
Write On **earned a *FORMAT* Gold rating when reviewed in *STF* 22. It offers near-DTP features beyond what you'd expect from a WP – including: ● The ability to import graphics ● Graphic printing for more control over the look of a page ● WYSIWYG display – what you see on-screen really is what you get on paper ● Macros ● Powerful mail-merging ● Up to 20 fonts in one document ● Proportional spacing**

AND NOT FORGETTING...

This month's main Cover Disk is also going to be pretty valuable as well! This month's fabulous Cover Disk demo is the absorbing platform beat-'em-up, *Leander*. As you'd expect from Psygnosis, *Leander* comes armed with visuals to make your heart race and gameplay just as addictive. Try it!

If games are your thing, we've also got the complete *Penguins* game – an addictive puzzler.

Also on this month's Disk is the winner of our fractals competition and the winner of our *Canvas* drawing competition. It's a winner all right!



Yours on the Disk: **the winner of our fractal competition. Now you can create wonderful fractals of your own!**

PLUS **● *Two* comprehensive raytracing programs – create realistic pictures and animations ● A *complete* puzzle game – master the intricacies of Penguin management! ● *STOS* blitter extension – add it to *STOS* and take control of your STE blitter chip ● Self-affining pattern generator (no, really) – create leaves and trees ● *and more!***

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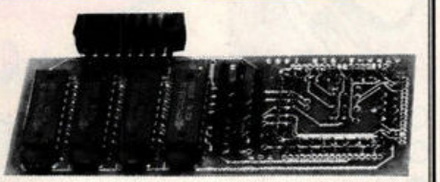

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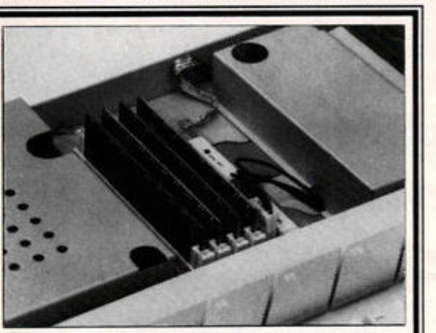

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Again, Chris Lloyd leads you barefoot through the Cover Disk

What's on Cover Disk 33?

LEANDER – A complete, playable level from Psygnosis' new arcade romp

WRITE ON – Runnable "Quickstart" version of the word processing program, complete except for print options. The full package is on the second disk – see page 16.

QRT – Powerful and comprehensive raytracing program to create glorious pictures

PEARLE – Create raytraced animations

KRASKA – The fractal competition winning generator of those wacky number pictures

CREATE – Organic-looking leaves and trees out of thin air

PENGUIN – *Complete! Exclusive!* An addictive and infuriating puzzle game featuring those small waddling birds

***STOS* BLITTER EXTENSION** – *STOS* becomes even more powerful with a complete set of new commands that enable you to get at that blitter

ASSEMBLY SOURCE CODE – Handy source code for writing Desk Accessories and displaying *Degas* pictures

SEQUENCER ONE SONG – Groove along to our *Sequencer* tutorial

GALLERY WINNER – The stunning winner from our *Canvas* competition

● One of the landscape's less welcome surprises – spikes shoot out of the ground right up into – er, the air. So, don't stand over the top, don't pour boiling water over your head and don't stand in front of fast-moving vehicles shouting "I wonder if this is, in some way, hazardous to my health."

● You have the heart of a lion and the name to prove it. It's just as well, really, because there are these nasty little bats to get past and this wacking great ball and chain that thumps the living daylights out of you.

Leander

BY: PSYGNOSIS
MACHINE: ALL STs
RESOLUTION: LOW ONLY
FOLDER: LEANDER
FILE: LEANDER.TOS
GET STARTED WITH: LEANDER.TOS

Do middle-earth heroes ever get the chance to relax? Imagine: just as you have chopped up the leader of ultimate evil, gone home and put your feet up with a nice cup of cocoa, some useless princess goes and gets herself kidnapped. Again!

Leander is a rescue-the-girlie/quest-against-all-odds leap-'n'-slash. Control is by joystick – push the stick upwards to jump. On the Cover Disk is a complete playable level from the forthcoming new release from Psygnosis. Get it loaded and start leaping!

● Powered-up and fizzing with energy, you can explode and take out everything near you. Hold down the <Fire> button, push the joystick down and wait for the bar at the bottom of the screen to make like a DNA molecule.

● As in all good heroic quests, you don't meet anybody remotely pleasant, so it's jolly good beatings all round – no questions, no excuses.

● See that chest? Give it a tap or two. It vaporises and it leaves behind a goodie.

For details of this issue's spectacular second Disk, see page 16.

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EVERYTHING YOU *REALLY* NEED TO KNOW BEFORE YOU BEGIN

Protect your investment

To keep your Cover Disk absolutely safe, keep it write-protected by moving the little black tab so you can see through the hole. Nothing can now be written to your Disk, so there's no chance of you accidentally writing over or deleting any precious data. This also keeps your Disk completely safe from viruses. The Disk is guaranteed virus-free, so don't take any chances.

Read Me, Read Me!

Space on the Cover Disk pages is limited, so you may often find text files on the Disk with more information. These have the file extension DOC – the three letters after the full stop. It's always a good idea to read these for more information on the program. Just double-click on them and select Show to display the text on-screen. If you find that half of it disappears off the right-hand side of the screen when you read them in low resolution, then change to medium resolution and try again.

Back Me Up!

To keep your prized Cover Disk safe you should back up the disk, so if anything should go horribly wrong you've still got the original.

Because of the special disk format you can't do a direct disk to disk copy – you can't just drag the Floppy Drive A icon over the Floppy Drive B icon. So here's what you do. Each Cover Disk holds nearly 800K of goodies, so you'll probably need two blank disks to copy everything onto. Take a freshly formatted disk and copy across all the files, as follows.

1. Remember to write-protect the Cover Disk first. Put the Cover Disk into drive A. (If you're lucky enough to have two drives, put your back-up disk into drive B. If not, just carry on.)
2. Double-click on the drive A icon to open up a window. Now drag one of the folders to the drive B icon. If you have just the one drive, your ST tells you when to swap disks.
3. Keep copying folders like this, one by one, until your ST tells you there isn't enough room left on the new disk. When it does, re-copy the last folder (the one you were copying when you got the "disk full" message) and all the remaining folders onto your second blank disk. Job done!

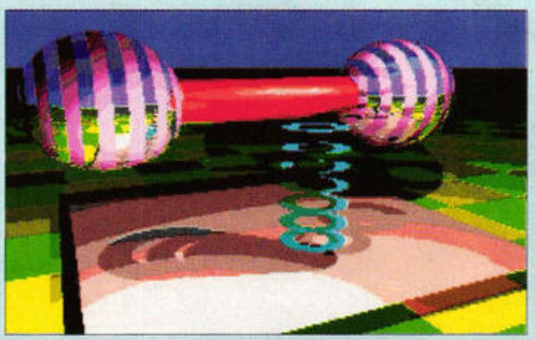
● **Note** that some programs are compressed to fit on the Disk and cannot be run directly from it. Follow the instructions in these Cover Disk pages and everything comes up roses.

Still Single?

This month *ST FORMAT* switches to double-sided disks. If you are one of the few ST owners with a single-sided internal drive and no external drive, then you're out of luck. We did give you plenty of warning. Single-sided drives are now obsolete, so it is well worth upgrading. Replacement drives are cheap and easy to fit. At a stroke you can double the storage capacity of your disks. We covered fitting new internal drives last issue – turn to page 78 to order it if you missed it.

QRT

BY: STEVE KOREN AND ROBERT BARNHART
MACHINE: ALL STs
RESOLUTION: LOW ONLY
FOLDER: QRT
FILES: QRT.TOS, QRT_DOC.DOC, QRT_ST.DOC
READ: QRT_DOC.DOC, QRT_ST.DOC
TO GET STARTED: SEE BELOW



● **Raytracing is a method of rendering a three dimensional world with realistic light properties. From a mound of complicated maths come beautiful images like this.**

Raytracing is a mathematical way of producing horribly realistic pictures without ever actually drawing anything. The world is defined as a series of objects with various properties. Add in a light source, the ground and the all-important viewing position and your ST does the rest. The results are stunning. *QRT* is a powerful program which can produce images of all sorts of shaped objects – you can even add patterns to surfaces. Because it's so large we've had to archive it. Archiving is a method of compressing data so we can fit even more goodies on the Cover Disk but you have to de-archive it. To do this, get a blank formatted disk and copy the program QRT.TOS onto it. Now double-click on it and, as if by magic, it decompresses itself. You now have a working disk with all the *QRT* files on it. There are two meaty DOCs to read that go into all the ins and outs of raytracing and *QRT*. Turn to page 56 for our special feature on raytracing and a quick tutorial on *QRT*.

There are eight example input files ready to be rendered on the Disk. Double-click on *QRT* and up pops a dialog box for you to enter parameters into. You need to enter the aspect ratio and which example you want to produce. For example, to render the picture Mirrors you need to enter "-a 0.625 mirrors." Drawing can take several hours, so a few tea breaks are in order.

Pearle

BY: ALLEN KING
MACHINE: ALL STs
RESOLUTION: LOW ONLY
FOLDER: PEARLE
FILES: PEARLE.PRG, PEARLE.INF, PEARLE.DOC
READ: PEARLE DOC
GET STARTED WITH: PEARLE.PRG

● ***Pearle* renders its final creations as *Degas Elite* files, making editing a cinch. You can load then straight into an art program like *Canvas* and play about with them.**

Cor blimey! It's more of that raytracing gubbins – creating them sexy pictures again, innit? *Pearle* can create sequences of pictures which can then be animated. Objects can bounce around in a realistic gravitational field or be given velocity. Copy PEARLE.PRG and PEARLE.IN to a blank disk and run the program. Rendering the full sequence is intensive and takes up to six hours or so. The pictures are built up on-screen – at first very roughly and then with increased detail. *Pearle* takes its description of the world as a plain text file called PEARLE.IN. There is a sample input file on the Disk. The balls can have different optical properties, lighting effects and viewing perspectives. The configuration file looks daunting but isn't really that difficult. The best place to start is to load the supplied file into your word processor, fiddle with a few parameters, then, using *Pearle*, check out the results. Details of the operation and input file are in the document PEARLE.DOC on the Cover Disk – and there's more on page 56.

Raw to Spectrum Convertor

BY: ROBERT BARNHARDT
MACHINE: ALL STs
RESOLUTION: LOW AND MEDIUM
FOLDER: QRT
FILES: RAW2SPEC.PRG, RAW2SPEC.DOC
READ: RAW2SPEC.DOC
GET STARTED WITH: RAW2SPEC.PRG

***QRT* produces screens** with a massive 16 million colours. To display that sort of screen takes a powerful piece of kit. To enable you to view these screens on your ST, they have to be converted into more manageable 512-colour pictures. First, use the fileselector to pick your input file. Pictures can be dithered – sometimes they look much better, sometimes not – it's worth experimenting. You're then asked if you want to use "register 15." Unless you are going to be loading them into *Spectrum 512* to edit them, use register 15 – you get a few extra colours. After a quick preview of the final result, you can save it or convert again using a different dithering method. You can now view your masterpieces at will using *Spectrum Slideshow*.

Spectrum Slideshow

BY: ANTIC SOFTWARE
MACHINE: ALL STs
RESOLUTION: LOW ONLY
FOLDER: QRT
FILES: 512:SHOW.PRG
GET STARTED WITH: 512:SHOW.PRG

As the name suggests, *Spectrum Slideshow* enables you to gawp at those flashy 512-colour pictures. Simply run the program and click on "Show all pictures." You are then asked in which drive to search for pictures. Click on "A" if they're in your ST's internal drive. Couldn't be simpler.

→

Next issue: yet another *complete* package is yours! See page 63

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Blastram

BY: GARETH POPLE
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: PEARLE
FILES: BLASTRAM.PRG, BLASTRAM.DOC
READ: BLASTRAM.DOC
GET STARTED WITH: BLASTRAM.PRG

Right, you have created a masterful sequence of raytraced pictures with *Pearle* – now what? *Blastram* is a swish slideshow that can load all the sequences in one go. The screens need to have the same first five letters as their name, and the last three numbers from 000 to 999. Select Fast Load and type in the first five letters. *Blastram* then loads the lot in. Use Set Start/End from the Set menu and set the delay between each frame using Set Pause in fiftieths of a second. Click on Animate from the Options menu and off you go. Click on Repeat from the Options menu to toggle between looping from start to finish and back again, or repeat the sequence from start to finish. And that's not all. *Blastram* can be used to display any picture or sequence of pictures in any resolution. Full background information is in the text file BLASTRAM.DOC, so take a gander at that first.

Canvas compo winner

BY: PAUL KELLER
MACHINE: ALL STs
RESOLUTION: LOW ONLY
FOLDER: GALLERY
FILE: REPTILE.CPT
TO GET STARTED: SEE BELOW

When we gave away the complete version of the *FORMAT* Gold winning art package *Canvas* with the stunning January issue of *STF* (number 30 to its friends), we ran a competition for the best picture. From a mound of jiffy bags emerged this wonderful beast. Load up *Canvas* in low resolution and load him in. Turn to this issue's Gallery on page 82 for the inside info on how this little scaly one was created. If you haven't got *Canvas*, you missed out on a winner – turn to page 78 for the *STF* back issue service.

● With the help of the most excellent *Canvas* art program and our step-by-step guide, you should have no trouble in knocking out a competition winning picture like this in, oh, about five seconds. Maybe.

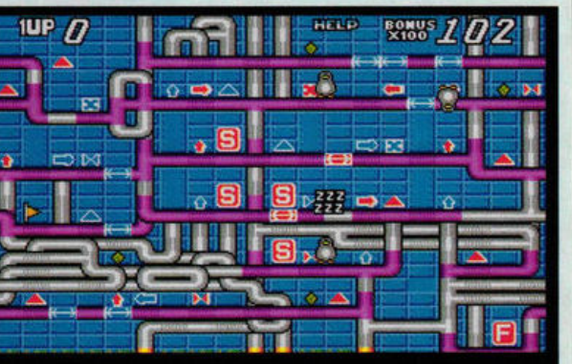
Penguin

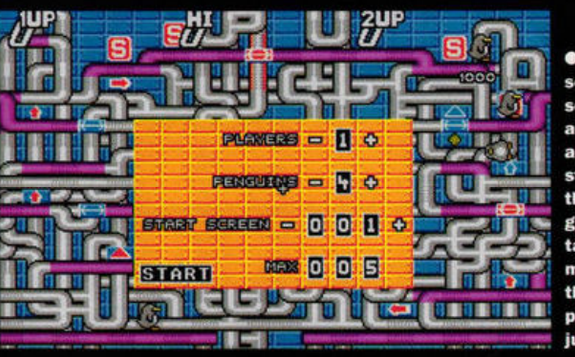
BY: B WARE
MACHINE: ALL STs
RESOLUTION: LOW ONLY
FOLDER: PENGUIN
FILES: A,R,EXT_PEN.PRG, FASTRAMD
TO GET STARTED: SEE BELOW

Fancy a job as a penguin guardian? Be warned! It's not easy – the dim little blighters just wander around running into all sorts of trouble. Your mission – should you be foolhardy enough to accept it – is to shepherd the beasts to the Finish icons on each level. The Cover Disk version has been specially written for us so it can fit on our packed Disk. *Note that you can't run the game directly from the Cover Disk.* Double-click on EXT_PEN.PRG and insert a formatted disk into the drive when prompted. Make sure there's nothing important on that disk because everything on it gets zapped. After a neat bit of jiggery-pokery you've got an auto-booting *Penguin* disk. Press any key and your ST resets and the game begins. Just turn your ST on with this disk in the drive any time you want another bash.

You control the penguins' waddlings by moving icons about with the mouse. Click on a red and white icon to pick the icon up. You can put it down again on any of the icons receptors – seen as white outlines in the icon's shape. Now comes the tricky bit – trying to work out the safe route through the maze of pipes. Just when you think you've got it sussed, the penguins go and fall off the end into some new hazard. It's enough to drive you completely hatstand.

● Level Four and things are starting to get a little tricky – not to say damned hard. One penguin seems to have dropped off to sleep for a moment, giving you breathing space. Another one has wandered off into danger – if you don't save him pretty sharpish, it's Game Over time, dude.





● The main selection screen. There are five levels and you can start on any of them. One penguin is fairly tame, but try managing four of them and your patience might just get bent.

EVERY WHICH WAY BUT THE WAY YOU WANT

The secret to *Penguin* is planning and quick mouse response. Underneath its mild-mannered exterior lies a manic puzzle game.

The start – your little birds appear here

They tumble through the air in an upward type of way

If they run into this they're teleported at random to one of the starting points

A grand for collecting this number

They go this way

This sends them to sleep until you grab the icon

The bridge – span those gaps before penguins get there

Penguin soup or acid or something – if they land in it they're history

They go that way

If they waddle into this icon and you don't rescue them pronto, it's bye bye to one penguin

Points city every time a penguin goes past

The finish – the goal, the end, the final destination, the icon with an "F" on it

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● *STF* made up from smaller *STFs* which are, in turn, made from even smaller ones. That's self-similarity for you! By pressing the mouse button, you can stop the drawing and change the colour. Now click on Continue and you get a multi-coloured effort.

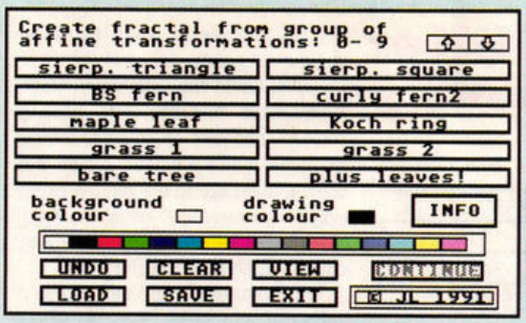
● *Create* runs in all resolutions. Lucky owners of Atari's outstanding SM124 high resolution monitor get superbly detailed results.

Create

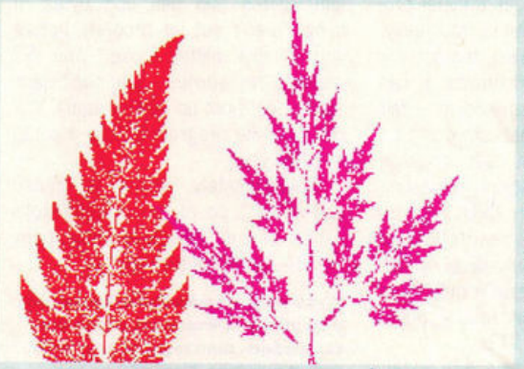
BY: JONATHAN LAWRENCE
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: CREATE
FILES: CREATE.PRG, CREATE.DOC, CREATE.RSC
READ: CREATE.DOC
GET STARTED WITH: CREATE.DOC

Look at a tree, squint a bit and it looks rather like a leaf. Take a leaf, hold it up to the light and it looks a bit like a tree. Right, that's enough mucking about. Now, about the program. *Create* draws "self-affine" fractals – that is, pictures made up of smaller versions of themselves. The smaller versions are also made up of even smaller versions of themselves and so on, off into infinity. *Create* has 38 of these affine transformations pre-programmed into it, from realistic trees and leaves to the classic Koch ring. Completed piccies can be saved as *Degas Elite* files and used in your own artistic creations. You can also load in a *Degas* screen and draw over the top of it.

If you want to get into programming these yourself and fancy a wander through the source code, then you can send off for the code plus some examples from the author – see the text file CREATE.DOC for details.

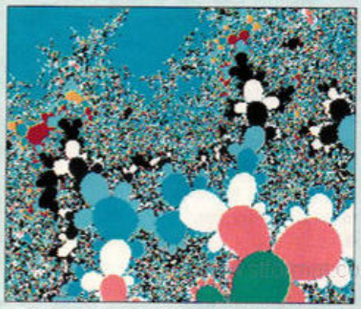


● *Create's* main screen. Just click on one of the fractals and off it chugs. Use the little arrows at the top of the screen to access new sets of fractals. Click on one of the colours and you can set the drawing or background colour.

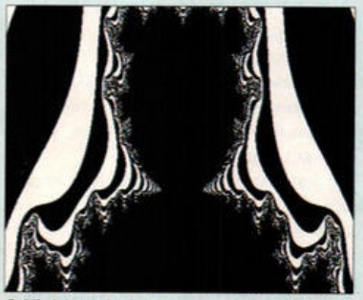


● Leaves? Hey, no problem. *Create* is a doddle to use – everything is mouse-driven. Full instructions are in the text document CREATE.DOC. Double-click on it and select Show to read it or Print to print it – but make sure you have a printer attached first!

● It's remarkable how mathematically generated images echo the creations of Mother Nature herself. Select "bare tree" to draw the trunk and branches, then change the drawing colour and select "plus leaves."



● You know how the Mandelbrot set is named after Benoit Mandelbrot? Well, this is a sine set. It's, er, named after a Mr Sine, who, um, invented it. (If you can explain this better – keep it to yourself. Nobody likes a smartarse.)



● High resolution gives a beautifully detailed screen. This is a third order Mandelbrot set. *Kraska* runs in all resolutions and enables you to play around with the parameters to your heart's content. There are four example parameter files to get you going.

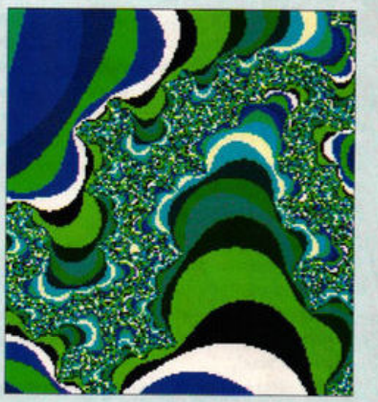
Kraska

BY: ROBERT SAMUEL
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: KRASKA
FILES: KRASKA.DOC, KRASKA.PRG, KRASKA.RSC
and four KPR examples
READ: KRASKA.DOC
GET STARTED WITH: KRASKA.PRG

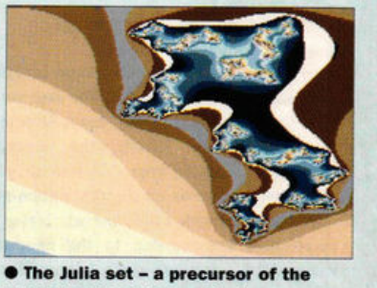
Imagine a mystical-looking picture of swirling colours. Now imagine getting a microscope and zooming in on it only to see another equally detailed picture. Zoom in further and there's yet another swirling vista. No matter how far into the picture you go, it's still detailed. Zoom in on another point and you get a completely different picture. It's a fractal – that is, a picture mathematically formed from simple equations using complex numbers. Complex numbers are ones that don't exist, like the square root of –1. Strange but true, folks. Over the years, a number of mathematicians – including the famous Mr Mandelbrot – tried to get their heads around the behaviour of these numbers and used various recursive equations to create the wonderful world of Disney – sorry, fractals.

Back in issue 28, we ran a fractal special and gave you a Mandelbrot generator on the Cover Disk. We challenged you to write a better generator and a good few of you did. This month, we present the winner. Not only can it handle the Mandlebrot set, but Julia, Newton, logarithmic and sine sets, too. Pictures can be saved in *Degas Elite* format along with an appropriate parameter file. There's no room on the Cover Disk to save your work, so copy the file to another disk first.

Kraska works in all resolutions – low resolution gives glorious multi-coloured affairs. Higher resolutions are, of course, more detailed. Press the mouse button to get past the loading screen and you're presented with a blank screen and a menu bar. Select the Type menu and choose one of the fractals, then select Draw from the Action menu. After a minute or so, you have a fractal. As you can see, it's rather small. The process is very intensive and a full screen picture can take ages. So that you can check what the picture's going to look like, *Kraska* enables you to set the size of the finished screen. Select Parameters from the Edit menu and click on the draw area numbers to change them to full screen – 320 x 200 pixels if you're running in low resolution. Now try zooming in on an interesting section. The results are seriously cosmic. Read KRASKA.DOC for a detailed explanation of all the program's functions. Now get fractalling!



● A Mandy in all its glory. Not so much a picture as a visual manifestation of an equation. With *Kraska*, you can zoom about in 12 different variations on the fractal theme.



● The Julia set – a precursor of the Mandelbrot set. A graphical representation of a complex number repeatedly squared and added to itself. Maths can be beautiful, too.

→

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STOS Blitter Extension

BY: ASA BURROWS
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: STOS
FILES: BLITTER.ECG, BLITTER.EXG
TO GET STARTED: SEE BELOW

The blitter is a bit-block transfer processor – doesn't sound too sexy, does it? Don't be fooled, though – it has some really good moves. It can shift blocks of data around at a fair old whack independent of your ST's main processor. You set it going transferring data in various interesting ways, while the main CPU gets on with its own stuff. This results in huge increases in speed whenever graphics are involved. Originally only fitted to Mega STs, they became standard with the arrival of the STE.

As with last month's STE extension, you need a copy of *STOS BASIC* to use the blitter extension. Copy the BLITTER.EXG file to the *STOS* folder of your language disk and the BLITTER.ECG file to the COMPILER folder, if you have that too. Use back-up copies – not your original disks. Now run *STOS* and up comes a little welcoming message to tell you the extension is successfully installed. Right. Now you're kitted-out for some seriously fast memory transfers.

Programming with the blitter is not easy – it helps to know about logic gates and bits and bytes. If things aren't set up properly before you let the blitter loose, your ST crashes. No worries – you can't damage it. Just boot up and try again. You did save the program before you ran it, didn't you?

Unfortunately, space is limited and we can't go into an in-depth explanation of the 24 clever new commands. But that's them below.

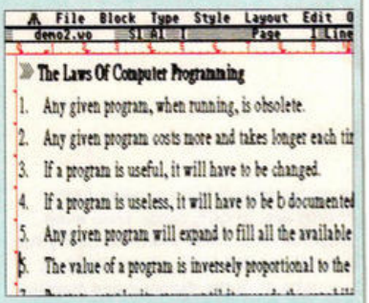
If you want a comprehensive manual with plenty of examples and technical support, then register your copy with the author. Send £10 to Asa Burrows, 67 Malvern Road, Leytonstone, London E11 3DJ.

Write On

BY: COMPO SOFTWARE
MACHINE: ALL STs
RESOLUTION: MEDIUM AND HIGH
FOLDERS: WRITE ON, AUTO
FILES: LA.PRX, POOLFIX4.PRX, DEMO1.WO, WRITE_ON.PRG and WRITE_ON folder with 26 font and configuration files
GET STARTED WITH: WRITE ON.PRG

On this issue's spectacular second Disk is the complete word processing program *Write On* – previously a 50 quid job. Unfortunately, it can't be run direct from the Disk. To give you a taste of the program we've put a runnable version onto the first Disk. The only drawback is that there are no printer fonts installed – for these you need to run the full version.

Just double-click on WRITE_ON.PRG in the WRITE_ON folder and you are ready to process those words. Take a look at page 16 for a rundown of the features and how to get at them. Because of some slight bugs – otherwise known as "undocumented features" – in Atari's operating system, *Write On* needs a couple of patch programs to work. "Patch programs" are little programs that correct bugs by patching in the correct bit of code. Both the patch programs have been put in an AUTO folder. An AUTO folder holds programs that are automatically run when you turn on your ST. To prevent them running if they're not needed, they have been renamed with the extension .PRX. If you need one of them, simply rename it .PRG using the Show Info option on the Desktop menu. If your ST has an early version of TOS, you need the program LA. If you check the Desktop Info menu and are given a copyright date of 1985, you have a very early version of TOS. If you have a STFM and get the dates 1985, 86, 87, 88, or 89, you have TOS v1.4 and need the patch program POOLFIX4. See page 16 for full details.



● *Write On* is a powerful and flexible word processor – the main Cover Disk has a instantly runnable version. The package used to cost a smallish fortune and now it's stuck to the front of *ST FORMAT*. What a bargain, eh?

THE NEW *STOS* BLITTER COMMANDS

● The simplest command uses the blitter to clear the screen in a super-fast blittery kind of way.

```
BLIT CLS screen
BLIT CLS screen,op
```

Screen can be a screen address, such a physical screen or a memory bank which has been reserved as a datascreen. You can use op to specify what to fill the screen with. Using 0 fills the area of memory with 0s, which translates into the first colour, usually black, and 1 fills it with 1s – the last colour of your palette.

●

```
BLITHALFTONE↵
    pat1,pat2,,,,,,,,,,,,,pat16
```

The ↵ symbol means no line return yet. These enable you to set up a 16 x 16 half tone pattern. It's easiest to enter the patterns as binary words, so each digit represents a pixel.

The blitter can throw areas of screen memory around without any problem – rather like the screen copy command, but quicker.

●

```
BLIT COPY source, destination
BLIT COPY source, destination,op
BLIT COPY source, x1,y1,x2,y2,↵
destination,x,y
BLIT COPY source, x1,y1,x2,y2,↵
destination,x,y,op
```

Source and destination can be screen addresses or memory banks. The first version does a straight screen copy. Alternatively, you can specify the screen coordinates, copying from x1,y1 to x2,y2 and plonking it down on the destination at x,y. As usual with *STOS*, the x1 and x2 coordinates get rounded to the nearest value of 16 – you can place it anywhere, though. The optional op parameter can range from 1 to 14 and sets the type of copying to do.

```
1 source AND destination
2 source AND NOT destination
3 source (a straight copy)
4 NOT source4 AND destination
5 destination
6 source XOR destination
7 source OR destination
8 NOT source AND NOT destination
9 NOT source XOR destination
10 NOT destination
11 source OR NOT destination
12 NOT source
13 NOT source OR destination
14 NOT source OR NOT destination
```

What's all this AND NOT stuff? Er, it's boolean algebra and enables weird and wonderful types of copying. XOR does a transparent copy rather like Paste from a paint package. AND changes the colours about. Experiment for yourself – all sorts of swishy effects are possible.

● Shifting screens is only part of it. This set of commands enables you to get at the real power of the little beastie.

●

```
BLIT SOURCE ADDRESS↵
address
BLIT DEST ADDRESS address
BLIT SOURCE X INC inc
BLIT SOURCE Y INC inc
BLIT DEST X INC inc
BLIT DEST Y INC inc
```

The first two commands set the memory address of the source and destination. The value is rounded to an even number. The INC commands set the the increment to the next word in bytes. The blitter copies one word at a time – each word is made up from two bytes. Set BLIT SOURCE X INC to 2 and it does a direct copy. Set it to 4 and you only get every other word. DEST X INC does the same trick with the destination. The Y INC commands set the line increment in the same manner.

●

```
BLIT X COUNT count
BLIT Y COUNT count
```

These two set the number of words to be read on a line and the number of lines.

●

```
BLIT ENDMASK1 mask
BLIT ENDMASK2 mask
BLIT ENDMASK3 mask
```

These set the mask for the destination data. ENDMASK1 sets the mask for the first word; ENDMASK3 sets the last word; the command in the middle sets the mask for all the words in the middle. The mask is set as a binary word, the same as in the set line command. If you want a pinstripe effect set the mask to %1010101010101010.

●

```
BLIT HOP hop
```

Sets the operation you want to perform with the halftone pattern you have set. The hop parameter can take four values:

```
0 all ones
1 half tone
2 source
3 source and half tone
```

If you don't want to use the half tone, set BLIT HOP to 2.

●

```
BLIT OP op
```

This sets the logical operation of the data being copied. The operations are the same as for BLIT HOP with two options:

```
0 all zeros
15 all ones
```

●

```
BLIT H LINE number
```

This command sets the line number to start the half tone mask when it's being used. The number parameter ranges from 0 to 15.

●

```
BLIT SKEW skew
```

This command sets the the number of bits to be shifted to the right before being copied to the destination address. The skew value ranges from 0 to 15.

●

```
BLIT SMUDGE smudge
```

If smudge is set to 1, then the data set in BLIT SKEW is used as the BLIT H LINE number. If it's set to 0 then it isn't, so phooey to you.

●

```
BLIT NFSR n
BLIT FXSR n
```

NFSR stands for No Final Source Read. When n is set to 1, the last source read on every line is not performed. FXSR stands for Force Extra Source Read. When n is set to 1, an extra source read is performed on every line.

●

```
BLIT HOG
```

This one puts the blitter chip in command of your ST, taking all the processing time. It stops all interrupts, apart from a few important system ones. Avoid using this because *STOS* has its own interrupt routines and it doesn't like it.

●

```
BLIT IT
```

This is it! This command sets everything going. You must make sure you have set up all the relevant details or else the system is almost certain to crash.

●

```
x=BLITTER
```

This checks to see if a blitter is fitted. If a 1 is returned, you have one of the little beauties fitted. A 0 is returned if you don't.

●

```
x=BLIT BUSY
```

The last command. The blitter runs alongside the central processor. You can do something else while it's doing its tricks unless you have used the BLIT HOG command. The blitter is damn quick, so you're unable to do much before it has finished in interpreter mode. Once compiled, though, things go a lot faster. You could set the blitter off copying data, check your variables or do the sprite stuff, then check to see if he has finished before carrying on.

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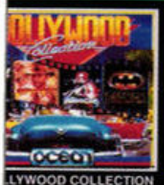
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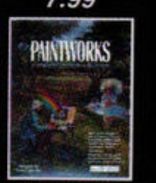
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Assembly source code

BY: ROGER PEARSON
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: ASSEMBLY
FILES: ACCHEAD.S, DEGAS_LD.S
TO GET STARTED: SEE BELOW

To go with this month's wad of tips for all you assembly language programmers, we bring you two juicy pieces of source code. Load them into your favourite assembler package and off you can jolly well go. ACCHEAD.S is the header used to create a Desk Accessory and DEGAS_LD.S is the necessary code for loading up and displaying those precious *Degas* pictures. Full techie explanations of what you can do with all this are on page 50.

ST Groove MIDI file

BY: VIC LENNARD
MACHINE: ALL STs
RESOLUTION: MEDIUM AND HIGH
FOLDER: SEQ_ONE
FILES: STGROOVE.ONE
TO GET STARTED: SEE BELOW

Stuck to the front of the really rather blindingly good January issue of *STF* was the complete working version of the MIDI sequencing package *Sequencer One*. This month we start an in-depth look at squeezing the most from it – turn to page 54 for that. To go with the blurb, we have a sample song for you inside the SEQ_ONE folder. Load it into your copy of *Sequencer One* and off you bop. If you missed the stonking issue 30, better turn to page 78 first.

THE COVER DISK WANTS *YOU*

We want *your* software – games, utilities, demos – anything good, original and short. If you've written anything worthy of the *ST FORMAT* Cover Disk, send it with this form and full documentation to: Chris Lloyd, *ST FORMAT* Cover Disk Editor, 30 Monmouth St, Bath, Avon BA1 2BW. Then please be patient: we get heaps of submissions, and we try to give them all a fair testing!

Name _____

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On a separate sheet, explain concisely what the program does and what's great about it.

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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 _____

PROBLEMS? RELAX!

Every month we duplicate tens of thousands of disks. Inevitably a few are corrupted – you can't open a window at all, or there's nothing in it, or the folder names are gobbledegook. It doesn't happen often, but if you're unlucky, sorry. We guarantee you a free replacement. Just send your disk to: *ST FORMAT* April Disk Returns, Discopy Labs, Unit A, West March, London Road, Daventry NN4 4SA. *Note* that only Discopy can help you – we have no supplies of Disks in Bath.

● Got a problem with one of the Cover Disk programs? Make sure you've read all the relevant Cover Disk pages and any document files on disk. Try consulting your ST Owner's Manual – that might have the information you need. *Check that you don't have a single-sided drive (one older than 1988) – they can't read new* STF *Cover Disks.* Still got a problem? Then give us a ring on Wednesday. We'll do our best to sort it out – but when you ring, try to have your ST nearby.

***ST FORMAT* Cover Disk Hotline**
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● *Please note: this line is for Cover Disk problems only.* If you have any other queries, write to us at ST Answers, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. We'll reply in the pages of *STF* as soon as space is available.

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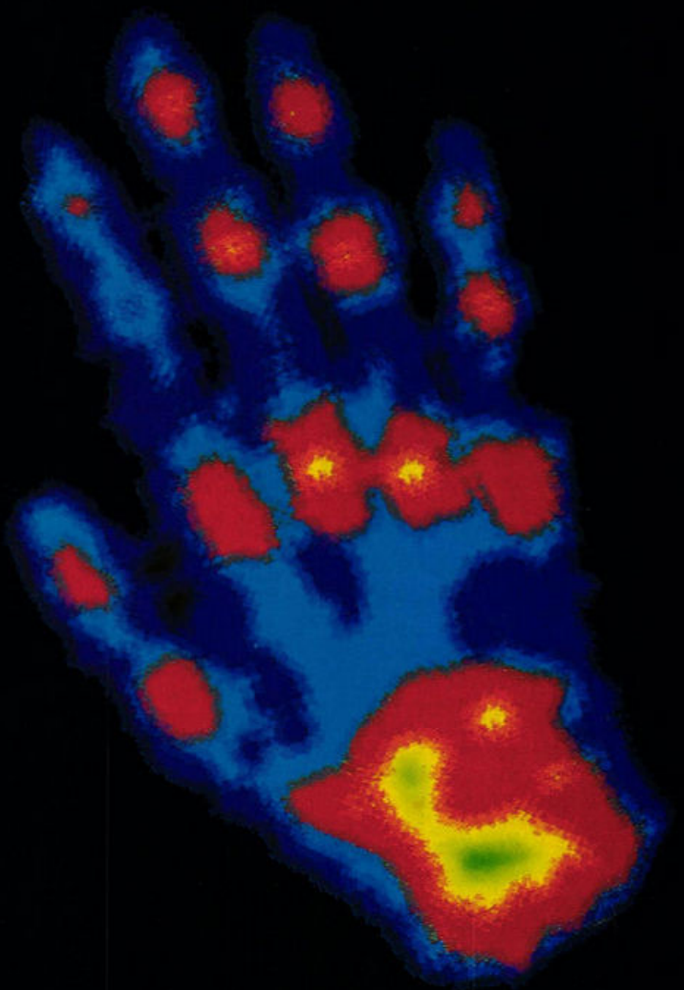

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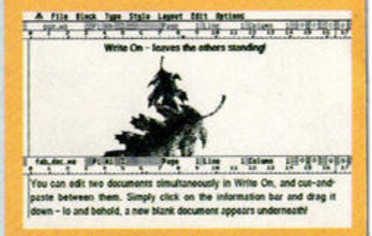
Write On

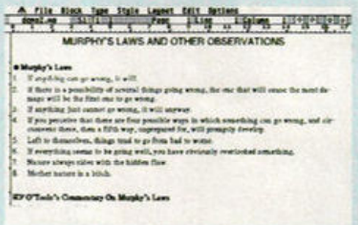
A multi-font word processor with graphics and macros – all yours! Tim Anderson begins a two-part guide to creating professional-looking documents with *Write On*



● **Two document editing is a snap in *Write On*. Simply drag down the information bar to reveal another document underneath.**

Write On is no ordinary word processor. For a start, you're not limited to the fonts that happen to be in your printer: *Write On* can load up to 20 GEM fonts – the standard on the ST – for total flexibility and variety. Then, the program gives you the facility to load graphics into your documents and even resize them. Plus, you can use macros which automate any sequence of keystrokes. And there's the "Paragraph layout" facility (also known as "paragraph tagging") – a feature more familiar to users of high-end desktop publishing packages than word processors. Can't wait to get going? Read on...

THE QUICKSTART VERSION



● **Run *Write On* and load the file DEMO2.WO from the second Cover Disk. This is what you should see...**

On the main Cover Disk, there is a version of *Write On* that can be run straight from the disk. Try it now – making sure that you are in medium or high resolution. This version of *Write On* is fully functioning except that you cannot print, so you can learn all about *Write On* without making the full installation. You can load the demo files DEMO-1.WO (on both Disks) and DEMO2.WO (from the *Write On* disk) to see some of the features. It's best to load these from drive B, even if you only have one drive, and don't change disks unless the system tells you to. When you're ready to install the full version, make sure you start from scratch – don't try to update the "Quickstart" copy.

READY TO INSTALL?

❶ Preparation

If you have a hard drive, find a partition with at least 1.5MBytes free space.

If you are using floppy disks, format one double-sided disk and label it "*Write On* Working Copy." Find another double-sided disk and label it "*Write On* Master Disk Backup." This backup disk doesn't need to be formatted.

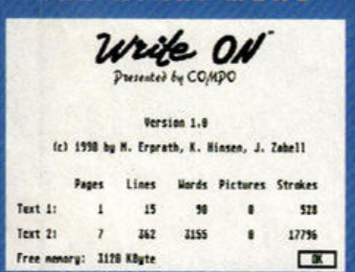
❷ Making a backup

Place the *Write On* disk in drive A and double-click on WO_HELP.PRG. Under the File menu are three options. Select the first option, Copy Disk. This makes a backup of the *Write On* master disk to another floppy. When the program asks for a blank disk, use the disk you've labelled "Backup," which does not have to be formatted. WO_HELP formats the disk for extra space – it's impossible to

WRITE ON – A GUIDED TOUR THROUGH ITS

Almost all *Write On's* features are found on the menu bar. Here's a tip for all you keyboard speed freaks: everything can also be controlled by key combinations. If you drop down a menu with the mouse, you'll notice a capital letter to the right of each option. To choose the option from the keyboard, press <Control> together with the first letter of the menu name and then the letter of the option required. For example, <Control>-<F> followed by <S> saves the file you're working on to disk. *Write On* gives you the best of both worlds – the ease of drop-down menus together with the speed of keyboard combinations – choose whichever suits you.

THE ATARI MENU



● **Lurking in the Desk Menu, the *Write On* option gives full information about your current documents.**

Here's where you find any Desk Accessories you have loaded, as in any GEM program. Also, the *Write On* option displays valuable information about the documents currently loaded, including a word count, and the amount of free memory.

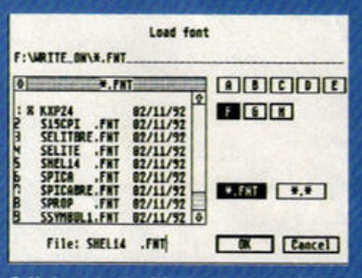
THE FILE MENU

This controls disk operations such as loading, saving and merging files. For an explanation of the printing options, see "Getting it onto paper" on page 18. Mail Merge is an advanced function – all will be revealed in next month's *ST FORMAT!*

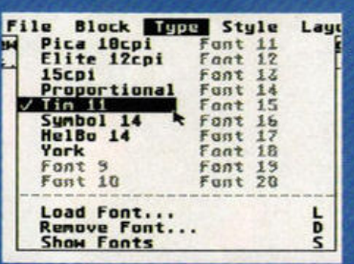
THE BLOCK MENU

Write On's block functions are second to none. Blocks can be selected with the mouse or using the Start and End options – these can be easier where part-lines are involved, or for very large blocks. Once a block is selected, it can be copied to no less than six locations: a choice of five memory buffers, or to a clipboard on disk. You can also delete, move, save or copy the block. The Hide option clears the block selection. To work efficiently with *Write On*, it is important to clear the block with Hide as soon as you have finished with it.

THE TYPE MENU



● **Not content with the standard ST offering, *Write On* comes with its own fileselector. This shows fonts being loaded from disk – only fonts with the S... prefix can be installed.**



● **Once they're loaded, choose from up to 20 fonts in one document. The "Show Fonts" option gives a sample of what the font actually looks like.**

Here's where you select from up to 20 different fonts. You can also load fonts from disk, remove them from a document and from memory or display a sample of type with the Show Fonts facility. To load a new font, choose the Load Font option. Open the WRITE_ON folder using the fileselector, and click on any font with a name beginning "S..." "S" stands for Screen – you don't need to load printer Fonts. *Write On* handles these automatically.

When you click on OK, the font is loaded into *Write On* and appears in the Type menu. To type in that font, simply point and click – or better still, use the Paragraph Layout feature – see page 18.

THE STYLE MENU

Any text in *Write On* can have one of eight styles, such as bold or italic. Here's where you select the one you want.

If a block is selected, the style applies to the block. That's why you need to "Hide" blocks as soon as you have finished with them! If no block is currently selected, the style applies to the next thing you type.

From Layout applies the style set in the current paragraph layout – see the section on layouts on page 18.

THE LAYOUT MENU

You can force your document or paragraph to be reformatted using this menu. It also controls *Write On's* powerful page and paragraph layout functions – see the section on layouts, page 18. You can save all your layouts to disk as a file with the extension .LAY, then load it again later with all your fonts, page and paragraph layouts included. The file WRITE_ON.LAY, in the WRITE_ON folder, is loaded automatically when you run *Write On*.

THE EDIT MENU

The Search and Replace facility, page numbers, and graphic images are all controlled from this menu.

When you select the page number, you can insert the number of either the current page or the following page into your document. A special symbol appears on screen and when printed it's replaced by the correct number.

Select Indent in order to type an indented paragraph. Everything you type after selecting this option uses the next tab stop as the left margin until you cancel the indent by pressing <Return> to start a new paragraph.

THE OPTIONS MENU

Pagination and paragraph formatting can be handled automatically as you work or

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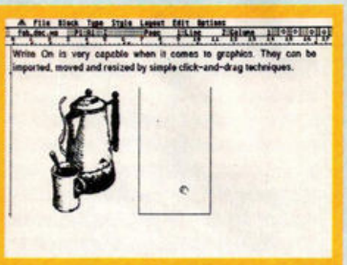
USING PICTURES IN *WRITE ON*

Write On **imports pictures in the IMG format. You can create your own IMG pictures in many paint programs, or by using the *That's Snap* screen capture Accessory supplied (see the panel on page 18). To import a picture, use Load IMG from the IMG menu. When a graphic is loaded, you can adjust it in various ways:**

● Double-click on the picture with the mouse, and the Picture Resolution dialog box opens. Here, you can specify the dots per inch both vertically and horizontally, and, in doing so, adjust the size of the picture. A good tip is to set the resolution to something in proportion with your printer's resolution. For example, on a 24-pin printer 360 dpi, 180 dpi, 120 dpi or 90 dpi would all be suitable. You can also choose whether or not to show the picture on-screen and you can save the image back to disk – useful when you want to move images from one document to another and the original IMG file is not to hand.

● Click with the mouse on the bottom right corner of the picture. Now you can stretch or compress the picture in any direction.

● Click with the mouse on the centre of the picture. Now you can move the picture right and left along the line. For vertical movement, simply adjust the amount of text or the number of line spaces above and below the picture.



● To move a picture to a new destination, click and hold down the left button on the image and drag it.

back up *Write On* to one disk from the ST Desktop.

❸ Installation

Now select the second option in the File menu – Installation. From the Installation dialog box, select the double-sided or hard drive option, according to your system. Now, scroll the list of printers and click on the name of your printer (or a closely compatible one), then click on "OK." The installation program tells you when to insert your blank working disk and when to insert the master disk until the process is complete.The installation uses only drive A.

Because of the amazing feat of compression achieved by the ST Cover Disk team, the *Write On* disk includes both Master Disk 1 and 2 of the normal *Write On* setup. So, when you're asked for Master Disk 2, simply insert the *Write On* disk, or click on "OK" if it is already in drive A.

When installation is finished, select Quit from the File menu to return to the Desktop.

❹ Final Procedure

You haven't finished yet! If you have TOS 1.4 or earlier, then for *Write On* to function correctly you need a new program in the AUTO folder on your boot disk – that is, in a folder named AUTO which is on the disk you use to start up with and is not in a folder itself.

● STs with TOS 1.4 show the dates 1985, 86, 87, 88, 89 in the "About" dialog box on the Desktop. If you have TOS 1.4, you need POOLFIX4.

● If you have an earlier TOS version (dated 1985 or earlier), then you need LA.PRG.

● If you have an STE (TOS v1.6 or higher), you do not need either of these programs.

If you need LA.PRG or POOLFIX.PRG, copy it into the AUTO folder on your boot disk. It's a good idea to copy this AUTO program onto your *Write On* working disk as well: then you can start a *Write On* session at any time by switching on or rebooting with that disk in drive A. Don't forget – never run *Write On* without having run the required program at boot-up time.

Installation is now complete! All that remains is to prepare a new blank disk for storing your stunning *Write On* documents and also to copy the optional *Write On* Desk Accessory, *That's Snap*, onto your boot disk. (See the panel about *That's Snap* on page 18.) Copy the demo files DEMO1.WO and DEMO-2.WO to your document disk and also double-click on the README file, which contains some troubleshooting tips.

To run *Write On*, place the working disk into drive A and double-click on WRITE_ON.PRG. Whether you have one or two disk drives, use drive "B" for your documents. If you have only one disk drive, make sure you only change disks when the system tells you to.

→

FEATURES (AND HOW TO GET AT THEM)

operated manually using the layout menu. Here's where you choose which. There's also an overwrite mode, a dialog box to set preferences including an autosave feature, and a facility for saving and loading sets of macros.

HOW TO RECORD A MACRO

❶ Turn up the volume on your monitor or TV.

❷ Press <Shift> and <Esc> together, then the letter you want to set up to activate the macro.

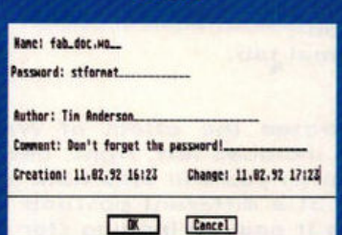
❸ The macro records all your keystrokes (not mouse movements) until you press <Shift> and <Esc> again. It is then saved automatically.

❹ To run the macro, simply press <Esc> followed by the letter you chose in step 2. For more about macros in *Write On*, see part two of this guide in next month's *STF*.

THE PAGE BREAK COLUMN

At the left of the text window is the page break column. Page breaks are shown here by a short dotted line and carriage returns by an even shorter solid line on the right edge. Again, the page break column is controlled by the mouse. Click once to insert a hard page break (one that will never be reformatted – the page always breaks where you have marked). Click and drag down the page break column to keep lines together: this means they will never be broken over a page. You can remove the "keep together" bar by clicking on it with the mouse.

THE INFORMATION BAR



● Sensitive document? What other word processor on the ST has password protection built-in?

Want to edit more than one document at a time? Easy! Click on the information bar – the bar at the top of the text window, just below the menu bar – and drag it down. As if by magic, a second text window appears below the first. Click anywhere in this second window to activate it. Once it's active, all the *Write On* functions such as load or save apply to the new text window.

It's not obvious at first, but there's plenty for the mouse to do on the information line:

● Click on the document title to activate the document information dialog. You can even set a password to protect your document from prying eyes – but just be sure you don't forget it!

● Click on the page layout button (default: P1) to activate the new paragraph facility.

● Click on the paragraph layout button (default: A1) to activate the paragraph layout facility.

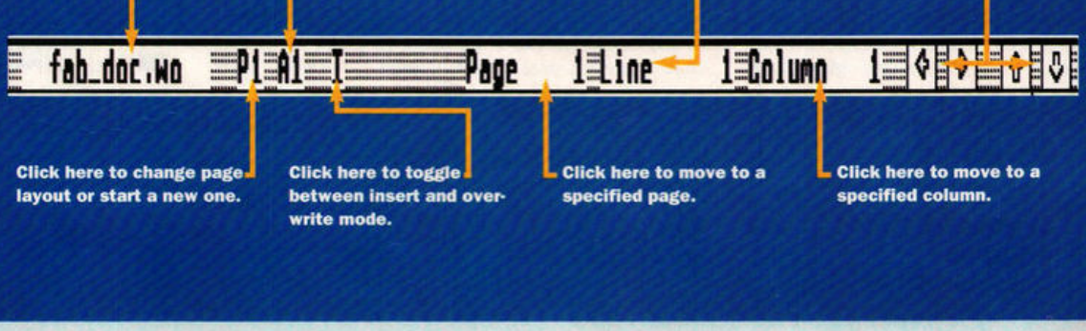
● Click on the insert icon (a capital I) to toggle between insert and overwrite modes.

● Click on the page number to go straight to a particular page.

● Click on the line or column number to go straight to a particular line or column.

● Click on the scroll arrows to move around the text.

Below the information bar is the ruler line. The little black triangles on here are tab symbols. There are left-aligning, right-aligning, centre-aligning and decimal tabs. To place a tab on the ruler, click there. To change a tab to another kind of tab (for example, from left to centre), click on it. Clicking with the left button cycles between left and centre tabs and the right button between right and decimal tabs. To remove a tab, double-click on it. Tabs are only valid for the current page layout – see the section on layouts.



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PARAGRAPH LAYOUTS – THE HEART OF *WRITE ON*

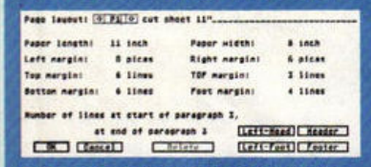
Paragraph layouts are the most powerful feature in *Write On*. Everything you type is "tagged" with the name of a paragraph layout which specifies things like alignment, font and type style, tab and margin settings, and so on. To amend the settings afterwards you don't need to mess around with blocks or rulers: simply change the paragraph layout, and every part of the text which is tagged with that layout is automatically adjusted.

For example, let's suppose you had some headings in your text. This is how you would use the paragraph layout feature:

❶ When you're about to type a heading, click on the New Paragraph Layout button (see diagram). Change the two letter abbreviation to Ah, and click on "OK." From now until you next press <Return>, your text is automatically tagged with the "Headings" layout.

❷ As you type the heading, you find it displayed as bold, underlined text. But suppose, when you finish the article, you decide the headings would look better centred on the page, in bold but not underlined. Click on Paragraph Layout in the Layout menu. Click on the left arrow on the top line of the dialog box, until "Ah headings" is displayed. Click on the button for "Centred" to highlight it, and on the button for "Underlined" to turn it off. Then click on OK.

❸ Now look at your text! Everything tagged as a heading has been transformed to the new style. What's more, you can define your own paragraph layouts – you're not limited to the ones supplied. To start a new layout, click on the Paragraph Layout button on the information bar, and type in a new two-letter abbreviation. *Write On* opens a new Paragraph Layout dialog box for you to edit. With this feature, getting an attractive and consistent layout in your documents is ridiculously easy!



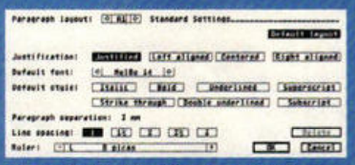
● The page layout dialog box sets up basic page design. You can include several page layouts in one document – separate them by a hard page break.

THE PARAGRAPH LAYOUT RULER

At the bottom left of the Paragraph Layout dialog box is the ruler. It's important to understand how this works. By clicking on the left and right arrows, you can set a number of options:

● L1 – the left margin for the first line in the paragraph

● L – the normal left margin



● Paragraph layouts are the key to getting the best from *Write On*. And they're even easier to use than the similar system in *Timeworks DTP!*

● Tab (left, right or centred) – tab stops

● R – the right margin

All these settings can also be adjusted with the mouse on the ruler bar in the editing window. WARNING: make sure the left and right margins in the Paragraph Layout fit within the settings in Page Layout. Otherwise, your text gets cruelly cut off on the right-hand edge!

THE PAGE LAYOUT

The Page Layout dialog box controls the overall settings for each page. You may have several different page layouts in one document, but, of course, only one per page. Insert a hard page break before each new page layout – otherwise the new layout applies to the whole document. Loading and editing new page layouts works in the same way as for paragraph layouts.

● The units of measurement in the Page Layout can be changed by clicking on them. Cycle between centimetres, inches, and picas or lines. In *Write On*, there are exactly 2.5 centimetres to an inch; the inches themselves are mathematically accurate. A pica is 1/10th of an inch, and a line 1/6th of an inch.

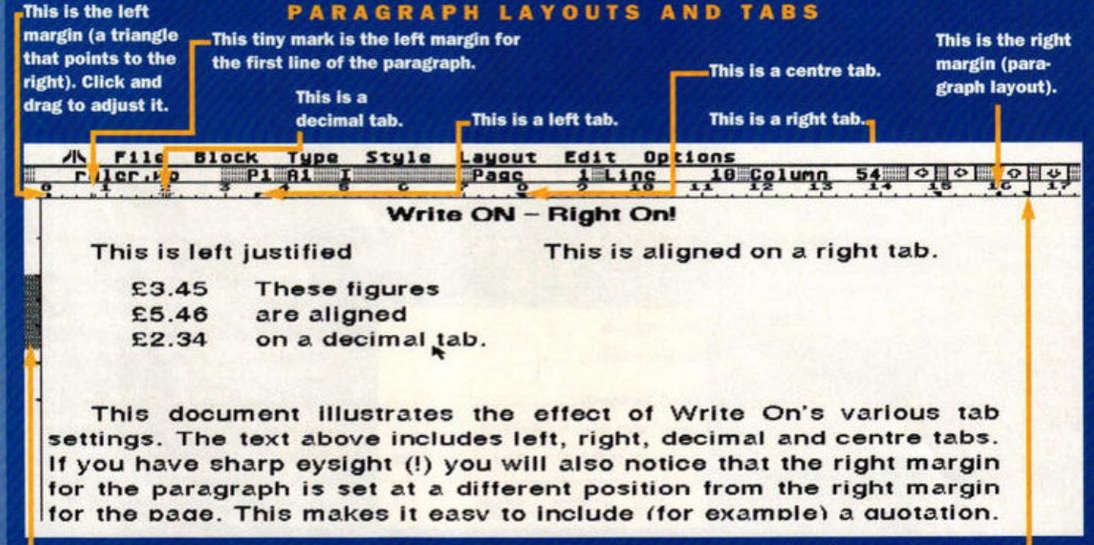
● For continuous stationery, it's important to set the page length correctly. Computer paper is generally either 11 inches long (the default setting) or A4, which is exactly 70 lines.

● Set the margins you need in the page layout, and keep the left margins in paragraph layouts at zero unless you want a special indent. The total line length in the paragraph layout has to fit within the space between the margins in the page layout – got that? Otherwise you lose text when you print!

● The setting for "lines at start/end of paragraph" is an advanced feature which prevents isolated lines at the top or bottom of the page – "widows" and "orphans" in printer-speak.

● To create a header or footer, click on the appropriate button. Then type the required text, using the Page Number facility in the Edit menu if you want. To return to the main screen, select Main Text from the same menu.

PARAGRAPH LAYOUTS AND TABS



The shaded area is a "keep together" mark. The lines next to the mark can never be split over a page break. Click anywhere on the mark to remove it.

The thin vertical line is the right margin set by the page layout. It cannot be adjusted with the mouse.

GETTING IT ONTO PAPER

Printing in *Write On* (full version) is controlled by two options in the File menu:

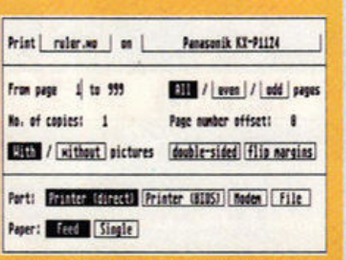
❶ **Printer Type.** Use this to load a printer file from disk (these have the extension .WOP). When *Write On* is installed, it creates a printer driver called WRITE_ON.WOP, which is placed in the WRITE_ON folder. This is loaded automatically by *Write On*, so normally you may not need the Printer Type option at all. You do need it if you have more than one printer or if you have a separate driver for draft and letter quality modes. For further information on printer drivers, don't miss next month's feature on making the most of *Write On*.

❷ **Print.** Use this to obtain the print dialog. Most of the options are self-explanatory, but note the following:

● Select Double-Sided to print the Left Header or Left Footer specified in the Page Layout on even numbered pages. Otherwise, the normal header and footer is printed on every page.

● Select Flip Margins to reverse the space allocated to left and right margins on even numbered pages. This is handy for documents that are to be bound or stapled together, since it leaves a larger space in the "gutter" – a printer's term meaning the inner margin between two facing pages.

● Normally, leave the Port setting on Printer (direct). This prints even graphic fonts and images at a speed that leaves programs based on GDOS – Atari's normal graphic output system – standing. If you have a complex system set up and have problems with Printer (direct), try Printer (BIOS), which uses the standard ST output routines. Modem directs output to the RS232 port, and File saves the printer output to disk for later printing from the Desktop. Be warned: printer files can get very large, especially if graphic fonts are used.



● You can choose from a comprehensive set of print options. These are in the full package on the second Disk.

THAT'S SNAP

That's Snap is a Desk Accessory which enables you to save a snapshot of the screen to disk as an IMG file. First, display the screen you want to capture, and then activate *That's Snap* from the Atari menu. Select OK, and the mouse pointer turns into a cross-hair. Place it at the top left of the section you require, click and hold down the left button, and drag it down to the bottom right. Release the left button to save the image.

You can use *That's Snap* even in programs which don't give access to Desk Accessories! Just press <Alternate>-<Right Shift>-<Help> together to capture your current screen to a buffer. Quit the program you are running and select *That's Snap*. You can then take a snapshot from the buffer in memory.

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Atari set to introduce new ST-compatible machine ● ST prices slashed ● MIDI Music Show preview

New machine enters; STylus exits

by Mark Higham

Atari intend to release a brand new ST-compatible machine at a forthcoming German show, *ST FORMAT* can reveal. The news comes amid increasing speculation that they have shelved their "keyboard-less user interface," the STylus, altogether.

Atari are always keen to make an annual announcement of new machines. At last year's Ce-Bit show in Germany, they announced two brand new STs – the ST Book and the ST Pad. The former, Atari's replacement for the STACY portable, was shown at this year's 16-bit Computer Fair in February and is now available in limited supply for about £1,300. The latter – a remarkable machine designed to read your handwriting, so you could input data without a keyboard – was delayed, then rechristened STylus, and will now never see the light of day.

In the past, Atari have often been accused of announcing "vapourware" – machines that sound great but could never be manufactured. With their new machine, however, they're determined not to make any announcements until the hardware is ready.

Atari haven't yet released details of the new machine to developers but a source at Atari indicated that it would be something "very special" which would appeal to producers of both leisure and serious software. Informed sources tell us it will retail for £600. For this price you'll get a 16MHz processor, enabling it to run twice as fast as the ST.

The new machine will come with the same high resolution screen modes as the TT. This means that the basic screen display would be 640x400 pixels. Thus, any software which currently runs in high resolution mode on the ST will work on the new machine. However, games tend to run in low resolution so these are unlikely to be compatible.

It seems certain that the new machine will also come with a 1.44Mbyte drive as standard, enabling you to store twice as much information on a disk as is currently possible.

Also expected are 256 colours on-screen at once and 16 channel stereo sound facilities. Extra custom graphics chips will be added to make this viable. 4MByte hard cards are also going to be a feature of the new machine. These work in a similar fashion to those used with Atari's Portfolio machine. A hard card enables you to store information on a set of chips contained on the card. It's the size of a credit card and can be plugged in and removed exactly like a cartridge.

● When it was announced, the ST Pad – a "keyboard-less user interface" that could read handwriting – seemed too good to be true. As it turns out, it was.

"This is really power without the price. This is the one Atari are thrilled with. It could ship a million machines this year"

DEVELOPER

Atari are known to be keen to sell the machine in the summer. To achieve this aim, it will have to be ST compatible, though it's unlikely to be given the ST name. Atari's Marketing Manager, Darryl Still, indicated that it would be given a two-letter name.

An ST developer who can't be named told *ST FORMAT*: "This is really power without the price. This is the one Atari UK are thrilled with. I think it could ship a million machines this year." It's likely to be a multi-tasking machine, perhaps utilising developments made on other Atari machines. Technology from the 64-bit Jaguar console (still under development) will be used.

Atari have to do their utmost to encourage developers to support any new machine, now that they've pulled the STylus. The hardware was first shown last March at the Ce-Bit show in Germany but it has never been demonstrated. The problem with any software which reads handwriting is that everyone has a distinctive style, almost as individual as a fingerprint. Atari's boss Sam Tramiel took a close interest in the system being developed by Atari US's Senior Design Engineer, Tracy Hall. An insider at Atari joked that "It could only understand Tracy's handwriting. Whenever he showed it to Sam, it couldn't understand a word he wrote."

At the moment Atari UK's Darryl Still will only confirm that the STylus has been indefinitely postponed. Atari first released details about the machine in March 1991, when it was called the ST Pad. When we interviewed Sam Tramiel in October 1991, he said: "I would conservatively say it will be in production by December." At the time he claimed the handwriting recognition software was "very close to being finished. We're just doing some final touches to it." Clearly, that view was over-optimistic.

CHANGES TO THE SCRIPT

The *Calligrapher* "document processor" range is undergoing a major shake-up. *Calligrapher Lite* – the cut-down (or possibly alcohol-free?) version – is available for £24.95 as one of the "QuickStart" introductory modules from Atari (☎ 0753 533344). *Calligrapher Junior*, the previous cut-down program, has been discontinued, but Working Title (☎ 0865 883592) have released a new version of the full package *Calligrapher Professional* and dropped its price to £119.00.

The new version is packed with added features: the dictionary loads automatically if there is enough memory available (700K), you can now save to the standard ST clipboard (so long as you have a hard drive), the file directory is retained during a work session, and much more. A wide variety of new printer drivers and 26 new typeface disks are also available.

In addition, there are three new add-on Paks for *Calligrapher Professional* at £25 each. An Interactive Formula Editor enables you to create and edit mathematical formulae; a Zebra industrial label printer driver gives you total control over output; and a Barcode Pak can generate industrial and retail standard barcodes, including barcodes for programming video recorders.

Xtra for less

by Mark Higham

With American exchange rates at their lowest for a long time, Atari are seizing the opportunity to drop their prices.

The Discovery Xtra pack is to be reduced to £299, and still contains a 520STE and four popular games – the highly-regarded god-game *Sim City* (*STF* 92%), the isometric 3D shoot-'em-up *Escape from the Planet of the Robot Monsters* (*STF* 80%), platform game *9 Lives* (*STF* 74%), and the beat-'em-up *Final Fight* (*STF* 74%).

Atari announced last October that they would be "repositioning" the ST as an all-round computer rather than a games machine. The result of this was the release of the Family Curriculum Pack, which included a 1040STE armed with 1MByte of memory and some impressive entry-level modules introducing a variety of "serious" ST applications. This was sold throughout the Christmas period alongside the Discovery Xtra pack. Atari claim to have sold the same number of 1040 STEs as 520STEs, compared with the previous year's figure of four 1040s for every five 520s. This either proves that Atari got their marketing ploy right or that the games in the Discovery Xtra pack were no match for others on the shelves at the time and did nothing to attract buyers to the 520.

Prices of Atari's "business STs," the Mega STEs and TTs, have also been cut. The basic Mega STE1, with no hard drive or monitor, now sells for £584.83, the Mega STE2, like the Mega STE1 but with 2MBytes of RAM, weighs in at £709.03, and the base model TT, the 030/2, will set you back a mere £1,166.14.

GET *ST FORMAT* TO COME TO YOU – WITH A GIFT! SEE PAGE 78

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First, second, third and fourth impressions

In recent months Impressions have been releasing games left, right and centre and trying to get away from their wargame image slightly. Now they've launched a new label, IF (Interactive Fantasyfiction), to broaden their range even further.

On the IF label, *The Hand of St James* brings all sorts of visions to mind. It turns out that the hand in question is actually a priceless relic (relics always are) that's been nicked from a olde worlde monastery. Whoever's done it did in a monk too, so in you step into your Sean Connery/*Name of the Rose* role and sort things out. The game's chiefly an RPG with some arcadey bits thrown in for when it all starts to pall. And there's absolutely no text typing, honest. Out in April.

Back on the regular Impressions label, forthcoming games are *Discovery – In the Steps of Columbus*, *Air Bucks*, *Samurai – The Way of the Warrior* and *Warriors of Releyne*. If things go the way they appear to be going, by the end of 1992 we'll be swamped in games all claiming to be the definitive Columbus simulator. In Impressions' *Columbus*, as in Domark's forthcoming game, your job is to build up your fleet, find brave new worlds and settle there, and avoid all the other Columbus-a-likes who are up to the same thing. Impressions say that since most people know the real world already they've provided some new "new worlds" for the player to discover. Said new worlds are due out "soon."

● **"Yes, yes, that's him! That's the man who stole my coffin! Oi, you, give me my coffin back!" Our hero gets somewhat emotional (and not a little confused), all because someone's nicked *The Hand of St James*.**

● **And on the left, a traditional Samurai house, complete with washing and authentic "knackered roof" look. *Samurai – the Way of the Warrior*. *The Way of the Builder* would have been more appropriate.**

Air Bucks sounds like an unashamed *Railroad Tycoon* clone. Starting in 1946 with just a Dakota aircraft and $100,000 to spend, you have to build up your airline business into something that rivals Virgin. As you progress, new planes are invented, new routes open up and you have to balance your budget wisely while keeping the business afloat. Yep, it's *Tycoon* with wings, and it's out in May.

We get back to the traditional Impressions style with *Samurai and Warriors*. They're both wargames, the first based on the fighting methods of those old funsters the Samurai and due in April, and the second a completely made-up scenario involving two islands, a 3D view and plenty of bashing. Watch for it this month.

Read all about it

by Clive Parker

Atari's long-awaited new font management system FSM-GDOS has finally been shown to developers in the UK and should now be on sale in the US, promising improved printout quality and an end to those jagged-looking letters on-screen.

FSM-GDOS replaces GDOS, the Graphics Device Operating System, which was originally designed as a general purpose graphical output program but was inexplicably left out of the ST's in-built Operating System. Instead it was supplied with programs that needed it. Unfortunately it included too few printer drivers and slowed down the whole operating system by some 30%, leading many software developers to bypass GDOS entirely and write their own customised output routines.

What's more, GDOS uses bitmapped fonts, storing each character as a unique image, meaning that you either need separate images for different sizes or end up with jagged edges when you enlarge a smaller image. FSM stands for Font Scaling Module and the new system, like *Calamus* and other top desktop publishing programs, uses outline fonts, which can be enlarged to any size without loss of quality.

The new FSM-GDOS package consists of five parts. The main operating system extension can scale fonts from 4 to 1,000 points, gives your ST Bezier drawing capability and enhanced polyline and polygon functions, and economises on memory by creating a cache for old GDOS bitmap fonts and another for its new data. Included is an alternative non-scaling version that uses the old GDOS bitmap fonts and not the new FSM scaleable ones, but does it right, with no loss of speed. The drawing capabilities of the VDI are also extended as above, and bitmap fonts are cached to make more efficient use of memory. This version is designed for STs that are short of available RAM.

Three accessories are also included. One enables you to configure the FSM caches and the fonts used, as well as providing options for compatibility with older software, and the other two give you extensive control over the wealth of printer drivers supplied and a comprehensive range of output options.

FSM-GDOS will be on sale as a stand-alone package in the US, but it is not known yet if Atari UK are going to release it separately or include it like GDOS with programs that need it. One package known to have FSM-GDOS compatibility is Laser Distribution's new version of their *Video Titling* program (£34.95). Laser can be contacted on ☎ 0579 82426 for more information.

The ABC of *STF*

ST FORMAT is still far and away the best selling ST magazine in Britain, according to the latest circulation figures released by the independent Audit Bureau of Circulations. They show that in the traditionally slow July – December period *STF's* sales averaged a hefty 65,202.

As compared with the same period last year, this represents a year-on-year growth of 17.6% – at a time when the economy as a whole has been contracting.

Steve Carey, *STF's* publisher, commented: "Last year *ST FORMAT* sold about 55,000 copies an issue. Now it sells more than 65,000 – a remarkable rise. What's more, on current sales *STF* is outselling its two nearest competitors combined. And that's simply because *ST FORMAT* is giving readers what they want."

Hardly drivin'

Domark's game of "How many times can we release *Hard Drivin'* and call it something different?" continues. After *Hard Drivin' 2* (did you notice the difference?) there now comes *Race Drivin'*.

● **(To be read in an Arthur Puty voice) "Cripes, how fascinating! Our defence was at 69% efficiency, yet our attack only managed 38%! Golly! Ooh, I wonder what the season average of player six touching the ball is?" *Championship Manager* – more figures for your money.**

What stunning innovations can we expect of this new car racer, then? Well, two new tracks, in addition to the Stunt and Speed tracks: the Super Stunt and the Auto Cross track. This last track is a tough uphill grind to beat the pace car. The game's also supposed to be faster overall and the handling's been improved. Apart from that, it's business as usual... except for the odd extra cow or two.

If you (a) dream of being an accountant or (b) have changed your name to "Liverpool FC," you might want to get *Championship Manager*, due in April from Domark. This is the most comprehensive, most detailed, most bor – er, most sophisticated football management sim ever developed on the ST. It was written by two fanatics over a period of seven years and everything you could ever want from a simulation is in there: 1,500 players, 80 clubs, transfers, injuries, sackings, player careers, buy-outs and so on and so forth. Just don't expect any arcade stuff; this is for sim-heads only.

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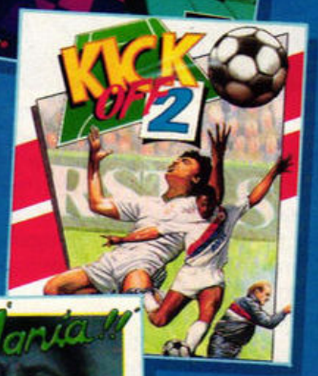
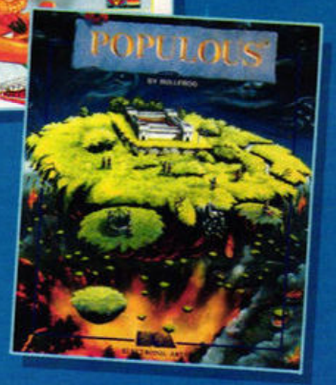
Award Winners





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ST software and add-ons likely to dominate show again

MIDI Music Show preview

by Vic Lennard

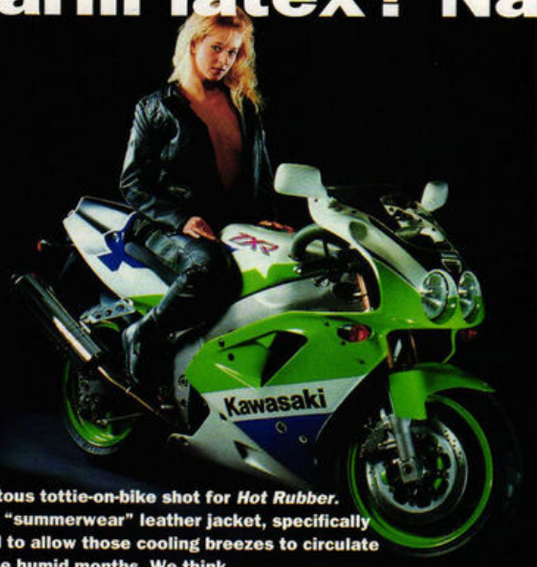
This year's MIDI Music Show looks set to break all records, with at least an anticipated 150 stands of exhibitors.

This is the third such show, and takes place on Friday 24, Saturday 25 and Sunday 26 April at the Novotel, Hammersmith, in London. For only £5 in advance or £6 on the door, the show is your first opportunity of the year to check out new releases including some launched at the Winter NAMM Show in the USA and the Frankfurt Music Messe, many of them not yet available in the shops.

The ST, with its built-in MIDI ports, is the musician's machine of choice, and new goodies for the ST are sure to feature prominently. Here's a preview of some of the new releases due at the show.

- Audio Visual Research, renowned for their samplers for the ST – including the 8-bit *Replay* and *Stereo Replay* samplers, plus the 12-bit and 16-bit *Pro-Series* – are promising to announce a breakthrough in low cost, high quality sampling systems. No more info at present – but from their past record, expect something good and cheap.
- Eye & I Productions are showing the *MIDI Crystal*, an in-line MIDI indicator costing £9.99, and the *Voice Crystal Merger Plus*, which can take two MIDI Ins and merge them into a single MIDI Out for £76.99 – necessary for visually editing synth sounds on your ST.
- Fostex launched their *X-18* four-track recorder in the USA, and will be showing it here. The price? A very competitive £260.
- Hands On MIDI Software will be venturing into the hardware market with the launch of *On Stage*, a MIDI File playback system which enables you to set up four banks of songs for live use. The system should cost around £100 and uses the ST but not the monitor – in place of the monitor is a small hardware box with LEDs showing the status of functions such as "play," "song bank" and "disk status."
- Hybrid Arts/Atlantic Audio are to demonstrate their *Digital Master EX* system for recording audio direct to disk. Also on show will be the *ST-Mac CD-ROM*, which enables you to access all those lovely Mac sounds on your ST, and a free-standing SCSI-DMA converter to enable the ST to be used with any SCSI hard drive. No prices until the show.
- What do you do with your old pre-MIDI synths? Kenton Electronics have the answer. The MIDI Music Show marks the release of their two-channel *Mini CV* converter, which can take MIDI information and output it to the Control Voltage and Gate sockets on a pre-MIDI

Warm latex? Nah!



● Gratuitous tottie-on-bike shot for *Hot Rubber*. Note the "summerwear" leather jacket, specifically designed to allow those cooling breezes to circulate during the humid months. We think.

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synth. Price should be around £160. Also released will be a four-channel version, the *Pro CV*, at around £300.

● Newtronic are launching their new Geerdes *Startrack* sequencing software for the ST, which boasts an open architecture that allows you to work the way you want to. It runs under Time Tech's "MIDIShare" multi-tasking MIDI operating system, and will cost £149.

● Peavey are showing many of the plethora of new devices they've just launched in the States, including the *Bass-FEX* for bass guitars, a new MIDI storage device called the *MIDI Streamer*, and two new synth modules – the *DPM Spectrum Synth* and *Bass*. At the top of the range is a new master keyboard called the *DPM-C8*. Prices still to be announced.

Upgrades due at the show include version 2.2 of Take Control's *Music DTP*, adding to this powerful desktop music publishing package the ability to import MIDI Files from any sequencing program. Price is £305.50 (update is free to owners of earlier versions). Zone Distribution will be showing the latest versions of *Band In A Box* (5.0) and *Freestyle Pro*, selling at £69.00 and £179.00 respectively.

Also scheduled are a total of 25 seminars over the three days. Friday 24 April is High End Digital Day, where you can find out about direct-to-disk recording, R-DAT and digital mixers. On Saturday and Sunday, seminars cover all aspects of MIDI, from drum programming, sequencing on the ST, synth programming and MIDI and synchronising to jingles and post-production.

■ **Contact Westminster Exhibitions, Surrey House, 34 Eden Street, Kingston, Surrey KT1 1ER, ☎ 081 549 3444**

● **The MIDI Music Show will be your first opportunity to see the new Roland synths. The *JV-30* is a *Sound Canvas* with a keyboard for £789.00; its big brother the *JV-80* is £1,245.00. Also on show will be the new *GR-1 Guitar Synth*; price not yet available.**

● **MCMCXIX will debut the *Zoom 9000* multi-effects guitar processor; it has a choice of 21 effects, five of which can be used at once, and also includes its own foot control unit, all for £259.95.**

● **Yamaha will be showing their *TG-100* General MIDI sound module (£349.00) and *RY-10* rhythm and bass tone generator (£249.00), the latter of which is the perfect partner for their best-selling *QY-10* walkman-sized sound module and sequencer. Many of Yamaha's Frankfurt launches are to be shown here, so prepare for some surprises!**

The next release from Palace is the dubiously-titled *Hot Rubber*, a straightforward motorcycle racing game with the added attraction of tacky Barbarian-style advertising – have a look at the photo. The game features a split-screen two player mode, 12 circuits and a save game facility, and should be out now-ish. After that it'll be *Titus the Fox*, strangely enough by French software house Titus. This is another complexity-free platform game notable for its size (900 screens) and all the consoley-style trappings like hidden bonuses, secret rooms and multi-directional scrolling. ETA: April.

● ***Hot Rubber*: vroom, brrroooom, vruuum-vrum, eeeeek!, and so on.**

I'M GAME IF YOU ARE

● DAZE OF WINE AND ROSES

Learn the name Daze Marketing Ltd well – they should be popping up regularly in the future. They're a new company fronted by ex-Palace man Richard Hennerley, who left Palace because he "wasn't too happy." Silmarils, the French company whose games Palace marketed, approached Richard in an offer-he-couldn't-refuse-type situtation and thus a happy partnership was formed.

Daze's first game (written by Silmarils, natch) is *Storm Master* and you'll find it reviewed on page 94. Obviously the company will be concentrating on Silmarils games to begin with, but since the Silms only release around three games a year they'll have to widen their net soon.

● IT ALL ADDS UP FOR MICROPROSE

Been watching *Gamesmaster*? Not exactly the Fry and Laurie of the computer world, is it? (Except for that Dominik Diamond bloke, of course – he's a real card, him.) And where's the ST? Not one review, tip, challenge or even reference to the ST. Someone ought to tell them that you can get good games outside of a console.

More interesting, though, are the MicroProse ads that usually appear in the break (particularly the bit about *Formula One Grand Prix* – still not released!). This is the first time a software house has advertised nationally on TV – if you exclude some very old Ocean ads that appeared for around three seconds one Saturday morning. Originally the ads were planned to run nationwide each time they were shown, but when the viewing figures for the first program came in, they were so unexpectedly high that London Weekend Television immediately upped their ad rate so much MicroProse could no longer afford it. That's showbusiness.

SNIPPETS

ST news from all over

● Atari US have announced two plug-in adapters for the ST Book portable. One is a MIDI expander which adds five extra MIDI ports to the machine and enables you to use SMPTE time control codes – ideal for musicians who want ST power on the move. However, this unit will only be available to third party software and hardware manufacturers for use with their own packages. The other adapter is in effect an add-on cartridge port, enabling you to use devices that plug into the port with the ST Book, including top packages like *Cubase* and Steinberg's *Pro-24*. No details of availability yet.

● Greg Pratt has resigned as President of Atari US to take up a position with a firm called Creative Labs Inc, who manufacture sound cards for PC-contemptibles. Apparently the move had been planned for some time and there are no immediate plans to replace him.

● Prisma Software (☎ 0244 326244) are launching a series of educational packages for the ST under the collective banner of "Kids' Academy." Five titles are due in April alone, with more to follow throughout the spring. Each title costs £9.99 and contains two or three games covering a range of skills for three to nine year olds, including pre-reading skills, spelling, mathematics and logic. There's even a specially designed art package.

● Impressed by *Write On* on this issue's extra Cover Disk? Version 2 of its big brother *That's Write* is due any day at £129.00 from Compo Software (☎ 0480 891819). Also coming is *ComBase*, a fully relational, programmable, multi-tasking database. Compo say it is the first fully networkable ST database, supports record locking and enables you to have as many database files as you need open and running side by side, memory permitting.

● The one problem with a top-of-the-range DTP package like *Pagestream 2* (£199.95 Silica ☎ 081 309 1111) is that it uses a page description language called PostScript and you usually need a PostScript printer to print out on. Now there's *CompoScript* (£233.83 from Compo Software), a handy utility that enables you to print PostScript files on a non-PostScript printer. A PostScript printer has 35 built-in fonts as standard. These fonts are supplied with *CompoScript*, so any 24-pin or laser printer can emulate PostScript output.

● Atari will be keenly involved in the show circuit this year, attending two shows in October and another in December, according to Atari PR man Peter Walker. At this stage however he wouldn't specify any venues.

● Atari US have just announced a new business division, Atari Music, with the explicit aim of improving Atari's position in the US music industry by making developers and retailers more aware of Atari music related hardware, including the new ST Book portable.

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New Protar Stereo colour monitor

This monitor uses the same tube as the Philips 8833 MK2 and has the same specification. The Protar comes with a **full 12 month replacement guarantee.** This must be the best value medium res. monitor on the market. **Atari cable included. Tilt and swivel stand only £11.99 when purchased with this monitor. Cover only £5.99**

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Welcome to

ST answers

This month it's goodbye to ye olde Desktop, and hello there to the sexy new ST Answers. Our pledge: to answer every single one of your queries on everything ST, be it hardware, comms, DTP, programming...

Hey, you! Yes, you, with the glum face! What's the matter, chum? Got a problem with your ST? Can't get that printer to print? Don't know how to program that tricky space shuttle simulator in *STOS?* Stack keep colliding with your heap? Why, you need *ST Answers!* By the time you finish reading these pages you should be able to put together your own Porsche Carrera for little more than the price of a cup of tea and a particularly sticky bun. Just look at the stuff that's in there...

MEET THE EXPERTS

They're raw, they're ready, they're itching to get their teeth into your queries.

ASA BURROWS

The man who knows more about *STOS* than its inventor, Lionel Stos himself. (We think.) He's a dab hand at assembler and best of all has a palindromic first name.

BARRIE CAPEL

Author of the exceptional animation package *Animaster*, regular *STF* correspondent, GFA wizard and someone who's never ever nasty to dumb animals.

VIC LENNARD

President of the UK MIDI Association, Vic has in his time been called a "music expert," "expert musician" and even "Vic." The vagaries of Bend Range hold no terrors for him.

CLIVE PARKER

Long(ish) term contributor to the dear departed Desktop and now *STF*'s very own Technical Writer. Not to be confused with the famous writer, Henry James.

ROGER PEARSON

BTST.S problem? Roger's your man. He can spot a logic error in assembly language from miles off and also happens to be the author of the DTP package *Easy Text*..

THE ICONS

What they mean and where to look to find the answer to your problem

If you're new to the world of the ST, your first port of call should be here. Under this icon we explain those confusing terms, techniques and foibles which the manual conveniently forgets to mention. We take you through formatting disks, copying files, renaming, deleting, and all the other things you need to know.

Having trouble getting on line? Not sure what V22 means? Not sure where to plug the lead in or even where to get it from? Our experts can guide you through the complex world of comms. Baud rates needn't be boring – just learn that lingo and you can get gibbering with the best of them.

The mysteries of mass data storage devices are solved here, from "What the hell is a hard drive anyway?" to connecting it to your machine; from access speeds to why and how you should back up your data. If SCSI and FAT are no more than terms of abuse to you, you need this section. Badly.

Is your printer giving you grief? Can't get at that special character set you know is there somewhere? Screen dumps printing out sideways or not at all? Not sure what a printer driver is or how to install one? We help you produce a masterpiece instead of gibberish from your reluctant output device.

Over 20 pages of helpful advice –

STAR LC-20 AND COLOUR

I got a Star LC-20 printer for Christmas and wondered if it can produce colour printouts. My friend says you can just replace the black ribbon with a colour one. Is this true? It works on his LC-10, so it should work on my LC-20 – it's a higher specified machine.
David Tyack, Ashbourne, Derby.

● A Star in colour?

***stf:** No, unfortunately you can't just replace the ribbon on the LC-20. Your friend can produce colour printouts on his LC-10 because he probably has the LC-10 Colour printer, which is a different model from the ordinary LC-10. Star do provide a newer colour printer than the LC-10 Colour – the LC-200 (£304 Star UK ☎ 0494 471111) – which comes with both colour and black ribbons.*

HIGH DENSITY DISK DRIVES ON THE ST

Kevin Bussell of **Derby** wants to know the details of connecting high density disks to his ST. There was a DIY feature on this subject in the Desktop section of *STF* 30. System Solutions (☎ 0753 832212) – formerly the Atari Workshop – can supply an internal high density disk replacement kit for

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wanted to know about your ST – it's all here!

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ST answers

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My query/tip has to do with: Beginners ❑

Comms ❑ Disks ❑ Games ❑ Graphics ❑ Hard drives ❑

Printers ❑ Programming (assembly language) ❑ Programming (GFA) ❑

Programming (STOS) ❑ Sound/MIDI ❑ ST problems ❑

Please enclose this form with your tip or query (as brief as possible – no more than 200 words if you can – and keep different subjects on separate sheets), then send the lot to: ST Answers, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

All floppy disk and disk drive related problems solved here. If you're not sure how to format disks or create a backup of important data, or if files disappear for no apparent reason, we can help you. If you want to upgrade your internal drive or add an external floppy we offer the best advice.

Chasing that elusive high score but just can't make it? Help and tips in abundance from our dedicated and highly trained team of midnight joystick wagglers. They eat, sleep and breathe games, and aren't happy unless they're chasing a sprite or two. These people are seriously sick, believe us.

Not sure which art package to use or how to achieve the best results from the one you've already got? Can't decide whether to opt for a colour or mono monitor? The best graphical advice in town can be found here. Dithering will become a way of life for you – it'll even be fun! Er, well, that is, probably.

Whether you're new to programming or an established coder there's something for you here. Our experts in *STOS, GFA Basic* and assembly language are on hand to solve all your programming problems. Soon the old "Loop: See Loop" joke will make sense to you (though it still won't be funny).

Be it MIDI or sound chip, sampled or internally generated, we can guide you to better music results from your software package. Want to sample sounds from your video? Want to link your machine to a hi-fi to annoy the neighbours? Look no further! Help is at hand. (Just don't send us your court summons.)

If there are strange noises coming from inside the case or your machine has slipped into a coma, we can help you to a speedy recovery. If you want to know the best route to upgrade your memory, or if you can't get that new piece of software up and running, then we have the answers you're looking for.

no less than 150 tips – and it all starts right here!

£99.95. This kit includes an HD internal drive and a high density interface module. They also offer a fitting service for around £35 if you don't think you can manage the job yourself.

GERMAN TOS

I am serving with the British forces in Germany and I have the opportunity of buying a Mega ST 2, 48MByte hard drive and mono monitor for £600. Of course, the keyboard and operating system are in German. I'm not too worried about the keyboard, but can I change the TOS to an English version?

A Mack, UKSO Ramstein, BFPO 109.

***stf:** You can get TOS 1.4 UK for any ST – except the STE – from Evesham Micros (☎ 0386 765500) for £40.00. Before ordering, check whether your Mega ST has a two chip or six chip version of ROM – the upgrade is available in both versions and comes with full installation instructions.*

MEMORY UPGRADE

I have a 520STFM with a double-sided drive. What is the best way to upgrade to 1MByte of memory?

N J Gipp, Kings Lynn, Norfolk.

***stf:** Several companies supply memory upgrade kits which are reasonably simple to install. Frontier Software (☎ 0423 567140) provide the Xtra-RAM Deluxe for £69.99 which can be used to upgrade your STFM to 1MByte. This uses SIMM memory boards and sockets, and you can later upgrade to 2MByte and 4MByte by replacing the 512K SIMMs with 1MByte boards. See the memory upgrades roundup in STF 25.*

ST BASIC TO GFA.LST

I have tried to convert listings from *ST Basic* to GFA .LST format by editing the .BAS file in *1st Word Plus* and then saving as an ASCII file with an .LST extension. Yet when I try to merge the .LST file into *GFA*, it is unable to read it. What am I doing wrong?

Darryl Williams, Bristol.

***stf:** Using* 1st Word Plus *is the problem here – it* →

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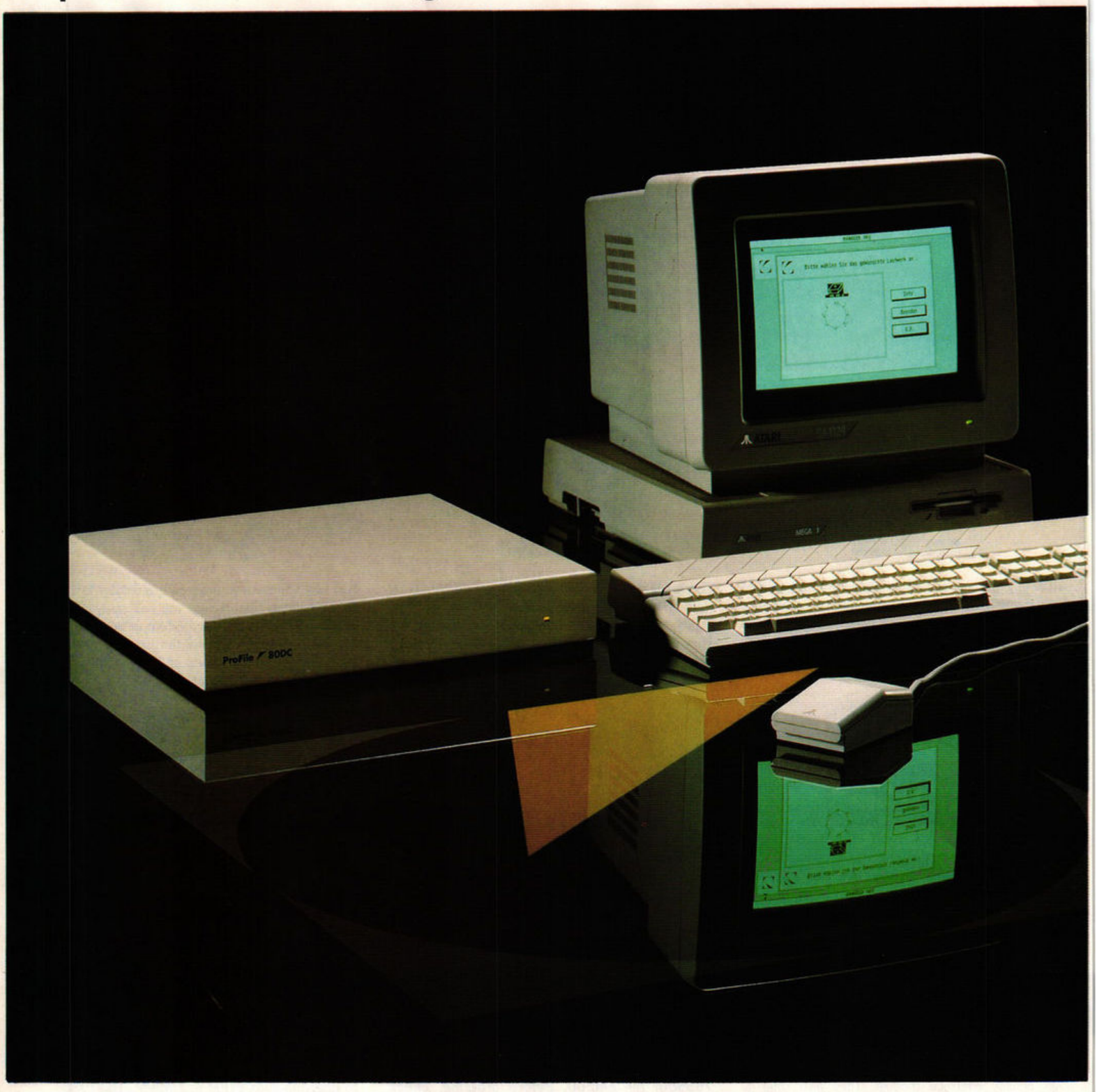
protar – Looking after number one



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saves an ASCII file with a numeric tag at the start of the file. It is this which fools GFA into thinking the file is not an ASCII file at all. The answer is to edit the .BAS file in an alternative word processor or text editor which saves ASCII files in the correct format. ST Writer Elite is ideal for this – and it was yours on STF Cover Disk 27.

SOFTWARE COMPATIBILITY

I am thinking of buying an STE in the near future, mainly for word processing and DTP. A friend of mine who owns an Amiga games machine told me that a lot of ST software does not run on the STE. I would like to know if this is true before I spend my money.

Phil Casson, West Yorkshire

***stf:** When Atari released the ST back in 1985, they issued a set of programming "rules" that had to be followed so all software would be compatible on all versions of the ST. When the STE was introduced a couple of years ago, there was a problem with some programs that had been written using "illegal" hardware calls. All this means is that the programmer used short cuts to speed up the program and produce a quicker game or application. It was mainly games that were affected, but STE compatible versions were quickly released. All ST software currently available runs on the STE, and Atari are now marketing the 520STE as the standard machine.*

What a difference an "E" makes

SPOT THE DIFFERENCE 1

I have just got a new 520STE and I was wondering what the differences are between the STE and the old ST. Which is the better machine?

Matthew Heard, Reading, Berks.

***stf:** There are several differences. Essentially, the STE is an "enhanced" or upgraded version of the ST. The major differences are that the STE has an improved colour palette with 16 colours available from a choice of 4,096 instead of from 512, stereo DMA sound capability as well as the original soundchip, improved disk and file handling routines, a "blitter" chip fitted as standard for faster screen handling and also an improved file selection box. Upgrading the memory is also easier because the STE uses Single Inline Memory Modules or SIMMs and is provided with spare SIMM sockets, meaning that extra memory boards can simply be plugged in.*

SPOT THE DIFFERENCE 2

Is the difference between a 520STE and a 1040STE just the memory capacity?

Sam Evans, Aberkenfig, Mid Glamorgan.

***stf:** Yes. The only difference between the two is the number of 256K SIMM boards installed – the 520STE has two and the 1040STE has four. You can install up to 4MBytes of memory by replacing the 256K SIMMs with 1MByte SIMMs, but the hardware supports only pairs of SIMMs, not any other combination: two 256K SIMMs gives you a 520; two 1MByte SIMMs gives 2MBytes and four results in 4MBytes. Oh, the badges on the machines are also different.*

MEMORY QUERY

Would a 1040ST be of more use for real-time music sequencing than a 520ST, and could you recommend a value-for-money sequencer package?

C Davis, Huntingdon.

***stf:** With all music packages, the rule is "the more memory the better." The extra 512K available on a 1040ST enables you to create files over three times as long as you can create on a 520ST, because much of the memory on a 520 is taken up by the sequencer software itself. In fact, many music packages can't run on a 520ST at all, so a 1040ST with a mono monitor would be the minimum recommended setup. As for software, Sequencer One was on STF Cover Disk 30 – you can't get better value than that. MIDIstudio Master earned an STF rating of 87% in issue 30 and is available from Ladbroke Computing (☎ 0772 203166) for £99.99.*

POUND SIGNS ON THE LC-10

I am using *ST Writer* with my Star LC-10 printer and I am having problems printing out pound signs. Do I have to edit the printer config file?

C Bland, Oxted, Surrey.

***stf:** On most Epson-compatible printers you can get a pound sign by entering a hash sign in the text in place of the pound symbol. The hash sign is on the key below the <Delete> key. This should solve your problem without resorting to editing printer files.*

GFA DISK DETECTION

I am writing a program in *GFA Basic* v2 and was wondering if there is a small routine for detecting if there is a disk present in the floppy drive and whether or not it is write-protected.

John Charles, via Bath BBS.

***stf:** The following routine should do the trick. The symbol ↵ means don't enter a line return yet – we just couldn't fit it all on one line here!*

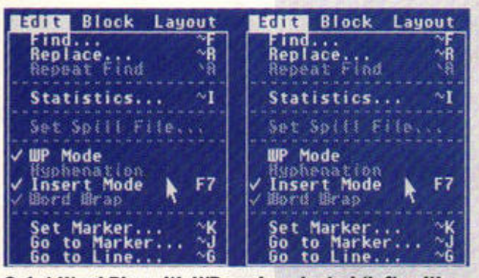
```
'
' *** Your program goes here ***
'
Gosub Define_vars
'
Check_disk:
If Peek(Wp%+Devno%)=255
    !Check if disk is write protected
  Alert 1,"Please remove write-protect!↵
  so that I can format the disk!",1, "OK|↵
  Cancel",Dummy%
    If D%=1
      Goto Check_disk
    Else
      Goto Restart !A label of your choice
    Endif !to jump to
Endif

Procedure Define_vars
    Devno%=0 !Main drive is A:
    Os%=Lpeek(&H4F2)
        !Get operating system address
    If Peek(Os%+1)=&H1E !Is this a normal ST?
      Wp%=&H9B2    !Write-protect status
    Else           !Is this a Mega ST?
      Wp%=&H9F8    !Write-protect status
    Endif
Return
```

WP PROBLEMS

I am having trouble saving files in *1st Word*. I save my files to disk without any problems, but when I try to display or print the file from the Desktop all the spaces are missing and there is a load of garbage at the start of the document. I get the same trouble with *1st Word Plus*.

David Tyack, Ashbourne, Derby.

***stf:** You are getting problems with the files you have saved because word processors save documents with all the information about text style included – bold, italic, underline and so on. The way to get around this in 1st Word Plus is to select the Edit menu from the menu bar and click on the line "WP Mode," so the tick disappears. Now when you save the file it is in ASCII format – in other words, plain text. Files in this format can be loaded into almost every word processor or DTP package.*



● ***1st Word Plus*** **with WP mode selected (left, with a tick next to "WP Mode") and not selected.**

FLEXIDUMP

I have been using *Flexidump* from *STF* Cover Disk 25 and have noticed that a lot of features cannot be selected. Is it a demo on the disk and, if so, how can I get the full version?

David Tyack, Ashbourne, Derby.

***stf:** Yes, it was a demo version on the Disk. The full version of Flexidump Plus is available from Care Electronics (☎ 0923 894064) for £19.74 for the mono 9-pin printer version, or £39.95 for the 9 and 24-pin colour and mono version.*

BIORHYTHMS

Could you suggest a Biorhythm program for the ST – either a type-in GFA listing or a ready-made program?

L Aldom, Rainham.

***stf:** Goodman Enterprises (☎ 0782 335650) have a Biorhythms program on one of their Astrology disks, number GD483, £2.75. It is a* →

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demo version, but the full program is available upon registering with the author or supplier.

GERMAN PRINTER OUTPUT

I have recently bought an ST system and a Star LC-10 Colour printer and am very pleased with the performance of both. However, I cannot get the printer to output German characters with umlauts and so on, which is a problem since I correspond with friends in Germany. I have done a printer self-test and fiddled with the DIP switches and the characters are in the printout. How can I get at them?
Nigel Deacat, Oxted, Surrey.

***stf:** What you need to do is select the German character set by means of the DIP switches in the printer, or by sending a series of codes from the ST to set the printer to the German set. If you look at the appendix of your LC-10 manual, you should find a section on the foreign character sets and the appropriate DIP switch settings and Escape Codes. There should also be a table to let you know which keys to hit to get the new characters. The best method of sending printer codes is via a PD printer setup utility program. Two good programs available from the ST Club (☎ 0602 410241) are* Twin-Peaks *(Disk DMG.23) and* PRT.SET *(Disk UTI.127), £1.45 each. Alternatively, you could edit the printer driver file for* 1st Word Plus *to produce a custom driver.*
Warning: Remember to always use a backup copy of any files you wish to edit.

VGA MONITOR

I recently acquired a colour VGA graphics board and VGA colour monitor for use with a PC-compatible. I was considering getting a hardware-based PC emulator for use with my ST and wondered if there was any way that I could make use of these items with the emulator.
Clive Hollister, Reading.

***stf:** What you need is the Supercharger SC Plus 286 from Condor Trading (☎ 0734 810066). This is an external unit which plugs into the DMA port on the ST, so there is no need to open up the case and invalidate your warranty. It is available in 12MHz or 16MHz versions (£528.00 and £582.00 respectively) and has two expansion card slots as standard, so you could use the VGA board and monitor you already have. There is an additional unit available (at £457.00) for the 16MHz which enables you to use up to eight PC expansion cards. For more details on emulators, see* STF *25 and 30.*

MORE LC-10 COLOUR

I have a Star LC-10 Colour printer and I am having problems getting colour screendumps and output in *1st Word Plus* and *Degas Elite*. I understand new printer drivers can help, but where can I get them?
Victoria Heard, Bristol.

***stf:** Printer drivers are small programs that help other programs to get results from specific printers. Several PD libraries have selections of printer drivers for the programs you mention – try Disks GD743 and GD744 from Goodman Enterprises (☎ 0782 335650), £2.75 each.*

PC DISKS ON ST

I was wondering if there is any way of printing out files from my word processor on the laser printers at work. We use PC-compatibles at work and they seem to read my STE disks but are unable to load *1st Word* files into the software we use. Can you suggest anything to help?
Richard Coe, Harrogate.

***stf:** You do not say what software you are using at work but there should be an option to import ASCII files. Since the STE formats disks in a way that PC-contemptibles can read, all you have to do is save the document as an ASCII file. This means no formatting or style information is saved with the document file. Most ST word processors have a "Save as ASCII" option or an option to turn off word processing mode – as in* 1st Word Plus. *You should be able to load these files into the word processor at work, then edit the file as you like and print out as normal. Note for owners of older STs: The STE uses a disk format PC-contemptibles can read, but the "old" ST does not. However, all STs can read and write to disks formatted on a PC, so if you wish to transfer ASCII files from your ST at home, just format the disks on the PC.*

PICTURE FORMATS

I have recently come across picture files in formats I am not familiar with, such as TNY, TN3, MAC, IFF, TIFF and so on. How can I get these pictures into *Degas Elite* or *Neochrome?*
Peter Brooks, Harrow.

***stf:** Probably the best way would be to use* Pic-Switch 0.7, *available on disks DMG.14 and UTI.142 from the ST Club (☎ 0602 410241) for £1.45 each. This can convert pictures between several formats. See the Desktop section of* STF *31 for full details of all the ST picture formats and conversion utilities currently available.*

WEAR AND TEAR

I've just acquired an external drive and I think I may have a fault with my ST. Whenever I am loading or saving anything to drive B, the internal drive whirrs away as well. I am worried that my internal drive may be writing to disk too, or damaging the disk in some way. There is no problem if there is no disk in drive A. Does my ST need repairing?
J Long, Putney, London.

***stf:** No, there is no problem with your ST. This annoying feature is normal on every ST. It is a hardware problem and does not affect your disks in any way.*

TV/MONITOR VS MONITOR

Would a TV/monitor with an RGB socket give as good a picture as a dedicated RGB monitor?
David Barnes, Hexham

***stf:** In general, TV/monitors do not give quite as good an image as the Atari SC1224 or the Philips CM8833 monitors, although if you had not seen a dedicated monitor display you would be quite happy with a TV/monitor. The difference between a TV/monitor's display and a TV picture is much more marked. It depends on what your requirements are. If you just want the monitor for your ST, then go for the dedicated device. The Atari SC1224 is available from Atari UK – contact them on ☎ 0753 33344. The Philips CM8833 Mk2 is available for £219 from Swift Micros on ☎ 0582 476257.*

BACKUP PROBLEMS

I have recently purchased an ST and I have a problem with backing up my games disks. I don't know how to do it! I have already ruined one disk trying. Please can you help?
K Barker, Manchester.

***stf:** As the law stands, it is illegal to make backup copies of games even for your own use unless it specifically states that you may do so*

Save that flippin' picture

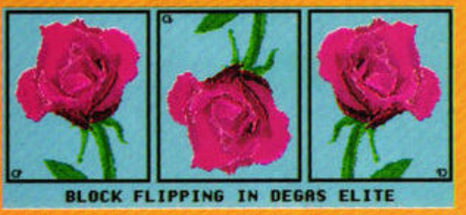
TIPS

CANVAS TIP

Here is a snippet of information concerning the art package *Canvas* (*ST FORMAT* Cover Disk 30) which might help people having problems with high resolution pictures they have created with it. **Goffart Maurice** from **Antwerp** in **Belgium** says: "Did you know *Canvas* saves NEO, *Degas* and IMG files incorrectly in high resolution? It saves NEO and *Degas* screens as low resolution files and IMG screens as 0 x 0 resolution files in one colour. Only *Canvas* itself is able to reload these files. The solution is to use a screen-grabbing utility – like *James the Desktop butler* (£2.75 from Goodmans PDL ☎ 0782 335650) with the Snapshot function on. Change the cursor in *Canvas* to the Point cursor (single pixel size) and position it so it is not visible in the picture. Press the <Alternate> and <Help> keys together and the file is saved properly in *Degas* .PI3 format.

DEGAS BLOCK TIP

When you're using *Degas Elite* in block mode, it is possible to reflect the block by pressing the cursor keys. The up and down keys perform a reflection in the X-axis (that is, up and down) and the left and right arrows perform a reflection in the Y-axis (left and right).
Paul Hammond, Isle Of Wight.



BLOCK FLIPPING IN DEGAS ELITE

● When the block is selected, use the cursor arrows to flip it through the x-axis or the y-axis.

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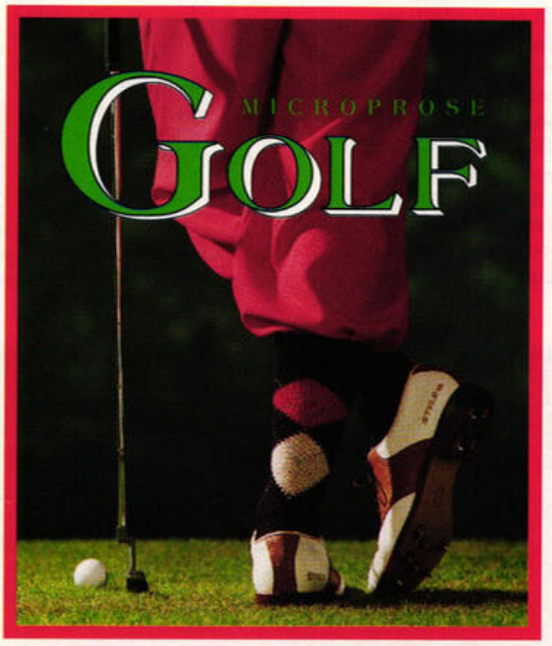
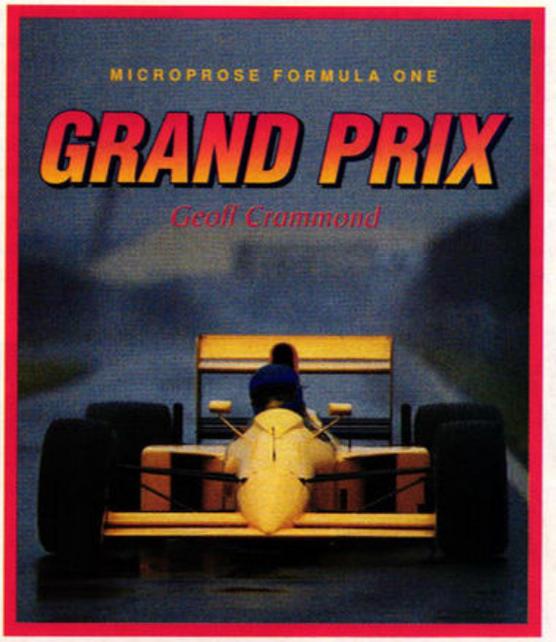
When

sport gets serious...





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in the documentation. Most serious applications do recommend you make a backup to use and keep the master copy safe. Most games are copy-protected and cannot be backed up.

WHICH SCANNER?

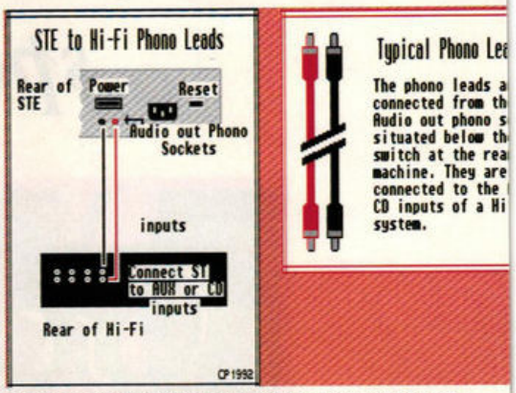
I'm thinking of buying a hand-held scanner for my ST. Can you recommend one in my price range – up to £150?
David Tyack, Ashbourne, Derby.

***stf:** You don't mention which ST or STE you have. This could be important because some scanners are not STE compatible – such as the Datel. One of the best buys around at the moment is the Zydec Handy Scanner from Evesham Micros (☎ 0386 765500) for £100. You can switch scanning resolutions between 100, 200 and 400 dpi (dots per inch). The higher the scanning resolution selected, the sharper the scanned image. The package comes complete with the Daatascan Professional scanning software, which is as good as you can get.*

MULTISYNC AUDIO

I have recently purchased an NEC Multisync 2 monitor for use with my STE so I can now easily use all three resolutions. I am very happy with it, apart from the fact that it has no sound output. I have heard that I can connect my STE to a stereo system, but it seems a bit over the top to go from silence to 50 watts per channel! How do I achieve this and is there an alternative solution?
Leigh Cross, Oldham.

***stf:** The STE is equipped with what the Addendum sheet refers to as RCA ports, which we know as phono sockets. These are located below and to either side of the power switch at the rear of the STE. It is simply a matter of getting a suitable length 2x-phono to 2x-phono lead and connecting the STE's phono sockets to the AUX or CD input on your stereo system. Phono leads are available from any hi-fi shop or an electrical store like Tandy's. If you do not have any spare inputs on your stereo, then you can either get an audio-input switchbox from Maplins, or use ZY-FI amplified stereo speakers which can be obtained from Evesham Micros (☎ 0386 765500) for £39.95. The switchbox is part number YZ24B priced at £14.95 and is available from your local Maplin Electronics store or telephone ☎ 0702 554161.*



● **In an age of high-tec jargon-ridden user-unfriendliness, it's nice to know you can get stereo sound from your STE simply by connecting it to your hi-fi.**

Sequencer One special

ST FORMAT's MIDI expert Vic Lennard tackles

In issue 30, *ST FORMAT* gave you the complete *Sequencer One* music package, and ST owners from John's End to Land O'Groats started making music (but getting confused about geography). This issue we start a new series to help you get the best from the program (page 54) and answer all your questions here

NON-STOP RHYTHMS

My setup is *Sequencer One* on an STE, a Yamaha RX11 drum machine and a Roland D5 keyboard. I only use the RX11 for its drum sounds; I don't program its internal sequencer. I use the D5 to play everything into *Sequencer One*, including the drums. I find that every time I click on the "play" icon in *Sequencer One*, the drum machine starts playing its current pattern and the only way to stop it is to stop the sequencer or turn the volume down! What am I doing wrong?
Mike Chalmers, Sutton Coldfield.

***stf:** A drum machine can be used as a sequenced-drum module or simply as a sound source. You want yours to act as the latter. What triggers off the drum machine is a "MIDI Start" command which tells the drum machine to start playing its current pattern (if it's in pattern mode) or the first pattern of the current song (if it's in song mode).*

So, where is this MIDI Start command coming from? **Sequencer One!** *Have a look under the menu heading of "MIDI" and you'll probably find the "Sync Send" option has a tick next to it. This sends out a MIDI Start command when you click on "play" followed by a stream of MIDI clocks to keep the drum machine in time with the sequencer. If you press "stop," a MIDI Stop command is sent out.*

What are these MIDI commands? Simply numbers – send out the right number and the right command takes place. Fortunately, you don't need to know what the correct numbers are because the sequencer takes care of them for you.

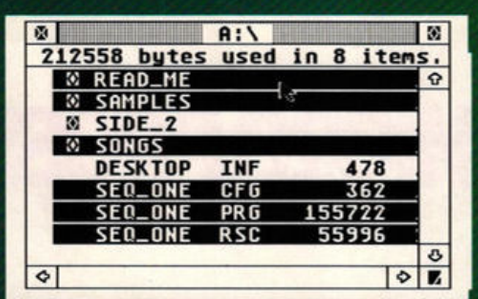
SILENT DRUMS

I'm using the *Sequencer One* program *STF* gave away in issue 30 and a Roland drum machine to play in various drum patterns by using my fingers on the pads. However, when I play back the track I've recorded on,

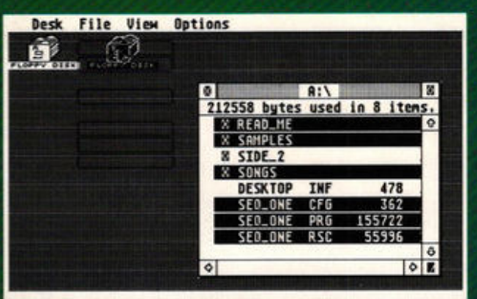
Four common Sequencer One problems

No matter how good a piece of software is, there are always functions which either don't work properly or don't work the way you expect them to. The former are usually referred to as "bugs" (or "undocumented features" if you're being nice about them), while the latter are often down to inaccuracies in the writing of the manual. The problems you might encounter in the *STF* version of *Sequencer One* are these four.

1 You can't make a copy of the *STF Sequencer One* disk in the normal manner – dragging the Floppy Disk A icon over the Floppy Disk B icon – because a disk formatted on the ST and the *ST FORMAT* Cover Disks are not the same – we wouldn't be able to fit everything on an 800KByte disk! However, you can transfer the files from the Cover Disk to another disk using this procedure:
(a) Format a double-sided, double-density disk in the normal manner.
(b) Write-protect your original Cover Disk (open the little tab so you can see through the hole) and place it in the disk drive. Double-click on the Disk A icon to open a window showing its contents.
(c) Now hold down the <Shift> key and, keeping it held down, click on all the *Sequencer One* files as shown in the first picture below. Do not click on the Side 2 folder or the DESKTOP.INF file. This selects the files you want – there should be three files and three folders.
(d) Now drag these to the Floppy Disk B icon, as shown in



● **To copy your *Sequencer One* disk, you can't just drag the Floppy Disk A icon over the Floppy Disk B icon. First select the files and folders you need...**



... then drag *them* to the Floppy Disk B icon. Your ST does the rest, with just a bit of disk swapping from you – when you're asked, naturally.

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WHICH PRINTER?

I have been using an old Epson printer which I have been putting up with for about three years. I am going to upgrade to a 24-pin printer – could you advise me which model to purchase?

F Herbert, Waterford, Eire.

stf:* STF *issues 25 and 31 had printer roundups in them – the highest rated 24 pin was the Panasonic KX-P1123, earning a* FORMAT *Gold rating of 90%. It is very easy to set up and operate since all the controls are situated on a touch sensitive front panel from which you can select almost every option available. The RRP is around £310 but you should be able to get it cheaper if you shop around.

STOS TIP

K P Ware-Lane of **High Wycombe** has found a way of auto-running *STOS BASIC* programs when you load up *STOS*. First, change the name of the .BAS file you wish to run automatically to AUTOEXEC.BAS and copy it to your backup language disk. When you next boot the *STOS* disk, the file you have renamed will load and run. This would be ideal for creating a password protection system for your *STOS* language disk.

STOS MAESTRO TO MASTERSOUND

Alex Theedom has sent in a short *STOS BASIC* routine which converts *STOS Maestro* (or any other) samples to a format suitable for *Mastersound*.

```
10 REM
20 REM
30 RESERVE AS DATA 5, length of sample file
40 BLOAD "SAMPLE.SAM",5
50 RESTORE 100
60 FOR X=0 TO 7
70 READ A
80 POKE START(5)+X,A
90 NEXT X
100 DATA 109,97,115,116,101,114,0,0
```

For *GFA Basic* and other languages, poke the data statement into the start address of the sample file.

MORE MAESTRO

I am writing my own programs in *STOS BASIC* and I want to incorporate sampled sound to make them more realistic. Is it true that to incorporate samples from other samplers (not *STOS Maestro Plus)* I would need a file called BASCODE.EXE? If so, where could I get this file from?

F Dyson, Portsmouth.

***If you buy a sound sampler, it is usual for source code in various BASICs to be included on the program disk so programmers can use the samples in their own programs. For example,* Mastersound *includes a program called STOSPLAY.PRG which is loaded into memory bank 7 of* STOS. *Alternatively, if you have the*

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all your *Sequencer One* queries

the drum machine stays silent! I've checked the Event Editor and can see the notes, but just can't get a sound out.

Chris Roberts, Macclesfield.

***stf:* *There are two ways of using a drum machine. The first is as a sequencer where you use the drum machine's own internal sequencer to record your pad presses and play them back for you. Usually, you set the drum machine to record and play the drums for a one or two bar pattern in time with the metronome, often dealing with one or two percussion instruments at a time. When you play back, the drum machine usually auto-corrects your playing by moving the pad presses to a specific note position rather than leaving them sounding too "loose." You don't need to set up which percussion*

● This menu item in *Sequencer One* solves the strange case of the drum machine that wouldn't stop playing.

instruments the drum machine plays back – it plays the same ones you heard when you recorded them.

The second way of using a drum machine is as a percussion sound module – you're not interested in the internal sequencer of the drum machine because you have something more powerful to work with, like Sequencer One. *You would usually connect the drum machine to your ST by a two-way MIDI link with the MIDI Out from the drum machine going to the MIDI In of the ST and vice versa. So, when you press the pads on the drum machine, the MIDI information this generates is transmitted from the MIDI Out to the MIDI In of your ST, and when your ST plays back your pattern the notes are sent from the MIDI Out of your ST and received at the MIDI In of the drum machine.*

So far so good – if you can see the notes in the Event Editor, then Sequencer One *has received them. If you can't see the notes you need to check whether the drum machine is set up to transmit MIDI information. Often, the MIDI Transmit function is turned off but you still hear the percussion sounds when you are recording because the drum machine pads actually trig-*

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the second picture. As soon as the icon turns black, release the mouse button.

(e) You should now get the "Copy File" dialog box. This may look slightly different depending on whether you have an STFM or an STE.

(f) Click on "OK" and follow the dialog box prompts for which disk to insert into the disk drive. When you need to swap disks, remember Disk A is the original *ST FORMAT* Cover Disk and Disk B is your new disk.

(f) That's it! You now have disk with all the *Sequencer One* files, and you can make a copy of this in the normal, ST Desktop manner.

2 If you're using a hard drive, you can transfer the files and boot up *Sequencer One* without any problems, except for one. As *Sequencer One* loads, it looks at disk drive A for a disk. No, this isn't a form of copy protection. What it's looking for is the metronome sample (METRO.IFF) in the folder on the original disk – it looks there because that's the path that was saved with the SEQ_ONE.CFG file when Gajits put the files for the Cover Disk together. But that sample is on your hard drive, not where it's looking.

There's an easy way around this. Put the original disk in drive A so *Sequencer One* can find the metronome sample and load it in. Then go to "Sample Palette" in the "File" menu and delete the METRO.IFF sample. Now click on "Load" and get METRO.IFF from the "Samples" folder on your hard drive and place it in Patch 1. Exit, and then save this new configuration by using the "Save Setup" option in the "Options" menu. Now each time you load *Sequencer One*, it looks for METRO.IFF in the Samples folder on your hard drive.

3 If you click on the "Play" icon in *Sequencer One*, you see the arrow cursor change to a clock and suddenly find that everything appears to have frozen! This isn't actually the case. What has happened is that the metronome sample – yes, that's the culprit again! – is playing through either the internal monitor speaker or the STE ports. Gajits found that if you move the mouse while *Sequencer One* is in Sample Playback mode, the pitch of the samples tends to be affected. So they suppressed all movement of the cursor by ignoring mouse movements! To stop the sequencer, you simply hit the ST's Spacebar.

If you don't want to use the sample playback mode, go to the "Options" menu and select the "MIDI Only" option – the "Output to Monitor" option is selected by default. Also, be careful not to delete the METRO.IFF sample from Patch 1 in the Sample Palette because the metronome is set to play the sample assigned to this patch. Have a look at the "Set Metronome" page in the "Options" menu – this is defaulted to using the "Audio Sample" in Patch 1. You can either turn the metronome "off" or transmit the metronome pulse to a MIDI sound source.

4 If you are using an external sequencer or an external drum machine and you need *Sequencer One* to send out the necessary MIDI synchronisation commands – Start, Stop, Clock and Continue – *Sequencer One* has a bug. If you have "Sync Send" ticked in the "MIDI" menu then each time you click on the "Stop" icon, garbage is sent out of the MIDI Out port.

This will only affect you if you are using the "Sync Send" function – if you don't use this, you won't have a problem. However, if you do need to use it, buy the Gajits User Kit from *ST FORMAT* – see issue 30, 31 or 32 for details of how to do so – and register your copy of *Sequencer One*. Gajits will then send you a corrected version of *Sequencer One* for a nominal cost.

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STOS Maestro *software and language extension, you should be able to load and play samples produced with almost any sound sampler into a STOS BASIC routine. You could even load samples into STOS Maestro and resave them as .SAM files.*

DOWN IN THE 24 PIN DUMPS

I have a Panasonic KX-P1124 printer and am having problems producing screen dumps from GEM – the resulting printout appears to be vertically compressed. There is no option from the control panel for 24 pin printers. Any ideas?
D Davies, Congresbury.

stf: The internal hardware on the ST is set up to produce 9-pin Epson LX type screen dumps. The answer to your problem is to load in a custom printer driver which takes over the print routine. There is a disk available for only £1.45 from the ST Club (☎ 0602 410241) called PTR.07 which contains printer drivers for Epson 24-pin (LQ) and compatibles. Because the KX-P1124 emulates the Epson, this should sort out your difficulties.

COLOURED GFA BASIC TEXT 1

Jeff Tullin of **Gateshead** has sent in a short GFA subroutine that enables you to use coloured text within GFA. It uses the "text" command rather than the "print" command. The routine is set up as follows. (The ↵ symbol means *do not* type a line return – we just couldn't fit the line into our narrow columns!)

```
Text$="Colored GFA Text Output"
Xposition=5
Yposition=10
colour=3
GOSUB Letter(Text$,Xposition,↵
   Yposition,colour)
```

The text you want printed is held in `Text$`. The `Xposition` and `Yposition` are the normal `PRINT AT(x,y)` coordinates and the variable `colour` is the value of the colour you wish your text to be printed in (range 0-15 in low res) To make sure the colour is correct for the value you enter, use the `SETCOLOR c, r, g, b` command, where the variable `c` is the colour you wish to set and `r, g,` and `b` are the red, green and blue values you wish to set. The subroutine follows:

```
PROCEDURE Letter(Text$,Xtab,Ytab,Col)
   DEFTEXT Col,0,0,6
   TEXT(Xtab*8)-8,(Ytab*8)-2,Text$
RETURN
```

COLOURED GFA BASIC TEXT 2

Another solution to the GFA coloured text problem comes from **M Knight** of **Daventry.** It uses just one line of code.

```
PRINT CHR$(27);"b";CHR$(n)
```

The variable `n` is the colour number required. The

Sequencer One special

continued from page 33

ger the internal sounds. But why can't you hear the instruments when the sequencer plays back? There are a couple of possibilities.

The first is that the drum machine is not set to receive MIDI – there is often a "Voice Receive" or "MIDI Note Receive" function that needs to be turned on. Second, the drum machine may be set to receive MIDI information on a different MIDI channel from the one it transmits on. To receive MIDI notes, the drum machine has to have the same MIDI receive channel as the transmit channel from Sequencer One. The third possibility is that the MIDI notes assigned to each percussion instrument for reception are different from those that have been transmitted. For example, the bass drum you used may have been transmitted as a MIDI note of C1, but may be set to receive on a MIDI note of C2. You need to check the manual on this last one – it's rare but possible. The second situation seems most likely in this case – but without knowing precisely which Roland drum machine you own, it's difficult to tell. Moral: always itemise the MIDI equipment you use when you write to ST Answers!

MASTER DRUMMER

I program drums on a drum machine and then use it as the master. I've put *Sequencer One* into External Sync mode, but find that whenever I stop my drum machine and restart it at the same point, *Sequencer One* goes back to the beginning of the song.
Janet Harris, Poynton.

stf: When you start the drum machine, a MIDI Start command is sent out from the drum machine's MIDI Out port which Sequencer One then receives. It starts at the same time, then receives the MIDI clocks sent out from your drum machine which keep it locked in time with the drum machine.

When you press Stop on the drum machine, a MIDI Stop command is sent out, telling Sequencer One to stop. One of two possible commands is then transmitted when you next press the start button on the drum machine – MIDI Start or MIDI Continue. A MIDI Start tells Sequencer One to go back to the beginning of the song although your drum machine carries on from where you stopped it. However, a MIDI Continue tells Sequencer One to carry on from where it was stopped.

● Suffering from lack of coordination? Marching to a different drummer? Try syncing externally!

Not all drum machines are capable of sending out a MIDI Continue command – it looks like yours is one of those, so you have to start the song from the top each time.

Try connecting your system up so that your ST is the master: connect the MIDI Out of the ST to the MIDI In of the drum machine. Sequencer One is capable of sending out a MIDI Continue command and your drum machine may be able to receive and recognise this. Try it and see.

NO COORDINATION

I always program my drums on an Alesis HR-16 drum machine and use the HR-16 as the master. The MIDI Out from the HR-16 goes to the MIDI In of my ST and the MIDI Out from my ST goes to a sound module. I'm now using *Sequencer One* and find that the sequencer doesn't start up when the drum machine does. What am I doing wrong?
Allan Picton, Truro.

stf: If the HR-16 is the master, this is what sends out the MIDI Start command and the ensuing MIDI clocks to ensure that your ST sequencer stays locked to the tempo of the drum machine.

If Sequencer One isn't starting, the chances are that it isn't set up to receive this MIDI Start command. Have a look under the MIDI menu and see whether "Internal Sync" or "External Sync" is ticked. To recognise the MIDI Start and MIDI Stop commands from your drum machine, you must have "External Sync" selected. "Sync" is short for synchronisation and decides whether Sequencer One is running under its own internal timing or under the commands it receives at the ST's MIDI In port from an external sequencer – which in this case is your drum machine.

Be careful, though. If "External Sync" is selected and you want to edit on the sequencer and click on the "Play" icon on Sequencer One, the arrow cursor changes to a clock – showing 3 o'clock! – and it looks like the screen has frozen. This is because it is waiting for the external MIDI Start command to arrive at the MIDI In port. If one doesn't arrive, then it stays like this indefinitely! Should this happen, simply hit the Spacebar and Sequencer One exits from Play Mode. Then you can go to the MIDI menu, change to "Internal Sync" and continue on your merry way.

● Want to get the most from Sequencer One's sample playback system? Turn to page 54 for a step-by-step guide to our Cover Disk demo!

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WORK IN PROGRESS

***PC Format* is the UK's leading PC leisure magazine and is devoted entirely to helping you get more out of your leisure time with the PC. Issue 7 is out on March 26 and fast forwards you into the exciting world of video. We'll show you how to liven up your home videos with titles and graphics, and how to get video images on to your PC.**

The rest of the magazine is packed with everything you need to keep you entertained: comprehensive and well-written game reviews, incisive and thought-provoking profiles, plus indispensable regular columns on shareware, music, CD-ROM, problem solving, playing tips and much more. Don't miss it. (Contents subject to change without notice, because life is like a baby – you never know when it's going to throw up unpleasant surprises.)

For the finished version of all this and more, make sure you get issue 7 of *PC Format* on March 26 and enter a new world of PC entertainment

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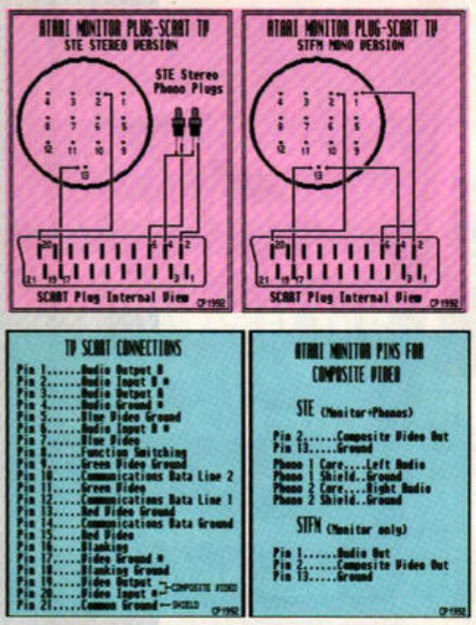
text's background colour can be changed by replacing the letter "b" with "c". Both "b" and "c" must be in lower case text.

SCART

Is it possible to connect my ST to the TV via the SCART socket on the back? I assume that the resultant picture must be of better quality than the modulator output. I would be grateful if you could print a diagram of the SCART connections.
Peter David, Exmouth.

***stf:** It is possible to connect the ST to the TV in this way. It is probably the most common connection to a new TV these days and gives a clearer picture than the normal RF (Radio Frequency) output from the modulator via the aerial lead. For an ordinary TV to show your ST's output the video signal from the ST has to be converted to an RF signal to be transmitted to the TV and then be converted back to a video signal. A SCART lead takes the Composite Video signal direct from the ST monitor socket to the TV, thus bypassing the conversion process. Most computer shops can provide you with the appropriate lead for about £10 to £15 or so. If you can't find a lead locally, then Maplins (☎ 0702 554161) can supply them. Ensure that you advise the supplier of the make and model of TV and whether you have an STE or STFM – some TVs have non-standard connections and there are several different configurations of leads available. It should be noted that the SCART connections for TVs are different from the SCART connections for RGB monitors. See the diagram below for the TV SCART connections.*



● The SCART pinouts (top diagrams) for both STEs and STFMs, and what all those connections really do.

VALUE FOR MONEY?

Why is it that a 40MByte hard drive which costs £300 is called good value-for-money when I can get 600 (or more) 3.5 inch floppies for the same money? If I formatted the each disk to 0.75MByte that means I would have 450MBytes of storage capacity available. I would be grateful if you could clarify this seeming paradox.
N Austin, Hereford.

***stf:** The main advantage of a hard drive over a floppy-based system is the speed of access, both for reading and writing of files and for loading programs. It is like comparing the floppy drive to the cassette tape loading systems of the Spectrum and C64. Another advantage is the size of files that can be stored – when working with sound samples or picture data for animation the filesize can often exceed the capacity of a floppy. Many of the more serious applications for DTP, MIDI, CAD and animation come on several floppy disks and it can be impossible to work efficiently if you have to keep swapping floppies to load in different files or sections of the program. Once you have used a hard drive, you won't believe how much your productivity improves. For more information see the hard drive roundups in STFs 27 and 31.*

KINGS QUEST 4 TIP

Players of Sierra's *Kings Quest 4* may have noticed that the game bombs out after saving their current position. This is because of the lack of memory on a 520ST. To solve the problem, make sure you boot the game with no Desk Accessories or memory-resident programs – that is, from a clean disk.
Chris Rogers, West Midlands.

WHAT'S ON TONIGHT?

Gavin Cameron of **East Lothian** wonders if he can convert his Atari SM124 mono monitor into a TV. This is unlikely to be possible because the Atari monitor has no capability for receiving RF or composite video signals and runs at an operating frequency of 70Hz as opposed to a TV's frequency of 50Hz. Besides, the SM124 may be pretty but it's not *that* pretty. Why not just buy a cheap black and white TV?

CAN'T READ TEXT FILE

Paul Parkin from **Derbyshire** writes to say that he can't read the .DOC files on *STF*'s Cover Disks because the text runs off the right hand side of the screen. This happens when you view them in low res. Because most DOC files are written on word processors or text editors they tend to be 80 characters wide – so you need to display them in medium resolution or print them out in order to read them.

PRINTER CONFIGS

I've just been give an Epson FX-800 printer but it is configured for another computer. How do I change the setup and what lead do I need?
Lee Davey, Stourbridge.

***stf:** The printer should work fine without any internal adjustments because the program or application you are using can reset the printer itself through software control. Most programs have a "Select Printer" option to enable you to choose a printer driver – if you select Epson from the menu you should be okay. If there is more than one Epson option, then try them all in turn until you find one that works best. You then save the settings so that the correct driver is installed the next time you use the program. A standard Centronics printer cable from any supplier can provide the proper connection to your ST. Cables are available from your local computer store or Tandy. If you have difficulty getting the cable locally then contact Maplins mail order on ☎ 0702 554161 and ask for part number JC11M – it costs £7.95.*

STOP, BASICALLY

Mr **I K Ndoro** from **Harare, Zambia** has sent in a tip for users of HiSoft's *1st BASIC*. As an alternative to using <Control>-C to halt execution of your program you can also use <Alternate>-<Insert>.

Confusion corner

DESKTOP PROBLEMS

I am a bit confused by the Desktop of the ST. How is it that sometimes the screen comes up in the usual green background, but if I switch on with another disk in the drive there are different colours?
Bruce Edwards, Salisbury.

***stf:** The reason different colours appear on the screen when you boot (start) from different disks is down to two files on your disk. The first one is CONTROL.ACC. This is a program that loads automatically into your ST from the disk when you switch on. It enables you to customise the setup of your system – the colours, the keyclick, the printer, the RS232 port and so on. The second file is called DESKTOP.INF. This file is saved onto the disk when you select "Save Desktop" from the Options menu on the Desktop. This then saves your layout to be*

MATHEMATICAL FORMULAE

I would like to print my Maths MSc dissertation using my 1040STE. Because mathematics uses many Greek letters and symbols, I am having trouble finding a suitable package to produce mathematical and scientific notation. Since I am a student and cannot afford a commercial product, can you suggest a good PD or Shareware package?
C Robertson, Newcastle.

***stf:** The package you need is called TeX, pronounced "tech." It is a German professional typesetting system designed primarily for typesetting technical books and mathematical texts. It's Shareware, which means you should register your copy and pay the fee if you keep using it. The ST Club (☎ 0602 410241) have a range of disks available covering the whole system, including printer drivers and PostScript conversion data. The two main disks you need to start are WPR.55 and WPR.56 which are £1.45 each and contain TeX, LaTeX and most of the utilities you need to get started. Also recommended are copies of the ST Club newsletter ST Applications – issue 2 has an introductory guide to TeX and issue 7 features a step-by-step guide to getting started. Back issues cost £2.00 each from the ST Club – and tell 'em we sent you!*

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FULL DISKS

I am running out of room and was wondering if there is any way I can compress files and programs so I can cram more onto each disk.

J Dinsley, Leeds.

***stf:** What you need is one the many archiving or data compression utilities available from PD libraries (see page 72 for STF's directory) or bulletin boards. There are several types – the two most used are ARC and LHarc. The drawback here would be having to un-compress files before using them. For more details of different programs see STF 31 which has a section on compression utilities in the Desktop pages. Another solution is to buy some more disks – they are available quite cheaply these days!*

PD CAD REQUIRED

I need a cheap PD CAD package that can print to a 24 pin printer, produce solid shading and save files in *Degas*, NEO and IMG formats.

Andrew Meredith, Chippenham

***stf:** There are very few PD or Shareware CAD (Computer Aided Design) packages about. JILL 2D and ST CAD are on Disk GD992 from Goodman Enterprises (☎ 0782 335650), and the ST Club (☎ 0602 410241) have 3D CAD on Disk GRA.71. These packages offer a good basic introduction to CAD on the ST at low cost. However, if these don't cover all the options you require, the original version of Antic's CAD 3D 1.0 is on sale at £20.00 from Gasteiner Technologies on ☎ 081 365 1151.*

CIRCUIT DESIGNER WANTED

I need a program that enables me to produce and test electronic circuits for my City and Guilds course. Can you recommend any PD software that would do this?

R Locksley, Nottingham.

***stf:** The ST Club (☎ 0602 410241) has two disks that may help you. Disk UTI.99 has a program on it called Transistor which enables you to produce schematic designs – it's a translation of a German program. Disk UTI.101 contains the Circuit Analysis Program, which determines steady state AC behaviour of electrical and electronic circuits, as well as a program called Logic Sim, which is a digital circuit simulator. These disks cost £1.45 each.*

– newcomers' problems solved

loaded the next time you boot from the same disk. For a more detailed description of the Desktop see STF 31.

AUDIO OUTPUT

What leads do I need to connect my new STE to the CD inputs on my hi-fi?

Lloyd Shephard, Portsmouth.

***stf:** The leads you need are called phono leads and can be bought from any hi-fi accessory store such as Tandy's.*

INITIALLY CONFUSED

I am thinking of getting an ST but I am a bit confused. I have bought your magazine for some time and I have seen references to the STFM and the STE. What do the letters "FM" and "E" stand for? What does "ST" stand for and what does "TOS" stand for?

C Rogers, Weston-Super-Mare.

***stf:** "ST" stands for "Sixteen-Thirtytwo." This is a reference to the 68000 processor chip, which has a 16-bit external data bus and 32-bit internal registers. This means it talks to the outside world 16 bits at a time and talks to itself in 32-bit chunks – a bit being the smallest piece of data a computer can recognise. The first version of the ST was called the 520ST. It had an external power supply, external disk drive and no TV output – it could only be connected to a monitor. Next was the STF, with internal floppy drive in the familiar position on the right of the machine, then the STM. The "M" stands for Modulator, which enables direct output to an ordinary TV set. Then came the STFM, with internal floppy, modulator, and power supply inside the case. Most advertisers tend to refer to the machines generically as STs or STFMs. The STE is an "Enhanced" version of the STFM with improved sound and graphics. TOS is the operating system which supervises the running of your machine. It is variously claimed that TOS stands for Tramiel Operating System, after the head of Atari, or The Operating System.*

8 BIT CONVERSION

I have just upgraded from an Amstrad CPC664 to an STE. I used to enjoy typing in BASIC listings from magazines and getting them to run. Would these listings work if I typed them in in BASIC on the ST?

J A Brown, Ealing.

***stf:** Most BASIC listings can be converted as long as they do not use any machine specific calls for things like screen modes, colours, sound routines and so on.*

POWER SUPPLY PROBLEM

I think the power supply on my 520 STFM has packed up and I am desperate to get it fixed, although I am rather short of money at the moment. None of the computer stores where I live seems to be able to help – they all seem to be only sales outlets. Do you know where I can get a replacement that I could install myself? I am an electrician, so it would not be a great problem for me to install – the connections look quite straightforward.

D Rice, Banbury.

***stf:** Unfortunately the ST's internal power supply is quite an expensive piece of kit – the recommended list price is £100! As you say, it is quite simple to install the replacement as long as you know what you are doing. But are you sure that it is the power supply that is the problem? If you buy a new one and your machine still does not work then you are no better off than you were before. If the machine is completely dead, with nothing working at all, it probably is the power supply. Your best option is to contact an ST repair centre and get them to sort it out for you. Evesham Micros (☎ 0386 446441) have a fixed repair rate of £65.00 for STs. They also supply power supplies separately for £55.00 or for £35.00 on a service exchange basis.*

PD INFO

Where can I get a mouse accelerator program and a program to stop the menus dropping down until they have been selected by a mouse click?

C Slaughter, Mosman, NSW, Australia.

***stf:** There is a mouse accelerator on STF Cover Disk 31 – MACCEL3.PRG. The other program you need is RATTRAP, available on Disk UTI.142 from the ST Club (☎ 0602 410241) for £1.45.*

HYPERPAINT QUERY

Can a hand scanner be used with the *HyperPaint* graphics program from Atari? I have checked the manual but I can find no mention of scanners in it. I don't want to buy a scanner if I can't use the pictures in *HyperPaint*.

David Linton, Sheffield.

***stf:** No, you cannot scan pictures directly into HyperPaint. Don't worry, though, because all scanners come with software which enables you to save images in a variety of picture file formats including Degas .PI? format and .IMG format. You can import both these file formats into HyperPaint without difficulty.*

CUSTOM CARTRIDGES

I have seen from my STE manual that the ST can accept ROM cartridges in a socket on its left-hand side. Can I get ROM cartridges to use myself for saving files to, like a floppy disk? Do software houses release games on ROM cartridges like dedicated games consoles?

Michael Okuda, Bletchley.

***stf:** The ROM cartridge port can only be read from, not written to. This means that, although you can read programs and data from a cartridge, nothing can be saved to it. Software houses do not use cartridges for games, because the ST can only directly read a maximum of 128K of memory from a ROM cartridge. This is obviously not enough memory for a game – a floppy disk holds almost eight times as much information. A ROM cartridge can be used as a piracy protection device (or "dongle") for serious applications such as MIDI or DTP programs. It is too expensive an option for use in commercial games. There have been several programs released on ROM, Fast BASIC and BackPac being the most notable. Other uses have been found for the cartridge port: Clock Cartridges, Scanners, Video Digitisers, Sound Samplers and so on. There is even a Robotics* →

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Choosing a memory upgrade for your Atari ST just got easier!

Once Frontier's XTRA-RAM *Deluxe* is installed in your ST, you can upgrade in stages to 4MB whenever you like - it couldn't be easier. Includes a two year guarantee and a no-quibble ten day money back offer.

Is your ST always running out of memory? Frontier Software's new XTRA-RAM Deluxe is the easy to fit and simple to upgrade memory expansion that you've been waiting for.

Thousands of ST users have already upgraded their STs to 1MB or 2½MB using the original XTRA-RAM in their homes and offices without having to send their computers away. Now Frontier, makers of the original XTRA-RAM, introduce their new memory upgrade - The XTRA-RAM Deluxe.

The experience, quality and expertise that went into the best selling XTRA-RAM has been applied to the new XTRA-RAM Deluxe. The XTRA-RAM Deluxe will upgrade your Atari STFM to 1MB then 2½MB and then 4MB with easy to install SIMM memory cards. Your Mega 1ST can be upgraded to 2MB and then to 4MB. Mega 2STs can be expanded to the full 4MB. Once the XTRA-RAM Deluxe is installed in your ST, you can choose when to upgrade further - you simply change or add SIMM boards - just like the ST^E. You can even use these SIMM boards if you later upgrade to the ST^E.

Easy To Fit

Installation of the XTRA-RAM Deluxe couldn't be easier. Following the instructions laid out in our simple to follow manual which is written with the non-technical reader in mind, you disassemble your STFM or Mega ST, plug the XTRA-RAM Deluxe into two places inside your computer and reassemble it. The whole process takes around 1½ hours and most STs will not require any soldering whatsoever.

The XTRA-RAM Deluxe fits <u>all</u> MMU chips (including the 100109) whether they are soldered down or not. If your ST has a soldered down Video Shifter chip or a 101601 type MMU then some soldering will be required. You can do this soldering yourself or Frontier or your dealer can do it for you for a small extra charge. If your ST has a socketed Video Shifter chip and an MMU which isn't the 101601 type, then you can fit the XTRA-RAM Deluxe without any soldering whatsoever. If you need any further explanation of this, contact Frontier direct.

No Need To Stop At 1MB or 2½MB

Most memory upgrades for the Atari STs will give you a simple upgrade to 1MB for about the same price as the XTRA-RAM Deluxe. Some of these upgrades may be as easy to fit as the XTRA-RAM Deluxe, but they do not allow you to expand your ST further. Once the XTRA-RAM Deluxe is installed in your ST, all you have to do to upgrade further to 2½MB or 4MB is install extra SIMM memory cards into the empty sockets on the XTRA-RAM Deluxe. This is a very simple process which takes less than ½ hour.

Don't restrict yourself to just 1MB. Make sure that you choose an upgrade, like the XTRA-RAM Deluxe, which can grow with your needs.

Totally Compatible

The extra memory that the XTRA-RAM Deluxe gives your ST is totally compatible with all of your ST programs. The ST's memory controller chip logs in the extra memory and makes it available for your programs. You will automatically get extra memory for DTP, word processing, MIDI, running the Atari Laser printer and everything else that you use your ST for.

Software Included

Each XTRA-RAM Deluxe upgrade is supplied with free RAM disk and printer spooler software and a free RAM testing program so that you know with certainty that your installation has worked.

Satisfaction Guaranteed

The XTRA-RAM Deluxe is supplied under Frontier's ten day money back offer - if you aren't satisfied with the XTRA-RAM Deluxe for any reason you can return it to the place of purchase within ten days for a full refund (participating resellers only). The XTRA-RAM Deluxe also carries a full two years' guarantee. The XTRA-RAM Deluxe is designed and manufactured in the UK. Unlike some ST upgrades, Frontier guarantee that each XTRA-RAM Deluxe uses only brand new SIMM memory boards - making your ST and its memory upgrade more reliable both now and in the future.

Prices

Frontier supply the XTRA-RAM Deluxe in four ways:

New Lower Prices!!

- XTRA-RAM Deluxe Unpopulated (without memory) £34.99
- XTRA-RAM Deluxe ½MB upgrades your 520STFM to 1MB (can later upgrade your STFM to 2½MB and then 4MB) £64.99
- XTRA-RAM Deluxe 2MB upgrades your 520STFM, 1040ST to 2½MB, Mega 1ST to 2MB or your Mega 2ST to 4MB (can later upgrade your ST or Mega 1ST to 4MB) £109.99
- XTRA-RAM Deluxe 4MB upgrades your 520STFM, 1040ST and Mega 1ST to 4MB £179.99

Please add £3.00 postage and packing to all orders under £120.00. All prices include VAT. Frontier accepts payment by Visa, Access, cheque or postal order. Prices subject to change without notice. Goods subject to availability. Specification subject to change without notice.

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Kit available that uses Technical Lego. J E Sinclare (☎ 081 316 1779) supply the Lakmayer EPROM blower, a device that enables you to create your own ROM cartridges for the ST. By using clever software the Lakmayer can get around the 128K limitation by switching between "logical ROMs." Prices are £193.87 for the 1Mbit (128k) EPROM Programmer and £276.12 for the 4Mbit (0.5MByte) Programmer.

MONO DESKTOP BACKGROUND

I have seen several PD programs that install low resolution pictures onto the Desktop of an ST – some of them from your Cover Disks. Since I have a mono monitor, these are of no use to me at all. Do you know of a program that can enable me do this in high resolution?

D Dixon, Essex.

***stf:** There is such a program. It is called EASEL.PRG and it sits in an AUTO folder on your boot disk. It loads any Degas PI3 picture that is in the root directory of the boot disk. An added bonus is that it works in all three resolutions as long as the relevant Degas file is on the disk. It should be available from most PD libraries – see our extensive directory on page 72.*

IN TWO MINDS

Sometimes while using a DTP package I need to switch to a graphics program to edit an .IMG or .PI3 image. It is frustrating to waste time saving and loading programs and files just to make a minor alteration. I cannot afford two STs, so is there any way I can have two programs in memory at once and switch between them?

S Goldsmith, Northants.

***stf:** Twist from HiSoft (£24.95 ☎ 0525 718181) enables you to switch between applications at the touch of a specified key combination. A newer solution is MultiGEM, which enables your ST to run up to six programs at the same time. It is a German program not officially distributed in this country yet, but you can get it for £99 from Scotsoft International, 47 Auchingane, The Tryst, Edinburgh. They must all be GEM applications for MultiGEM to work, because they are loaded into the Desk Accessory slots under the Desk menu. This means you lose an Accessory for every program you load. However, you can overcome this drawback by using a utility such as MultiDesk (£29.95 Atari Workshop ☎ 0753 832212), which enables you to load more Accessories. To use any of these programs efficiently, you need at least 1MByte of memory, although 2MByte or 4MByte is more realistic.*

ANALOGUE PORTS

I've noticed that my STE has two extra sockets on the left-hand side of the keyboard with 15-pin D connectors. What on earth are they for and how can I use them?

J Wilks, Rotherham.

● The pinouts of the STE's analog joystick ports. If only there were something to plug into them...

***stf:** These are the analog ports, which, according to Atari, can be used for analog joysticks, paddles and light guns. Atari haven't exactly rushed to actually provide anything to plug into these ports, however, and they have disappeared from the Mega STE. It should be possible to make an adaptor to plug into the ports to plug two normal joysticks into each. See the diagram above for the pinouts of each port. Special software routines would have to be written to read the ports.*

Plug-in memory for your STE

MIX AND MATCH SIMMs?

I have a 520STE which has two 256K SIMM memory modules installed. If I add two 1MByte SIMMs will I have a working 2.5MByte upgrade? I have seen the adverts for upgrading STFMs to 2.5MByte but I am unwilling to experiment.

N McGowan, Sheffield.

***stf:** You cannot mix different size SIMMs in the STE because of the hardware configuration. The only combinations permissible are these:*

512K (0.5MByte) = 2 x 256K SIMMs
1024K (1.0MByte) = 4 x 256K SIMMs
2048K (2.0MByte) = 2 x 1MByte SIMMs
4096K (4.0MByte) = 4 X 1MByte SIMMs

Any other combination does not work and may damage your machine.

SIMMS

I have been told that I can use 1MByte x 8 SIMMs to upgrade my STE's memory but not 1MByte x 9 SIMMs. Is this true and what is the difference between the two types?

H Thomas, Sheffield.

***stf:** The 1MByte x 8 SIMMs memory module uses eight one-megabit (128K) RAM chips, whereas the 1MByte x 9 SIMMs module uses nine one-megabit RAM chips. The extra megabit of RAM is used by older PC-contemptibles for parity checking of memory and is ignored by the ST and other machines. So both types of SIMMs are compatible for use in the STE or with STFM memory upgrade boards that use SIMM modules.*

CONSTANT CRASHES

I have a constant problem using *1st Word Plus* with my 520STFM and Panasonic KXP1181 printer set-up. If I am trying to save a file with an underline character (_) in the name – the underline creates a handy space between the filename and the version number – the program always crashes. I have to save a file and then rename it from the Desktop afterwards. Have I got a faulty version of the program? It is version number 3.10 (UK).

W Gibson, Windsor.

***stf:** This is, in fact, a bug in the ROMs of older STs. There should be no problem with the later versions of TOS. The easiest way to overcome this problem is to use one of the replacement fileselectors available from any reputable PD library, such as FSELECT6, FSELECT7 or the Little Green Footballs fileselector. (For your nearest PD library, see the directory on page 72.) These programs have been written to overcome this and other problems. The replacement fileselector program is simply placed in an AUTO folder on your boot disk and, once it's installed, all calls to the GEM file selector are redirected to the new program, without taking up too much memory.*

TECHNICAL INFO

Could you tell me where I can get information on the ST's BIOS, XBIOS and GEMDOS?

Mrs J Holland, Edinburgh.

***stf:** Atari have just released the full technical documentation for the ST to the general public (see News, STF 31). This consists of a series of four manuals detailing GEMDOS and General Programming (£29.95), New Machine Programming Guides (£29.95), GEM VDI and AES (£49.95) and Hardware and Chip Specifications (£29.99). Atari UK can be contacted on ☎ 0753 533344 for further details. An alternative is the book* Technical Reference Guide: Atari ST, Volume 3 *(£22.95, ISBN 0-87455-158-4) from Compute. It covers the topics you are interested in and is available from Ramara House Software on ☎ 0484 425843.*

ST AND CGA MONITOR

I am looking for a secondhand colour monitor to use with my STFM, but I am a bit confused as to what type is suitable. I have seen adverts for CGA monitors for reasonable prices – do these work with the ST? Is the Philips CM8833 Mk 2 as good as the new Atari SC1435 stereo colour monitor?

T Bateman, Swansea.

***stf:** No, CGA monitors do not plug directly into an ST. They are designed for use with PC-compatible machines. The new Atari SC1435 monitor actually uses the same tube and has the same resolution as the Philips CM8833 Mark 2 and can be purchased for slightly less if you shop around. Try First Choice (☎ 0532 637988) – they have the Atari monitor available for £214.99 and the Philips monitor for £229.99 – including lead.*

STE UPGRADE

Do you know if there is an upgrade with which I can upgrade my STFM to an STE?

R Backhouse, Isle of Wight.

***stf:** There are no plans to provide upgrade boards for the STFM – it would be impossible because of the large number of hardware differences between the STFM and the STE.*

→

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FLOPPY PLUGS

Where can I get the 14 pin DIN plugs and sockets I need to extend my external disk drive cable?
N Manse, Melton Mowbray.

***stf:** Your local electronics shop should have them in stock. If you can't find them locally try Maplins Electronics on ☎ 0702 554161 – part number JW96E for the plug at £1.86 and part number JW98G for the in-line socket at £1.98.*

GRAPHIC TABLET

I use my STFM for graphics mainly using *Degas*, *Quantum* and *ZZ Rough* but I find it awkward to use the mouse for drawing. Can you recommend a graphics tablet I could use with my ST?
Nicola Dewit, Harrow

***stf:** The only graphics tablet for the ST is the Cherry Digitiser Mark 4, but it is a rather expensive option at about £535.00. It is more suited to a professional designer's needs than for home use. It is directly compatible with any drawing or art package you own as long as it is GEM based with access to the Desk Accessory menu. You can also use it with non-GEM packages if you hold down the <Alternate> key while loading the program. For a detailed review see STF 29. Cherry Electrical Products can be contacted on ☎ 0582 763100.*

WHICH BASIC?

I want a better programming language than the one I got with my ST. I need to produce stand-alone programs for use with MIDI and sequencing. Should I go for one of the compiled BASICs for the ST or should I try C? I have used BASIC and Cobol previously.
L Marsh, Hereford.

***stf:** Both HiSoft BASIC and GFA v3 can produced compiled programs and are ideal for the type of program you want to produce. STOS is designed for creating games and is mainly geared towards graphics and sound. Learning C can be quite daunting for a relative beginner, so opt for GFA or HiSoft. It's easier to access MIDI functions with these too. HiSoft are on ☎ 0525 718181. GFA Basic v3.6 Interpreter (£40) and GFA v3.6 Compiler (£30) are from GFA Data Media UK on ☎ 0734 794941.*

PC MONITOR

I have been lent an EGA monitor complete with EGA graphics card. I have tried connecting the monitor directly to my STE by using a 13-pin monitor plug in various configurations but I cannot get a picture. Do I need to use the EGA card to get a display or can I connect the monitor directly to my machine?
Steven Althany, Manchester.

***stf:** You cannot connect an EGA (Enhanced Graphics Array) monitor to an ST, either with or without the EGA card, and you are likely to damage your machine by attempting to do so. An EGA card is designed solely for inserting into a PC-contemptible expansion slot and there is no way it can be adapted to the ST's output.*

PASSWORD PROTECTION

Is there a cartridge I can use on my ST as a security device – that is, while it was plugged in no disk or hard drives could be accessed without a password being entered first?
Marcus Davis, Bristol.

***stf:** Ladbroke Computing (☎ 0772 203166) have a device on sale called ST Secure – see News, STF 31. It resets your ST after 45 seconds if no password is entered. It is not a cartridge, though – it's a small board which is fitted internally, so you have to open up your ST and invalidate your warranty. However, it requires no soldering and is easy to install. It costs £25.*

DEVPAC 2

I have just bought *Devpac 2* for the ST and I was wondering if you could recommend a good book about the basics, for someone who has never programmed in 68000 assembly language. Could you also tell me if there is a book about sprite routines and screen manipulation in 68000 available?
T Richards, Oxford.

***stf:** One of the best books for beginners is* **Introducing Atari ST Machine Code** *from zzSoft (☎ 0422 845528). As well as a book, you get a disk containing all the examples in the book, a symbolic debugger, an .RSC editor, an assembler and linker. There are also good sections on GEM, GDOS and using 68000 from* **GFA Basic** *in over 400 pages. It is good value at £21.00. A more general book on 68000 might be useful too, since you may find the descriptions of the opcodes more detailed. An excellent book is* **Programming the 68000** *by Steve Williams, ISBN 0-89588-133-0. Budgie UK, the Licenceware game producers, have released a disk full of their machine code routines, including sprites, screen handling, sound, scrolling, joystick, mouse and so on. The disk costs £3.95 and is available from The ST Club (☎ 0602 410241). Ask for Disk number BPR.01: The Budgie UK Programmers' Library.*

SOUND ADVICE

I am producing programs using *STOS Basic* and the *STOS Maestro* sound package – unfortunately I have not got the sampler itself. Do you know where I can get ready-made sound samples I can use in my programs?
M Wilcox, Leicester.

***stf:** All PD libraries have selections of sound samples available. Goodmans Enterprises (☎ 0782 335650) in particular have a good selection of sample disks supplied by Mandarin Software themselves.*

→

Go for that second drive

I am thinking of getting a second floppy drive to use with my STE and I have several queries about it.

1. Is there a real advantage to having two floppy drives?
2. Can I connect more than two floppies?
3. Do I have to use the Atari own brand drive to avoid invalidating my warranty, or is safe to use other manufacturers' drives?
4. Is it safe to use a drive powered from the joystick socket? I have heard that this can cause the ST to overheat.
5. Are all external drives double sided, or do I have to ask for them specifically?

J Humphries, Leicester.

stf:

1. *Yes, there is an advantage to using two floppy disk drives. You not only eliminate all that tedious disk swapping but you also increase data transfer rates when moving files between disks. What's more, you can use drive B as a data drive when using applications such as word processors and graphics or art packages while keeping the program disk in drive A. (Some programs require you to keep the program disk in the drive at all times.)*
2. *No, you can't have more than two floppy drives. The ST is limited by its hardware to two floppies.*
3. *Any brand of drive is fine as long as it is ST compatible. This should be clearly stated in advertisements and on the box.*
4. *Using a drive that draws power from the ST's joystick port should be okay in most circumstances, but could conceivably overload the power supply if you have heaps of internal add-ons connected, such as emulators or extra memory. There are several drives available powered from the joystick port, but there is usually only a £5 to £10 price difference between these models and floppy drives with their own internal power supply. If you are concerned about the risk, then pay the few extra pounds for peace of mind.*
5. *All current ST disk drives on the market are double-sided as standard. There are several companies advertising in STF that can supply you with drives at very reasonable prices. Try Evesham Micros on ☎ 0386 765500 – they provide an external drive for £54.95 with its own internal power supply.*

● **Insert Disk B in Drive A, except on Tuesdays, then swap it again 5,224 times. Or get a second drive.**

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HOW MANY COLOURS?

How many colours can my STE display on the screen at once? I have been told 64, but I can't get that many.
Dean Williams, Biggin Hill.

***stf:** Although the STE has a larger palette of colours to choose from than the STFM (4,096 vs 512), it can only show 16 on-screen at once unless special software is used.*

WHICH MONITOR?

Recently I have been offered an Amstrad monitor converted for use on the ST complete with speakers for £120 from a local computer repair company. Would this display be suitable for the ST or should I save a bit longer and get the Philips 8833?
G Thorne, Totton, Southampton.

***stf:** Many people use Amstrad monitors with their machines with no problems at all. If it has been converted in a professional repair shop then you should not have any trouble. Take it, especially if the shop will offer some guarantee of backup if you do have any problems.*

GFA Programmers' surgery

More queries answered by Barrie Capel

NUMERIC ONLY INPUT

Luciano Theuma in Malta wants to know how to stop the cursor from moving when a user types in the wrong information. In his program, he has a small box in which the cursor is placed. He wants the user to enter a numeric value, but if a non-numeric entry is made, the program should ignore it instead of having the cursor leave the box. The answer is to ignore the command `INPUT`, and write your own routine using `INKEY$`, as in the listing below.

The program sits in a loop, scanning the keyboard with `i$=INKEY$`. When no key is being pressed, the string variable `i$` is empty ("" or null string) and the program continues through the loop. But, when a key is pressed, i$ contains the character of the key pressed. Using *GFA Basic's* `ASC` function, you can get the ASCII code of the key pressed to see if it's within the range you want to force the user to use. The numbers 0 to 9 have ASCII codes of 48 to 57, so if (like Luciano), you want to force the user to type a number in, you simply check for this with the `IF ASC(i$)...` line.

If the test shows that the key was legitimate, then the string variable `v$` is built up (allowing for large numbers), and in turn the function `VAL` is used to get the numeric value of the newly built `v$` into the variable `v%`.

You could obviously use other ASCII values. For example, to restrict the program to only accepting the keys a to f, you would use the ASCII values 97 to 102.

This process is continued until one of the `EXIT` line conditions is met – the <Return> key has been pressed or the required number of figures have been entered. If you want a number between 100 and 200, for instance, use the value 3 – it's impossible to enter a legitimate answer without typing three numbers.

```
' Numeric Input By B J Capel
'
-XBIOS(21,1,1)
PRINT AT(10,10);"Input Year: ";
v$=""
'
DO
    i$=INKEY$
    IF ASC(i$)>47 AND ASC(i$)<58
      PRINT i$;
      v$=v$+i$
      v%=VAL(v$)
    ENDIF
    EXIT IF i$=CHR$(13) OR LEN(v$)=2
LOOP
'
PRINT
PRINT
IF v%
    PRINT "You entered ";v%
ELSE
    PRINT "No number entered"
ENDIF
```

CURSE THAT CURSOR

The `XBIOS(21)` call in the program above also answers another reader's problem – how to get a cursor on the screen at the point of text entry. The `XBIOS(21)` call has two parameters. The first is the current cursor state, and can be: 0 = Cursor Hidden; 1 = Show Cursor; 2 = Blinking Cursor; 3 = Solid Cursor; 4 = Set Blink Rate. The second parameter is the blink rate, but is only used if the first parameter is set to 4.

WHERE'S MY SCREEN GONE?

***GFA Basic v3* owners who have upgraded from v2 are likely to smile at the mention of the old v2 colour problem which occurs when you return to the Editor after a program stops. (It doesn't happen any more with v3.) If the colour palette has been altered in your program, there's a good chance that the Editor screen is blank when the program stops! You get used to pressing the <Esc> key and in direct mode typing the required `SETCOLOR` commands to put the screen back to how it was – even though often you couldn't see what you were typing! However, this little routine makes life a lot easier.**

```
On Break Gosub Los_endos
'
For T%=0 To 15
    Setcolor T%,0,0,0
Next T%
'
Do
    Exit If Inkey$<>""
Loop
Gosub Los_endos
'
Procedure Los_endos
    Setcolor 0,7,7,7
    Setcolor 15,0,0,0
    Setcolor 2,0,7,0
    Stop
Return
```

Put the `On Break` line at the start of your program, and the procedure at the end. Then, instead of using `END` or `STOP`, make the last line of your program:

```
GOSUB LOS_ENDOS
```

The `Los_endos` procedure just resets the colour registers which affect the *GFA Basic* editor screen before stopping the program. The register which controls the ST's green desktop is included, so it too is reset when you exit *GFA Basic*. The other colours are not seen when you quit *GFA*, so they can be left. (So, call me lazy...)

The `ON BREAK...` line does nothing until you stop via the break keys – in which case the procedure `Los_endos` is executed also. Without this line, the procedure would not be reached because the break keys stop a program dead at the current position.

PLAYING MUSIC

A number of letters are on the subject of playing music files created by packages like *Quartet* – how do you do it? Microdeal, for example, supply routines for using *Quartet* music files with *GFA Basic*, so if you have *Quartet* you should have the routines already. If you don't, check out the ads in *ST FORMAT* for the best prices.

Playback routines usually involve machine code, and are *not* Public Domain, so we can't put them on the Cover Disk or list them here. You can use the routines in your own programs to give away or sell, *if* you have bought the original package concerned. The same applies to sound samples. Note that you are not authorised to use any package's playback routines if you have not purchased the original package.

NEW ST? TEN TIPS

1 View files as text rather than icons when copying files. You can change between the two using the View drop-down menu on the Desktop. Vital information about file sizes is displayed when you view as text, and this can help prevent you from trying to copy too much data to a disk.

2 When copying files use the Show Info option in the File menu on the Desktop to make sure there is enough room on the destination disk for the data to be transferred. To use this option put the destination disk in drive A and click on the disk icon once to highlight it. Now move the mouse pointer to the File menu and click on Show Info. After a few seconds a box appears informing you of the details of the disk, including the amount of free space left.

3 If you have only one drive, use a RAMdisk to make file copying easier. It speeds up the process by cutting the number of disk swaps to just two! Simply copy the files from the original disk to the RAMdisk, eject the original, then insert the destination disk in the drive and copy the files from the RAMdisk to the backup. Quick and easy. We gave away a powerful RAMdisk Accessory called *QuickDisk* on *STF* Cover Disk 31.

4 After you insert a new disk in the drive, you don't have to close windows and open a new one for the new disk. You can update the window information by pressing the <Esc> key at the left of the top row of keys.

5 Always make sure all peripherals (TVs, monotors, external disk drives, printers and so on) are turned on before your ST. This prevents any possibility of current surges damaging your machine.

6 Never plug anything into your ST or unplug anything from it while it is switched on – this can damage both your ST and the device you are connecting to it.

7 Always save any work you are doing at regular intervals – say, every 15 minutes. If by any chance the program crashes or the power is cut off, then you only have a small amount of work to replace.

8 Never use a virus killer program on a commercial games disk. Because of the special code used to start up games software without showing you the Desktop first, a virus killer is likely to think the game disk has a new type of virus and destroy the boot-sector, ruining the disk irreparably.

9 Always check any new PD disks or disks given to you with a virus killer or detector (like *UVK* from Cover Disk 26). Viruses can destroy data on your disks. Although all reputable PD libraries check all their disks it still makes sense to safeguard your data.

10 Viruses cannot damage your machine itself – once the power is off the virus is erased from memory. Some viruses can survive a reset – that is, when you press the small black button on the left hand side at the rear of the machine – so if you think you have a virus, switch off the power completely. Wait for 30 seconds or so before switching on to ensure the virus is gone.

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NO MANUAL

I have just bought an Atari 520STFM secondhand in a sale. The only problem is that I do not have an instruction manual. Where could I get one from?

L Turpin, Weymouth.

***stf:** You should be able to get one from Atari UK (☎ 0753 533344) or from Silica Systems (☎ 081 309 1111).*

LOST FILES

I have accidentally erased some important files on a programming disk and unfortunately I had no backup copy. Is there a simple way to recover the lost files? Is the software I need available in the Public Domain or do I have to get a commercial package?

Andrew Baker, Westbury.

***stf:** This problem highlights the importance of always making backup copies of every important file at regular intervals – say every 15 minutes. Use two data disks and save the file to each disk every time. In this way you can ensure that if the power fails or the program crashes and damages the data on the disk in the drive, you have a copy of your work. It may seem a tedious procedure but it is worthwhile in the long run.*

The best package for recovering lost or deleted files is KnifeST, £29.95 from HiSoft (☎ 0525 718181). It has a comprehensive instruction manual which is clearly laid out and easy to follow. STF 22 had a feature on recovering lost data and a Cover Disk program that might help. WARNING: Always remember to use a copy of your damaged disk to work on, do not try and recover data from your original data disk. You may accidentally cause more damage to the disk or delete parts of files.

WHICH UPGRADE?

I have a 520STE and I want to upgrade either the memory to 1MByte or get an external drive, but I cannot afford both. I use my ST mainly for word processing. Which do you recommend I should do first?

L Black, Leytonstone.

***stf:** Because most serious applications such as word processors happily run in 512K, the most useful initial upgrade would be to purchase an external drive. Having an external drive adds flexibility to your machine by speeding up file copying and data storage and eliminating constant disk swaps while using applications – generally speaking, it increases your productivity. STF 28 had a full roundup of external disk drives, in which the Cumana CSA354 came out tops with a FORMAT Gold rating of 90%. It's £69.90 from We Serve ☎ 0705 325354. However, if cost is an important factor then the Power Computing PC720 drive is good value at £55 with an STF rating of 85%. Power Computing can be contacted on ☎ 0234 843388.*

On the other hand, because you have an STE, you can upgrade the memory yourself for about £25 using two 256K SIMM modules. Ladbroke Computing (☎ 0772 203166) have the 512K SIMM upgrade available for £24.99. If you plan to tackle DTP, an upgrade is a must.

GDOS OUTPUT PROBLEMS

I am having trouble finding a GDOS printer driver for both my Panasonic KX-P1124 and my Deskjet 500 printers. Do you know where I can get help with this problem?

Roger Croft, Worcester

***stf:** Most PD libraries can supply printer drivers for GDOS. Goodmans Enterprises (☎ 0782 335650) have 24 pin drivers on disk GD1186 for £2.75 and the ST Club (☎ 0602 410241) on Disk GDOS B for £2.95. The ST Club are holders of an Atari GDOS Licence and can supply a GDOS driver information sheet.*

Running in auto

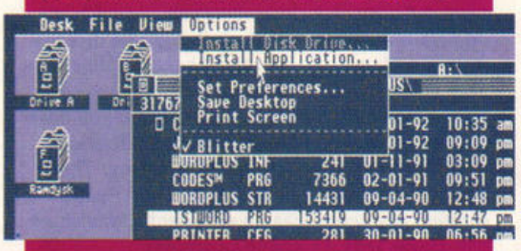
I have just acquired a 520STE and I have a couple of questions. 1. How do I create an AUTO folder and what type of program can be used in it? 2. Can I put *1st Word* in it so it starts up automatically? I have tried doing this but my ST resets itself constantly until I insert a different disk.

D Burton, Cardiff.

***stf:** ❶ The AUTO folder is a useful part of the ST's operating system that enables you to automatically run small programs or install utilities into memory to enhance the operation of your machine prior to the Desktop appearing. However, you can't use it to start GEM programs – those that use Windows, Menus, Alert Boxes and so on. This is because the AUTO folder is accessed and run before the GEM operating system is loaded into memory from ROM. This means you can't run 1st Word from within it.*

The main use of the AUTO folder is to run utilities to set the system time from a clock card, set up a RAMdisk, install an alternative fileselector and so on. You create an AUTO folder simply by using the New Folder option in the File menu on the Desktop and entering the name "AUTO." The AUTO folder must not be in any other folders, and only programs ending in .ACC can run automatically.

❷ However, on an STE you can set up your machine to automatically run 1st Word by using the Install Application option from the Options menu. Put your 1st Word program disk in Drive A and open the drive window. Click once on 1STWORD.PRG so it is highlighted. Now go to the Options menu and select Install Application. An alert box appears – the name 1STWORD.PRG should be in the Application Name line. Click on the box labelled Auto in the Boot Status line so that it becomes highlighted. Now click on the Install button. After the Desktop returns, go again to the Options menu and select Save Desktop. Now when you boot from your 1st Word disk, it loads and runs the program.



● You can't run *1st Word* from an AUTO folder, but on an STE you can run it automatically by using the Install Application option.

IMG TO VECTOR CONVERSION

Is there a PD or commercial program available to convert bitmapped IMG files to vector graphics files so I can import them into *Outline Art* and other Desktop publishing programs?

E White, Denmark Hill, London.

***stf:** There is nothing available in the Public Domain, but there is a recently released commercial package called Avant Vector which does the job you require. It runs in high resolution only on all STs. It happily imports and converts the following picture formats:*

- *.IMG GEM image format*
- *.TIF Mac and PC images*
- *.IFF Amiga images*
- *.BLD Megapaint format*
- *.PI3 and .PC3 Degas formats*
- *.PIC/.PAC STAD formats*

It saves files in .CVG and GEM formats suitable for importing into CAD and DTP packages. There is an expanded version of the program called Avant Plot which also imports and exports in .CVG format and enables direct output to Graphtec (GP-GL) and Hewlett Packard (HP-GL) compatible plotters. Both versions are available from System Solutions (☎ 0753 832212) – Avant Vector for £291.83 and Avant Plot for £584.83.

AMIGA EMULATION

I have been told that there is a software Amiga emulator available for the ST or the STE. Where can I obtain this? Is it a PD program?

Sammy Bektas, Dandenong, Australia.

***stf:** There was a PD program which was purportedly an Amiga emulator but, in reality, just imitated the look of the Amiga Workbench – the Amiga's version of the Desktop. It has now disappeared from the catalogues of PD libraries. The Amiga has several custom chips to handle its graphics and sound capabilities which it would be impossible to emulate in software. But why imitate that old games machine anyway?*

PROGRAMS NOT FILES

I have been using *1st BASIC* with my ST for some time now, but I cannot make programs which can be loaded and run on their own. I have tried saving the files with a .PRG extension but it still does not work. How do I get my files to run?

Colin Boote, Solihull.

***stf:** You can't save 1st BASIC programs to let them run on their own. What you need is another version of BASIC that supplies a program called a BASIC compiler. A compiler is a program that takes a BASIC listing and converts it into a .TOS or .PRG file that can be double-clicked on and run from the Desktop. Two of the most popular programs which have compil-* →

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→ *ers available are* GFA Basic *and* STOS Basic. GFA Basic *v3.6 Interpreter (£40) and GFA v3.6 Compiler (£30) are from GFA Data Media UK on ☎ 0734 794941.* STOS Basic *and* STOS Compiler *can be obtained from* STF *mail orders – see page 66. The offer includes* STOS Sprites 600 *and the* STOS Maestro *sound sample module, which enables you to add sampled sound to your* STOS *programs.*

I KEEP LOSING LTTRS

I have a problem when using my Epson LX-85 printer with my ST. When I print out a document from *1st Word Plus*, I lose the first half-page of the data, I get strange form feeds and garbage printed out. I have similar problems with *Degas Elite* and *Certificate Maker* – I lose the first section of data. The same printer works fine with a Compuadd PC, but does not work with a friend's ST, and my ST works with a friend's LC10. Can you shed some light on this?
M Gough, Harrogate.

stf: *The problem is that the parallel port in older STs is under-powered because the design of the ST uses the YM2149 sound chip to drive the printer instead of a dedicated Centronics chip. There are several solutions to the problem, although they may not all work.*

First, try a shorter printer lead – the longer the lead, the more power is needed to drive it. If this doesn't work, try a hardware printer buffer from Frontier Software ☎ 0423 567140. The third solution is to build a buffer yourself. There were details of this project in issue two of the ST Club newsletter ST Applications, *available from the ST Club ☎ 0602 410241.*

GFA BASIC PROBLEMS

I have two queries about *GFA Basic*. 1. How can I print text in inverse for menus and suchlike? 2. How can I detect if there is a printer online or not?
David Walker, Bristol

stf: ❶ *The inverse video query is an old problem. To turn on inverse video:*

```
Print Chr$(27);"p"
```

And to turn inverse video off:

```
Print Chr$(27);"q"
```

❷ *In* Atari ST Internals *by Abacus Software the GEMDOS call* `$11 PRTOUT STAT (GEMDOS 17)` *is listed. This function returns the status of the centronics interface. If a printer is not on line, then* `D0` *contains the value zero. If a printer is on line* `D0` *contains the value* `$FFFF`. *To use this from* GFA Basic *use the following code.*

```
If Gemdos(17)>0
   Print "Printer on line."
Else
   Print "Printer off line."
Endif
```

See the Appendix on Special OS functions in the GFA manual.

QUALITY OUTPUT

I regularly use *1st Word Plus* and *Degas Elite* to produce leaflets and tickets for local events. The problem is, I can't afford a high quality printer such as a 24-pin or inkjet. Do you know of anywhere that I can get my documents printed out on a laser printer?
A Fox, Kettering.

stf: *The ST Club (☎ 0602 410241) offer a laser printing service. Cost depends on what type of document or file you send them.* Degas *or* Tiny *format pictures are 35p per page and* PageStream *or* Timeworks DTP *pages 45p each.*

An attractive little conversion

In *STF* 31 you listed programs that can display various picture file formats on an ST. Can I convert *Degas* .PI1 or .PC1 files to .IFF format for my friend to view on his Amiga games machine?
I Walton, Daventry.

stf: *Both* Picswitch 7 *and* View GIF *can read .IFF picture formats and save them as .PC? (compressed) or .PI? (uncompressed)* Degas *files.* Degas Elite *can import .IFF files directly, but you wish to transfer files in the other direction. Since* Degas *saves blocks in .IFF format, the solution is as follows:*

❶ *Load* Degas Elite *and load in the picture file you wish to transfer.*

❷ *View the picture and select the Block option by pressing <Esc>.*

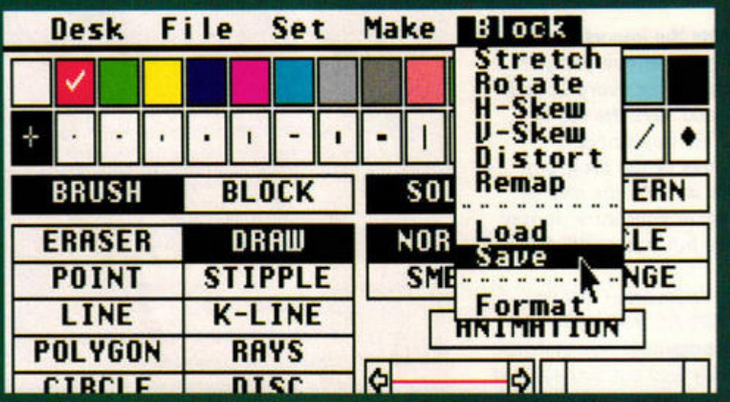
❸ *Cut the whole screen as a block.*

❹ *Go back to the menu screen and select the Save Block option from the Block menu. Save the block to disk.*

❺ *Repeat for all pictures you wish to transfer.*

❻ *Exit* Degas. *Use the Show Info option from the File menu on the Desktop to alter the file extenders of your saved file from .BL1 to .IFF.*

The .IFF format is used on machines like the Amiga games machine, so if you save to a PC-format disk in step 4 (the STE can do this as part of the Format option at the Desktop), your friend can use the Cross-DOS utility on the Amiga to transfer the files to an Amiga format disk so he can use them.



● **The Block Save option in *Degas Elite*. If the whole screen is saved as a block, it is saved in .IFF format. This means other machines restricted to that format can view your ST masterpieces!**

ONE DRIVE BLUES

I have only a single disk drive system since I opted for the extra memory of a 1040STFM rather than purchase an external drive. I find it tedious when backing up disks because of all the disk swapping involved. Is there a way to avoid this? I think my hand is going to drop off soon!
J Lowe, Peterhead.

stf: *You need to install a RAMdisk to help you out here. A RAMdisk is a section of the ST's memory which is set aside and treated as if it were a floppy disk drive. You can copy files to and from a RAMdisk and run programs directly from it with greatly increased access times. The only catch is, you must save data to a real disk before you switch off the power. Since you have a 1040STFM, you can easily install a RAMdisk of 500K or so to assist with file copying. There are several RAMdisks available in the Public Domain and there was an excellent RAMdisk on* STF *Cover Disk 31 called* QuickDisk.

Once you have installed and configured your RAMdisk to 500K, you can simply drag the files you wish to copy from the original disk in Drive A to the RAMdisk, remove the original disk, insert the destination disk into Drive A and then drag the files from the RAMdisk back to Drive A. In this way, you can copy or move 500K of files with only one disk swap.

MIDI BASICS

I have a sequencer program and a Yamaha keyboard – I have managed to use the program quite well but am becoming more and more interested in MIDI itself. Could you recommend some elementary books on the subject?
T Bragg, Boston, Lincs.

stf: *There are several good books available which would be suitable to get you started: try* MIDI Basics *(ISBN 0-7119-0952-0),* Synthesiser Basics *(ISBN 0-7119-1022-7) and* MIDI for Musicians *(ISBN 0-7119-0822-2). You can order all these books from your local bookshop.*

LEAD ME TO A LEAD

I have a Ferguson TX television with RGB inputs. Where I can get a suitable lead to connect it to my ST?
Alistair Nichols, Hayling Island.

stf: *Your local Tandy or computer shop should be able to fix you up. If not, then Meedmore (☎ 051 521 2202) can supply the lead you require. Make sure you specify the make and model of your TV so that they can provide the correct lead.*

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Ladbroke Computing are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which means that we test all Hardware prior to despatch to ensure that goods arrive in working order. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. This isn't just our opinion, we were voted "Best Dealer 1989" by the readers of ST World magazine, not for "the number of boxes shifted", but for quality service.

All prices are correct at copy date 18/02/92 (while stocks last), and are subject to change without prior notice. Please phone for up to date prices. All prices include VAT & delivery(in mainland UK), there are no hidden extras (WYSIWYG). Next day courier delivery is available for an extra £7 (Mainland UK). All prices available on Mail Order, Shop prices may differ. Shop & Mail order premises: 33 Ormskirk Road, Preston, Lancashire, PR1 2QP. Open Monday to Saturday 9:30am to 5:00pm. Phones answered from 9:00am. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Ladbroke Computing Ltd. All trade marks recognised.

Due to limitations of space we cannot list all our products please phone for Sony branded disks £7.80 for 10, Bulk disks £5 for 10, Diskboxes from £6.99, Mice from £15, Dustcovers from £3.99, ST Disk drives £59.99. Phone for details of our repair service (ST & Amiga) Repair quote £15. Phone for more details.

Data Pulse

Quantum Mechanics

The cached Quantum Mechanisms used in the Data-Pulse range of Hard Drives are made to very high American Military standard and are covered by a 2 year manufacturers warranty (from date of manufacture). They are all 3.5" mechanisms with a height of just 1 inch and integrated SCSI controllers. They have a typical, effective access time of 9ms utilising a 64K look ahead disk cache.

All Quantum mechanisms used have a Mean Time Between Failures of 60,000 POH (power on hours) and have sophisticated error checking which handles automatic replacement of defective sectors and automatic retry for disk read errors.

All Mechanisms used are Autoparking reducing the risk of damage during transit. They are also very low power which means they can operate without the need for a fan, thus reducing noise.

Ladbroke's Data-Pulse

- ☑ All drives come formatted/ partitioned and tested.
- ☑ DMA device selector and On/ Off switch on front of case.
- ☑ DMA Out port for daisy chaining extra drives/Laser printer.
- ☑ Full metal case providing good shielding, and monitor stand.
- ☑ Choice of controller boards (prices differ):ICD board with battery backed clock & the excellent ICD utilities or GEsoft. Both boards have a data transfer rate in excess of 1Mb per second and come with formatting/partitioning software.
- ☑ All drives include Turtle backup software, MCP programme (a shell program that allows the running of programmes from a single key combination or mouse click), Midistudio & Midistudio Master demo's.

Data-Pulse Drives

Data-Pulse 52Mb GE	£369.99
Data-Pulse 105Mb GE	£479.99
Data-Pulse 52Mb ICD	£389.99
Data-Pulse 105Mb ICD	£499.99

Phone for details of Datapulse hard drives fitted internally in Mega STE's. E.g Mega STE1, SM144 Mono monitor, 2Mb RAM, 52Mb Quantum fitted, ICD software, just £1175

Aries Upgrades

Our 1/2Mb upgrade board can now be upgraded to 2Mb and then 4Mb

Ladbroke Computing have been active in the field of ST Memory upgrades for a number of years and can offer upgrade advice and solutions for the entire range of ST's. In that time our engineers have gained experience in the field and have used that experience to research and develop our own range of upgrade boards.

We have developed our own .5/2/4Mb upgrade board using an in house designed, Multi layer circuit board which measures just 52mm x 62mm, smaller than a credit card. We have acheved this miniturisation by utilising 4 Megabit memory chip technology. The result of this reduction in size is a reduction in cost and more reliable operation, due to the fact that the board resides under the ST's sheiding protecting it from interference and reducing Electromagnetic emissions.

The board is manufactured in the UK and hand assembled in our workshops by skilled technicians. The boards are then thoroughly tested before despatch.

The board now comes in three configurations, .5Mb, 2Mb and 4Mb. By using high density ZIPP RAM chips of different capacities it is possible to start with a .5Mb board and to upgrade it to 2Mb and then 4Mb at a later date.

The boards require some soldering, due to the instability of some plug in devices, but are very easy to fit and come complete with full instructions to fit ANY ST including Mega's (except STE's which use SIMM boards). If your shifter chip is not socketed, you will have to desolder it and install a socket which is supplied.

To check your board has been installed correctly we supply you with a disk which has a memory check program. If for any reason your upgrade should refuse to work we have skilled technicians on hand to offer technical support.

Aries Upgrades (Any ST(F)(M))

512K Upgrade Board	*£39.99*
2/2.5Mb Upgrade Board	*£99.99*
4Mb Upgrade Board	*£169.99*

Our skilled technicians can install the above upgrade boards for £20 including VAT and return delivery.

Aries Upgrades STE

512K SIMM's upgrade	*£19.99*
2Mb SIMM's upgrade	*£74.99*
4Mb Simm's upgrade	*£149.99*

Please check configuration of your machine with our staff before ordering SIMM's upgrades.

16/4 chip upgrade STFM ***£29.99***

Please check the configuration of your machine before ordering. These chips are not surface mount.

Monitors

Atari SM144 Mono	£ 139.99
Atari SC1435 Colour	£ 249.99

The new colour Atari monitor comes with cable and tilt monitor stand.

Philips 8833MkII Colour	£ 229.99

The 8833MKII comes complete with cable.

Philips 15" Cube TV	£ 269.99

A 60 channel, FST, Fastext scart input TV which gives near monitor quality. Includes scart cable.

Midistudio Master	*£99.99*
Midistudio Junior	*£29.99*

Atari STE's

520 STE	£279
1Mb STE (1024K)	£290
2Mb STE (2048K)	£339
4Mb STE (4096K)	£409
1040STE Curriculum (1024K)	£354

ST Secure

ST Secure is a security device which uses a combination of hardware and software to prevent unauthorised use of your ST. The "Timelock" hardware can be installed in your ST in approx 30 minutes with no soldering involved. Then when you switch on your ST you must enter the correct password using the "Key disk" or your ST will reset after 45 seconds. **Only £25 Inc VAT & Delivery**

Printers

Star SJ48 Bubblejet	£239.99
Star LC-20	£149.99
Star LC-200 colour	£199.99
Star LC-24/10	£189.99
Star LC-24/200	£229.99
Star LC-24/200 colour	£289.99

All Star printers include 12 months on site warranty. All printers include ST/Amiga/PC compatible Centronics cable.

A/B Boot Switch	*£14.99*
ST Internal drive	*£53.49*

Golden Image

Golden Image External 3.5" Drive	£64.99

Includes through port and LED track counter.

Golden Image Hand Scanner	£149.99

Includes Touch Up and Deluxe Paint Software.

Golden Image Optical Mouse	£34.99

250 Dpi mouse with mat(ST/Amiga)

Jintech Mouse	£12.98
New Golden Image Brush Mouse	£19.99

The Natural way to draw(ST/Amiga)

New Golden Image Brush Mouse + Deluxe Paint	£24.99

Emulators

PC Speed,(XT)	£ 99.99

Please state STFM or STE version.

AT Speed	£ 150

Includes DR DOS

AT SPeed C16	£ 249.99

Includes DR DOS 5, Socket for 80C287 Co-Processor, Norton factor of 8.2

AT Speed-STE Adaptor	£24.99
AT Speed-Mega Adaptor	£24.99
Spectre GCR Including ROMs	£ 409.99

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POWERED UP

I use my STFM with a monitor, printer and external drive all connected to the mains with a four way adaptor. To save time, I leave everything switched on and power them all up by using the mains plug. A friend told me that this was potentially dangerous and may damage my machines. Is this true?
H Archer, Derby.

***stf:** If machines were designed to be switched on at the mains then they would not be fitted with switches. If you have a problem with your mains supply at any point – a power surge is always possible – then you are risking four devices at once, but if you switch them on one at a time only the first item would be damaged. It cannot possibly save you more than ten seconds to turn on your peripherals individually, so do it this way. Always remember to switch your peripherals on before the ST to prevent any possibility of damage to your machine.*

DEAD ST

I have been using my 1040STFM happily for two years and it has suddenly died on me. The screen on my monitor remains blank and the disk drive is not accessed although the power indicator light does come on. I have taken it to a local repair shop and they have said they can't find anything wrong with it, so they very kindly did not charge me anything for their trouble. What do you think is wrong with it and where could I get it fixed?
John Janes, Havant.

***stf:** It is not easy to diagnose what is wrong with a broken-down machine without actually seeing it. Take or send your machine to a recognised Atari repair centre such as WTS Electronics Ltd. They offer a diagnostic service for £15, after which they send you a quotation for the actual repair. WTS can be contacted on ☎ 0582 491949. Other repair services often advertise in STF and you may find one more local to you.*

VIDEO NASTIES

I have been trying to record short animations from my ST onto video tape via the TV aerial socket. I have tried tuning a spare channel on the video to the ST's output but, although I can get the sound through, I can't get a very good picture – it's just a mass of wavy lines. Can you suggest a solution?
Richard Coxhead, Gillingham.

***stf:** The problem here is that the ST's RF output and the video recorder's RF output are on or near the same frequency – usually 38 or 39 on the VHF band. This causes a clash between the two signals. You can adjust the video recorder's output frequency by turning a small screw on the back marked 32-40 which indicates the output channel frequency. Refer to the video recorder's manual if you are not sure what this looks like. Turn the screw fully to the 40 position and then insert a pre-recorded video tape and play. Switch your TV to its video channel and you find there is no picture – but don't panic! You now have to tune your TV to the new output channel of the video – usually there is an automatic tuning facility. Refer to the TV's manual if you are not sure about this. You should now be able to pick up the ST's output on the video recorder and produce your animation. IMPORTANT HEALTH WARNING: TVs and video recorders use high voltages which can kill. Do not open them up, and never tamper with any equipment unless you are sure of what you are doing. If you are not sure of yourself, or if your TV and video are rented, call an engineer to make the adjustment for you.*

Scan, digitise or – er, lock that gen!

I am interested in getting into art and graphics on the ST, but I am a bit confused by the various hardware options available. Could you please explain the differences between scanners, digitisers and genlocks and what they are used for?
E L Brown, Corsham.

***stf:** Each device is used in different ways for varying purposes. A scanner works rather like a photocopier by scanning the page with a strong light source and creating an image in memory in a form that can be used by your ST. This device is used to transfer photographs, drawings or text from the printed page into an art or graphics package to be manipulated and used as you need it – usually to be imported into a DTP package.*

● How *do* you get the real world into an ST?

A scanner can come in two forms: either a flatbed or a hand scanner. A flatbed scanner is a large table-top device which can handle documents up to A3 in size and can be very expensive. There are also A4 versions available that are not quite so expensive but are usually out of the price range of the home user.

The other option is a hand scanner. This is rather like an overgrown mouse which you use by dragging it across the picture in a smooth steady movement. The scan width is usually about 105mm, so you have to make several scans to copy an A4 page. Hand scanners vary in price from £100 to £250. The Naksha Scanner costs only £99 and is available from Naksha on ☎ 0925 56398.

A video digitiser is an add-on which can take TV and video pictures from video cameras, TVs, video recorders and laser disk players and convert them to an ST graphics format. Most digitisers work best with still pictures (meaning simply that you can do better if your VCR has a good freeze-frame facility) and produce monochrome output. The VIDI ST digitiser from Rombo can grab pictures in "real-time" (from a moving picture) at a rate of 12 frames, or pictures, per second. With various add-ons and accessories, you can grab colour images. The basic VIDI ST can be obtained from MJC Computer Supplies (☎ 0462 481166) for £84.95.

A genlock is a device which enables you to mix video output with high quality ST-generated graphics and is ideal for creating titles for videos or graphics presentations. Genlocks tend to be expensive devices and are not generally used in the home. The GST Gold 40E genlock is a German import and costs about £250. Contact Ladbroke Computing on ☎ 0772 203166 for availability.

See our special feature on using your ST for video in STF 24 for a more detailed look at what you can do and the hardware available.

DEGAS TIPS

Here are some *Degas Elite* tips I have not seen printed anywhere before. To change the drawing colour while in a workscreen, use the up and down cursor keys. To swap to another workscreen, press the number of the screen you want by pressing the appropriate screen number on the numeric keypad. To change the cursor shape while in a workscreen, press <Tab> and the left or right cursor keys to scroll through the various shapes.
M Heard, Pill, Bristol.

SPLIT DECISION

I have a modem which can operate at 1200/75 baud but can't find any software which supports this configuration.
Peter Walker, York.

***stf:** Split baud rates are very difficult to program and rarely needed – even Micronet, which originally used 1200 baud transmit rate and 75 baud receive, switched before it closed. FaSTcom (£49.95 Atari ☎ 0753 533344) is the best of the few packages that support split rates.*

RADIO HAM NEEDS HELP

Is there such a thing as an RTTY (Radio Teletype) program available for the ST? I have all the other equipment I need to receive RTTY but not the software. Where would I find this type of program?
S Foster, Derby.

***stf:** The ST Club have a selection of radio utility disks available. Disk COM.15 has a program called WORLI v4.2, which is a packet radio mailbox program merged with PACK-ET-TERM. A program called YARP is also included on the disk, which costs £1.45 from the ST Club ☎ 0602 410241.*

BACKING UP

When I buy any new games or serious software I always make a backup of the original and work – or play – from the copy and put the original safely away. To do this, I use the Blitz backup device which plugs into the printer and disk drive sockets on the back of the ST. The problem is that the printer socket is starting to feel rather wobbly and I am afraid that I may be causing damage to the main circuit board of my ST. Is there any way I could leave both the Blitz lead and the printer lead plugged in and switch between them?
S Nelson, Sunderland.

***stf:** First of all, remember it is illegal to copy or back up any software for any reason whatsoever without the permission of the copyright holders. Games publishers rarely give such per-*

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mission. Even though you are making backups for your own use, you are still breaking the law.

However, there is a unit designed for switching between two parallel devices called a data switch box. Maplins supply a 25-way D plug switchbox with two outputs for £12.95 plus carriage, part number ZA62S. If there isn't a Maplins shop near you, you can contact Maplins mail order on ☎ 0702 554161.

AMERICAN IMPORTS

I am going to the United States later this year and I thought this would be a good opportunity to get some good American software and hardware without the $1 = £1 price conversion. Does US software and hardware work properly on a UK STE? I am thinking of getting a Spectre GCR Macintosh emulator.

M George, Pinner.

***stf:** US software and hardware work fine on any UK issue ST or STE. The only problem that may occur is if you buy something that runs from the mains supply. If it has an internal 110V 60Hz (US) power supply, then it has to be replaced by a 240V 50Hz (UK) equivalent. If an external DC power pack is used, it would be easy enough to get a UK DC power pack off the shelf from Maplins or Tandy. Items that take their power from the ST direct from the cartridge port such as Spectre GCR work with no problem. But remember: you may have to pay VAT and duty on any item purchased abroad.*

DEADLY VIRUS

Can you help me with a virus problem? I have had several virus infections in the past and have always managed to get rid of them using a virus killer but now my ST has been permanently infected. When I use the virus killer program, the message "Your computer is already infected by a virus" appears and my ST returns to the Desktop. How can I get this virus out of my ST's hardware?

R Medford, Dublin.

***stf:** First of all it is impossible for a computer virus to infect your machine permanently. A virus hides in your ST's RAM memory and copies itself to disks which are not infected. When the machine is switched off, the RAM is wiped clean – thus destroying the virus. If you encounter a virus every time you use your ST, then it is likely that all your disks are infected – including your virus killer disk – and what you have to do is repair them.*

Since a virus is loaded into memory when you boot from an infected disk, follow this procedure to clean your virus killer disk. The Ultimate Virus Killer v5 (UVK) is recommended for repair of your disks – the version on STF Cover Disk 26 should be all you need.

1. *Switch off your machine and leave it for a couple of minutes. Do not just reset the machine because some viruses can sometimes survive a reset.*
2. *Switch on your ST without a disk in the drive. You have to wait a while for the Desktop to appear – don't worry, this is normal. The Desktop appears in Low Resolution. Do not insert your virus killer disk yet. Instead, go to the Options menu and select Medium Resolution from the Set Preferences option.*
3. *Now insert your virus killer disk and use it to check itself. You should not get the message about your machine already being infected.*
4. *Once your virus killer disk is clear, remove it from the drive and open the write-protect tab. That is, move the small black tab so you can see through the hole. This prevents anything from being written to the disk – and that includes viruses. You should always have your virus killer disk write-protected and never use it for anything else.*
5. *You can now start working through your disks and checking them for the virus, repairing disks where necessary.*

WARNING: Do not use your virus killers on games disks unless they have a specific game repair option. Games disks can be destroyed by a virus killer as effectively as by a virus because most virus killers interpret the unusual bootsectors of games disks – the things that enable them to load – as viruses.

Remember always to boot from a virus-free disk, always check new disks for the presence of a virus, never check a new commercial games disk (you could destroy it) and always keep disks write-protected where possible. The full version of Ultimate Virus Killer which recognises most games bootsectors is £9.99 from Douglas Communications ☎ 061 456 9587. For more details on the viruses that can infect your ST and what you can do, see STF 26.

My Degas is looking like El Greco

I am having problems with printing picture files from within *Degas Elite* combined with my Citizen 120D printer. I am using the Epson FX-80 driver supplied with *Degas*, but the resulting printout appears to be vertically compressed. Can I alter the printer driver in any way to compensate for this effect? In contrast, my printouts with *HyperPaint* seem to be perfectly proportioned.

N Spencer, Huddersfield.

***stf:** The program you need is called PRNTMAKE.PRG by Tom Hudson, the author of Degas Elite. It is a small utility which enables you to make your own Degas Elite printer drivers by following on-screen prompts. You need to sit down with your printer manual handy and enter the Escape codes as requested by the program.*

Even if you are not an expert, it takes very little time to produce a working printer driver. By trial and error it is possible to configure a set of printer drivers which enables you to produce normal, double and quadruple density screen dumps. The program is on disk GD774 from Goodman Enterprises (☎ 0782 335650) for £2.75. The printer driver you produce can be used in conjunction with INSTALL.ACC on the same disk to replace the <Alternate>-<Help> screen dump routine to produce printer output from within any GEM application.

ANY OLD TOS

I have a 520STFM upgraded to 1MByte of memory with TOS 1.09 installed. I would like to run some older programs which can only work on the older versions of the operating system. Is there any way I could simulate the older TOS?

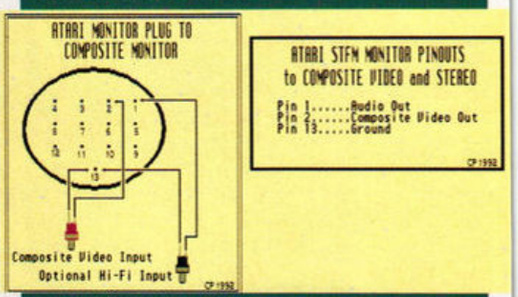
D Holland, Alford, Lincs.

***stf:** Yes. TOS1.0 is available from the ST Club (☎ 0602 410241) on disks TOS.01 and TOS.02*

Green screen

I have just been given a green screen monitor and I was wondering what connections to use to make up a suitable lead. The manual for the monitor says that it uses composite video input via a phono plug on the back. Can I use this monitor with my STFM? Could you provide a diagram for the connections?

R Phillips, Warrington.



● Those connections in full, with not a pin out...

***stf:** There should be no problem with connecting the monitor to your machine although you do not mention if there is sound input on the monitor. Let's assume there is and provide an audio output from the ST's monitor socket as well. If there isn't any sound input on the monitor, then the audio lead can always be run to a hi-fi system. See the diagram above. Pin 1 of the ST's monitor port is the Audio output, Pin 2 is the Composite Video output and pin 13 is the ground.*

All the parts you need are available from Maplins ☎ 0702 554161.

- *13-pin DIN plug, part no. JW95D £1.45.*
- *Phono Plug (Red), part no. HQ58N £0.18.*
- *Phono Plug (Black), part no. HQ54J £0.18.*
- *Two metres of 2-core screened cable, part no. XR08J £1.20.*

Cut the cable into two one metre lengths. Connect pin 1 of the 13-pin DIN plug to the central connection of the black phono plug and pin 13 to the outer connection of the black phono plug. This is the audio connector. Now connect pin two of the 13 pin-DIN plug to the central connection of the red phono plug and pin 13 to the outer connection. This is the composite video connector. These are the only connections required. FORMAT HEALTH WARNING: If you are not used to soldering or are unsure of the connections do not attempt to make this lead. Incorrect connections can damage your machine. Find someone who can solder, ask your local TV repair or electronics shop to make up the lead for you, or contact cable specialists Meedmore on ☎ 051 521 2202.

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for £1.45 each. The version on the first of these disks is the original disk-based version of TOS, and the other contains the first ROM-based version. Boot up with either of these disks and your machine acts as if it were an early TOS machine. You should have no problems running a disk-based TOS on a 1MByte ST – but on a 520ST you'd lose a large chunk of memory.

PC COMPATIBILITY PROBLEMS

I have been using ASCII files produced on my STE at home to transfer files to a PC-compatible at work. All went fine for a few months, but now the PC refuses to read my ST disks at all. Disks formatted on the STE are supposed to be MS-DOS compatible, but this does not seem to be the case. Can you think of any reason why the STE disks are no longer being read by the PC?

P Taylor, Alford, Lincs.

***stf:** The STE produces MS-DOS compatible disks when they are formatted using the Format option in the File menu on the Desktop. Have you recently started using a disk formatting utility from a PD disk or a Cover Disk? Any formatting utility sets up its own formatting routine which may not conform to MS-DOS standards. If you have, and you are using extended format options such as 11 sectors or 82 tracks, then your disks definitely are not in MS-DOS format. Your best option is to format your disks from the STE's Desktop or format them on the PC itself – this should sort out the problem.*

STE OR MEGASTE?

I am thinking of upgrading from a 520STFM to either a 4MByte STE or a 4MByte MegaSTE, but I am not sure of the advantages of the MegaSTE over the standard STE – apart from the internal 48MByte hard drive. I have seen the MegaSTE 4 advertised for £1,080 without a monitor and yet, from the same supplier, I can get a 4MByte STE for £420, add a Protar Progate 80MByte hard drive for £437 and an SM124 mono monitor for £120 – and still have £100 left over. What do you think I should do?

R Ellis, Frome.

***stf:** Let's run through some of the new features of the MegaSTE range. The MegaSTE has an enhanced operating system in TOS 2.3 – it can run applications at twice the speed of the STE (16MHz) and also has a maths co-processor to back up the blitter chip and speed up processor intensive applications. There is also a LAN port (Local Area Network) which enables MegaSTEs to be easily networked together, and a VME-standard connector inside to enable easy connection of peripherals such as high resolution graphic cards or PC emulators.*

Some of the features of the new version of TOS include the ability for programs, files, and folders to be placed directly on the Desktop and started with a double click. Up to 20 programs or documents can be assigned to the ST's function keys and started with a single keypress.

Data files can be "dragged" and dropped on program files, which starts the program and automatically loads the document. Each file on your disk can have its own unique icon, or you can use a common icon type for each type of file. New icons can be created and added to the system. There are keyboard commands for almost every option on the Desktop and you can redefine the key commands to suit your own setup. You can now have up to seven GEM windows open at once. Although you can add many of these features to an STE using software such as NeoDesk (£39.95 Electric Distribution ☎ 0480 496666), it makes an enormous difference having it all held in the ROM. Go for the MegaSTE – it is well worth the outlay.

MEMORY LOSS

I have just used a memory checker program on my 520STE and, to my horror, I found I only had 332,520 bytes available for use for the loading of software. What has happened to the rest of the memory? I only have two small Desk Accessories loaded, so I know they are not the problem.

E Platt, Bracknell.

***stf:** The "missing" memory is actually occupied by the ST's operating system, which is loaded into RAM from the ROM chips. Most programs run quite happily on what's left, but some of the more serious applications for DTP or MIDI sequencing require at least 1MByte to operate. Unfortunately there is nothing you can do to obtain more space in RAM other than upgrading the memory. Since you have an STE, you can expand the memory to 1MByte very cheaply and easily by inserting two more 256K SIMM memory modules – they just plug into the*

→

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TOS ERRORS

After long work sessions, my 520STFM almost always seizes up when I am loading a new program, leaves a cryptic error message and then crashes. The message I get is "TOS Error # 39." What the hell does this mean and are there any steps I can take to prevent it happening again?

N Martin, Camberley.

***stf:** The message you are getting means the memory is full and there is no more room to load and run an application. You are probably falling foul of the old "40 folder bug." When your ST reads a new disk or a new folder on a disk, it stores the directory in an area of memory. This can save time when the directory needs to be displayed again because the machine can fetch it directly from memory instead of re-reading the disk. When you insert a new disk or exit from a folder, the directory held in memory is supposed to be deleted. Unfortunately, thanks to an operating system bug, this does not happen and the amount of memory used by the stored data gets larger and larger until there is no more room. After 40 directories are read, the system crashes.*

Luckily there is a solution in the form of an AUTO folder program called **FOLDRxxx.PRG.** *This is a Public Domain utility that fixes the problem by enabling as many folders as you like to be read. To set the program up, you must copy the program to an AUTO folder and rename it by means of the Show Info option in the File menu. The three x's in the filename are replaced by the number of folders you wish to access – that is, renaming FOLDRxxx.PRG to FOLDR200.PRG enables you to access 200 folders without problems and uses up about 29K of memory. If you wish to set up 300 folders, then the filename must be renamed to FOLDR300.PRG, and so on. Of course, the higher the number of folders selected, the more memory is required to cope with the data.* **FOLDRxxx.PRG** *is available from the ST Club (☎ 0602 410241) on disk UTI.08 for £1.45.*

SCREEN DUMP PROBLEMS

I am having problems producing printouts from programs by using the Print Screen option or by pressing <Alternate> and <Help>. All my printouts consist of thick black lines overprinting each other. I have an STE with TOS 1.62 and a Panasonic KX-P1123 printer. Am I doing something wrong with the ST or the printer?

Paul Coates, Swansea.

***stf:** No, you are not doing anything wrong. The problem is that the ST's Screen Print routine is configured for 9-pin Epson compatible printers and therefore does not work with a 24-pin printer. The solution is to use a small program which replaces the built-in routine with its own. You need* **PRNTMAKE.PRG** *and* **INSTALL.ACC** *from Goodman Enterprises on disk GD774. This*

Assembly pointers

ST FORMAT's assembly programming expert Roger Pearson

This issue's pointers deal with viewing a *Degas* picture, programming the GEM header, palette switching and writing your own Accessories

Wouldn't it be handy to be able to display your *Degas* format pictures on-screen without having to load *Degas* itself? This has a million and one uses, from intro screens and backgrounds to just checking what each file is. On this issue's Cover Disk there's a neat assembly language program that loads any *Degas* file you specify and displays it on-screen. It can be a PI1 (low resolution), PI2 (medium res) or PI3 (high res) file, provided you are in the correct resolution – you cannot load a low res file while in high res. (Well, you could, but it would look a mess!) If you're interested in the file format, *ST FORMAT* 29 brought you full details of how the data is stored – if you missed that issue, see page 78.

GEM HEADER

The listing on the Cover Disk uses many handy routines that should be part and parcel of the assembly language programmer's arsenal. First is the GEM header, which ensures that the program uses only the memory it needs. The GEM header is very necessary because when a program is run it is allocated all the free memory. Using `mshrink` returns any excess memory to the system. Also, you need to allocate some memory to a user stack which starts at the address `ustk`. This stack grows upward in memory, hence the allocation of 250 longwords of space *before* `ustk`. Without the GEM header you wouldn't get very far in your programming efforts – it is always necessary if you are going to use GEM in any way.

DESKTOP PALETTE

If you display a *Degas* file on-screen with a palette different from that of the GEM Desktop, then exit from the program, the Desktop switches to the last palette. This can result in some garish and often unreadable Desktops. Therefore it is good programming practice to restore the Desktop palette to its original colours. The following helps **Arthur Small** of **Devon,** who wrote in to ask how to restore the Desktop palette after displaying a *Degas* file.

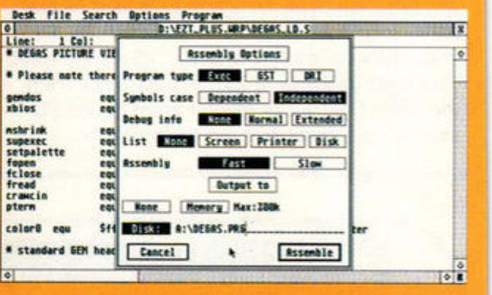
You can find the colours used in the Desktop at the address `$ffff8240`, which stores the palette. This address is held in "protected memory" – an area of memory not normally accessible – so you need to access it in supervisor mode – otherwise the ST would immediately crash. This can be done by passing a subroutine to the XBIOS function `supexec` which can execute a subroutine in supervisor mode. To do this, copy the contents of the address `$ffff8240` to the contents of memory held at the address pointed to by `dpalette`. When you exit from the program you can restore the palette by doing the reverse – placing the contents of the address held at `dpalette` back into the memory referred to by the hardware palette address.

You do this by looping with dbra. The mnenomic dbra means "decrement and branch until false" and is used like this in the subroutine savecolors:

```
dbra d0,savec
```

Here the value in `d0` is decremented by one, and each time this is done a branch or jump to the `savec` label occurs until the value in `d0` is false (negative). Initially the value in register `d0` is given the value 16-1 because we want to loop 16 times. It is common to see programmers set the value to 16-1 so that they are aware of exactly how many times the loop is to occur. This is because other loops loop until a value is 0. It can get confusing. Here the number in register `d0` starts at 15 and is decremented 16 times until 0. (In computing, counting always starts or ends at 0.) Then, –1 is reached and the loop is ended.

Next you get the screen resolution and the address of the screen and store them at `res` and `screen` respectively, for use later on. Don't forget, the ST has three screen resolutions: low, medium and high res – the first two are both available on a TV or colour monitor, but for high res you need Atari's high res mono monitor, the SM124, £109.99 from Best Prices ☎ 0903 700714.



● The DEGAS_LD.S file from the Cover Disk being assembled from the *Devpac 2* editor as a .PRG, the normal GEM file extension to drive A, the internal floppy drive. The resultant executable file is *not* on the Cover Disk because you really need to assemble your own version with the *Degas* file you want to load specified in the source code.

OPEN THE FILE

To load a *Degas* file from disk into screen memory – which is the same as showing it on your monitor or TV screen – use the standard GEMDOS function `fopen`, which opens a file by passing the function the address of the file name and a flag (a specific code or number). The address of the filename is shown in the source code as:

```
pic_name dc.b     "CLIP.PI3",0
```

Here `pic_name` is a label that holds the start address of the imaginary filename CLIP.PI3. (As with all labels, you can replace `pic_name` with any name you like.) The `dc.b` means define a constant of byte length – in other words, allocate space in memory by the amount following `dc.b` – in this case, allocate a byte for each character of the string. After `dc.b` you should place the name of your favourite *Degas* file. Note that if you have a hard drive or second drive, or the *Degas* file is held in a folder, then you must spec-

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program and Accessory enable you to create you own customised printer driver and screen dump routine for use with your printer. You can contact Goodmans on ☎ 0782 335650 and the disk is a bargain for £2.75.

INK JET COMPATIBILITY

I am thinking of getting the Canon BJ-10ex Bubblejet printer for use with my ST. Will my existing software be compatible with this printer? I don't want to pay for something I am unable to use. I use *1st Word Plus*, *Degas Elite* and *Personal Finance Manager*, among others.

Jon Watts, Exeter.

stf: Yes, you can use the Canon BJ-10ex with the ST. Most if not all "serious" packages are now supplied with drivers for this printer. If you don't have a suitable driver with your software, then contact the software producers and they should be able to supply it for you. Public Domain libraries also have drivers available for practically every printer on the market – see page 72 for FORMAT's directory.

BUZZZ WORDS

I use my ST with a pair of booster speakers and headphones to improve the sound output with no problems at all. However, when I connect the output from the ST or from *Replay Professional* to my hi-fi the output is drowned out by loud buzzing. This happens whatever input I use, yet all other components connected to the hi-fi work perfectly. Have you any idea what may be causing this?

Peter Gaydos, Wuppertal, Germany.

stf: Considering you are having the same problem with the Replay output as well, this sounds like a grounding problem with the leads you are using to connect your ST to the hi-fi. Check all the connections of your phono leads to make sure that there are no loose strands of wire shorting between cores in the plugs. If this doesn't work, then replace the lead completely.

EASY TEXT

I am having a problem with *Easy Text* v1.02 on my 520STFM. When I try to open up a new frame, I get the message "No more room to store this type or size of frame. Please consult your manual." I have studied the on-disk manual but I cannot find any reference to this problem.

E Webster, Early, Reading.

stf:* Easy Text *comes in 0.5MByte and 1MByte versions and they should both be on your disk in separate folders. If you only have the 1MByte version on your disk then contact zzSoft on ☎ 0422 845528.

DOUBLE SIDED

How do I transfer files from two single-sided disks to one double-sided disk? I can find nothing in the manual which enables you to define which side of the disk to put a program or a folder on. Also, when I copy the files of an auto-running program from a →

looks at some pictures and explains the handy viewing routine included on this issue's Cover Disk

ify the path. So for instance if the high res *Degas* file called "MYPIC.PI3" was held in a folder called PICS in drive A (the ST's internal floppy drive), then you should write:

```
pic_name dc.b    "A:\PICS\MYPIC.PI3,0
```

Similarly if the *Degas* file was on drive B (but not in any folder), then you would write:

```
pic_name dc.b    "B:\MYPIC.PI3,0
```

Don't forget the null or 0 at the end of the file spec. GEMDOS always looks for a null to signify the end of a text string. Most assemblers would not be able to assemble without a null delimited string. If you left the 0 off, you would probably get an error message when assembling like "string too long" or something similar.

The flag specifies what we want to do with the file. These flags are: 0 for read only; 2, write only; and 3, read or write.

Since you only want to read (load) the file, you pass the value 0 to the function. If the file can be found and accessed, then a number is passed back to you via register `d0.` A negative value here means an error has occurred; a positive value means the number can be used to access the file further. This number is known as its handle. Note that no error checking is done and if the program fails to find the *Degas* file, or the file is corrupt or there is no disk in the drive, then the program probably just crashes or locks up your ST.

READING A fiLE

When a *Degas* file is saved, the current palette and current screen resolution are saved along with the actual bit-mapped picture data. This means that as soon as you have opened the file you can load the palette into a 17-word buffer called `pichead,` so that you can pass this buffer to the XBIOS routine `setpalette.` If this weren't done, the picture would be displayed in the current palette. Before you continue to load the rest of the file you should check the resolution of the file to see if it is suitable for displaying. The value stored in the first word, low byte of pichead can be checked against the value you have stored in `res.` If these values agree, the program can go ahead. It should also check to see if the file is compressed: this is revealed by the value `#$80` in the first byte of `pichead` and identified by the file extensions PC1, PC2 and PC3 instead of the usual PI1, PI2 and PI3. Obviously if you have specified a PI file this should not happen, but what if you decide to use the GEM fileselector to load files? You could then have your ST trying to load a compressed *Degas* file as a standard uncompressed file, which would probably crash the ST.

DISPLAYING THE PICTURE

Once the program is satisfied it has a picture it can display, it can load the rest of the file, containing the bit-mapped data. Load this into screen memory and it is automatically displayed on screen. So now we pass the address of the screen and the number of bytes needed. Note that if you didn't want to actually display the picture immediately you could specify a different place in memory and hold the picture there until you wanted to display it. Next month we look at this very technique, plus the saving of a *Degas* file.

Finally the routine should close the file. This doesn't affect the file you have loaded in any way; it's just that you don't want to do anything more with it. So you give back the handle to GEM. But first you have to stop everything – once you have loaded the file into screen memory you want to look at it, don't you? To do this the program is effectively halted with a function that waits for you to press a key. This function is rather useful because it doesn't echo (short for *echoplex)* your keypress on-screen – you don't even very briefly need to see what key was pressed; but if you do, use the GEMDOS function `Cconin(),` which does echo a key-press.

After you have pressed a key (a mouse click will not do the job) the program restores the Desktop palette and then exits cleanly back to the Desktop using the GEMDOS function `pterm` to do so. If it didn't exit via this function the ST would probably crash – not perhaps an important crash, considering you have finished with your program, but it's far better to exit correctly and smoothly.

DIY DA

I am trying to write my own Desk Accessories using assembly language but I'm not sure what basics I really need to include. Is there a shell program that gives me the essentials of the source code?

Gary Chaloner, Cheshire

stf Your wish is our command! On this month's Cover Disk there's a general Desk Accessory assembly language shell by reader Geoffry Green of Rotherham. It is well commented and should be useful to many programmers. Many thanks, Geoffry!

JARGON BUSTERS

Degas One of the first art programs for the ST, it set the file format still very much in use. The current version, *Degas Elite*, is £25.99 from Electronic Arts ☎ 0753 549442.

GEM Graphics Environment Manager. Part of the ST's operating system. Other parts include GEMDOS, the GEM Disk Operating System, and the XBIOS.

GEM Desktop The standard screen display your ST gives you when you switch on, with icons for Floppy Drives and the Trash can.

Label A marker used to define a specific place in the program.

Palette A list of the colours currently in use.

ROM Read Only Memory. Holds the ST's operating system, including the GEM Desktop.

Shell A program containing the bare essentials of the source code that sets up the basic code you always need.

Trap Execute a subroutine held in the ST's ROM.

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single sided disk to a double sided disk, the copy I make never runs. Please help – I am getting frustrated by this.
A Gaunton, Lyme Regis.

***stf:** First of all it sounds as if you are trying to copy commercial games disks. This is illegal. By doing this you are breaking the law, so please refrain from trying. Secondly, auto booting games run because of special code on an area of the disk called the bootsector. This code is not visible in a Desktop window because it is not a file – therefore you cannot drag it from one disk to another. Lastly, with the exception of the specially formatted STF Cover Disks up until this issue, a floppy disk does not use "side 1" and "side 2" in the same manner as a record or a cassette tape. The data is recorded alternately on one side and then the other in the first available tracks and sectors on the disk. So, to copy two single-sided (SS) disks to one double-sided (DS) disk, you simply drag the files from both the SS disks to the DS disk. You could, of course, create separate folders on the DS disk for each of the SS disks in order to keep the files separated.*

WHICH DRIVE?

Could you recommend the best external disk drive to add to my system and how much it would cost?
N Craig, Longfield, Kent.

***stf:** There was a roundup of the best external drives in STF 28. The Cumana CSA354 Drive came out on top with a FORMAT Gold rating of 90%. It is available for £69.90 including delivery from WeServe on ☎ 0705 325354. It may be a little more expensive than other drives but it is well made and very reliable. Check out issue 28 to decide for yourself which you want.*

1ST WORD PLUS PROBLEM

When I import a READ.ME text file from a PD disk into *1st Word Plus* I can't use the Reformat option to tidy up the text prior to printing it out. When I try to reformat the file, the program seems to treat each line as a separate paragraph. Why is this and how can I cure it?
R Holden, Prestbury.

***stf:** 1st Word Plus uses a control character instead of a space (ASCII 32) in its documents to enable it to format text. Use the Replace option from the Edit menu and enter a space in the edit line of the box marked "Replace." Then use the down cursor arrow to move into the edit line of the box marked "With." Press the <Control> key and the number 6 and a strange character (ASCII code 30) appears in the edit line. Select the "All" option in the Scope field and click on OK – all the spaces in the file are replaced. You should now be able to reformat your Read.Me document with no trouble.*

DODGY KEYBOARD

I have recently started having problems with my keyboard. Sometimes some of the keys on the right hand side seem not to work at all, and at other times they work perfectly. It has become very frustrating when I am trying to produce a letter or other document and the keys suddenly pack up. Have I contracted a new and unusual virus?
D Jackson, Whitley Bay.

***stf:** It's unlikely to be a virus with these symptoms. It sounds as if you may have an intermittent problem with your machine's keyboard matrix causing some parts of it to "die" at various times. Take it to your local repair centre or send it to WTS Electronics Ltd. They offer a diagnostic service for £15, after which they give you a quote for the repair costs. WTS Electronics are at Studio Master House, Chaul End Lane, Luton, Beds. LU4 8EZ. ☎ 0582 491949.*

MEMORY LOSS

I have upgraded my 520STFM's memory to 1MByte using the Power 512K RAM expansion. The machine seems to be working properly but I am unable to install the RAMdisk from Cover Disk 31 to be any larger than 256K. How can I check that the extra memory is working?
F J Fishwick, Bolton.

***stf:** Use the Free Space utility program which was also on Cover Disk 31 to show you how much memory you have available. If you only have 375K with no Desk Accessories loaded, this means your upgrade is not working. If it was installed for you, return it to the people who did the job and they should fix it for free. If you installed the upgrade yourself, then you're likely to have to pay to have it checked. If there are no local computer repair services near you, WTS Electronics (☎ 0582 491949) offer a diagnostic service for £15.*

STOS surgery

More of your *STOS* programming queries sorted by Asa Burrows

THE KEY TO THE PROBLEM

Please can you help. I am trying to write a utility with *STOS* but I am already stuck on the menu. I have programmed a routine to check for a keypress of about ten keys, but I have found that the routine only recognises a keypress sometimes – most of the time it doesn't. It's driving me mad. I wouldn't be surprised if it's something simple – I am still a learner.
Mark Moffatt, London.

***stf:** This is a cut-down version of Mark's keypress routine. (The ↵ symbol simply means that a single line of listing wouldn't fit on one of our column lines here.)*

```
100 if inkey$="a" or inkey$="A" then ↵
    goto program 1
110 if inkey$="b" or inkey$="B" then ↵
    goto program 2
120 if inkey$="c" or inkey$="C" then ↵
    goto program 3
130 goto 100
```

Many learners could easily miss the problem here. This is what the routine should be.

```
100 a$="" : while a$="" : a$=inkey$ : wend
110 if a$="a" or a$="A" then gosub program 1
120 if a$="b" or a$="B" then gosub program 2
130 if a$="c" or a$="C" then gosub program 3
140 goto 100
```

Notice that the version Mark should have done is in fact very similar to the one he actually did. The difference is that the second version is using a `while` *loop on the very fist line, so when a key is pressed the program then checks to see what key was pressed. The reason Mark's version didn't work is that STOS stores all the keyboard presses into a buffer. The* `inkey$` *command is a pointer to that buffer, and when you use it, it returns the character it is pointing at in the buffer but then increments itself to point to the next character in the buffer.*

```
Buffer
K
J
A          Last Character
a          inkey pointer
B          Next Character
c
none
none...
```

Notice in this example that `inkey$` *returns character a the next time you use the* `inkey$` *command, then increments itself to point to character B and so on. If you don't want* `inkey$` *to point to the next character, then use the* `clear key` *command to clear the buffer before you return to the* `while` *loop. Notice too that the second version of Mark's program is using a command called* `gosub` *instead of* `goto` *which Mark seems to prefer. It is best to use* `gosub` *– it makes your program more presentable and easier to debug.*

GOOD HOUSEKEEPING

I'm having a bit of a problem with this program I've written. For some reason when it's running it stops for a second. I can't work out why. I've enclosed a listing of the program.
Tony Blake, London

***stf:** The details of Tony's program aren't vital here, but other STOS programmers might be experiencing the same thing. The problem is that you have too many variables doing things they shouldn't be doing and you have variables that are doing tidily. STOS is garbage collecting. You can get round this problem if you use a dummy variable and use the free function*

```
dummy = free
```

This forces STOS to do the garbage collection, so if you insert this in the right place you can

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THE SKY AT NIGHT

My main hobby is computing and I would like to be able to incorporate it with my other hobby, astronomy. I have searched around all my local ST software shops but I have been unable to find any astronomy software. Do you have any idea where I can get any from?

M Kirk, Weston-Super-Mare.

***stf:** The ST Club PD library have a selection of astronomy disks available. UTI.38 contains* **Star Chart**, *which is based on the Yale star catalogue, UTI.39 contains* **Planet**, *which animates the night sky, UTI.40 is* **Skymap**, *which shows and identifies over 1,500 stars but works in high res only, UTI.48 gives a planetarium view of the constellations and UTI.49 features* **Astrolabium** *which enables you to draw constellations, star names, meridians and different grids. All these disks are great value at £1.45 each. The ST Club are on ☎ 0602 410241.*

STEREO STFM?

I have a 1040STFM I use for processing samples and writing programs – games mainly – using *STOS* and the *STOS Maestro* sampler and software. Is there any way that I can produce stereo output for my music and samples without buying an STE?

N Henty, Middlesborough.

***stf:** Yes, you can produce stereo samples but you need to buy the Stereo Playback and the Stereo Master cartridges from Microdeal. Stereo Master enables you to record and modify stereo samples and Stereo Playback enables you to output the results to your hi-fi even on an STFM. When Stereo Playback was reviewed in STF 22 it received a rating of 82%. Both packages come with software routines in all major versions of the BASIC languages to enable you to incorporate stereo music into your programs. Playback is £22.95 and Stereo Master £39.95, both from Microdeal ☎ 0726 68020.*

DESIGNING KITCHENS

I am looking for a reasonably priced (under £200) CAD package that can enable me to plan and design fitted kitchens and other household fittings for my small business. At the moment I am doing everything by hand and I am sure that using my Mega4, SM124 monitor, 40MByte hard drive and KX-P1123 printer would speed things up. A two dimensional package would be fine – for what I'm doing I don't need a 3D CAD program.

K Caswell, St Helens.

***stf:** FORMAT Gold rated* **GFA Draft Plus** *v3.13 is a suitable comprehensive package for you. It provides all the standard options found in a Computer Aided Design (CAD) package and has a library of over 100 preset symbols included. You can also design your own customised symbols, then add them to the library for future use. There is a detailed 225 page manual, and the disks are not copy protected, so you can easily transfer the package to your hard drive following the installation instructions in the manual.* **GFA Draft Plus v3.13** *costs £99.95 and can be purchased direct from GFA Data Media (☎ 0734 794941).*

LEAD SWAPPING

I have an Atari SM124 high resolution mono monitor for serious use and a portable colour TV for games sessions. Is there a way that I can leave both items plugged in? I am worried about the constant plugging and unplugging of the monitor lead.

E Hill, Ilford.

***stf:** The quickest and easiest way to solve this problem is to use a monitor switcher box. If you plug the SM124 into the unit it doesn't matter that the colour monitor socket is empty when you switch from mono to colour. You can then use your colour TV, disabling the SM124. Best Prices (☎ 0903 700714) provide a monitor switch box for £15.99 including delivery.*

AMAZING DATABASE REQUIRED

I need a database program to store the details of my CD collection. I do not just need the normal fields such as "Artist" and "Title" – I want to go into much more detail. I would like to select the "Tracks" field for a CD and have a list of the songs come up on screen. Then I would like to select a song title and have the lyrics appear. I only have a 520STFM, so some kind of loading of data "on the fly" would need to be employed.

R Nettleton, Sheffield.

***stf:** One inexpensive program that should do the job is called* **Hype**! *It is a* **Hypertext** *package – an information retrieval system based on a series of nested cards. Each card takes up an entire screen and can contain graphics or text, or a mixture of the two. Areas of each screen can be set up as buttons to move to the next layer of information (song title to lyrics, say) or back a level. A demo version of the program is available from Goodman Enterprises (☎ 0782 335650) on disk GD615 for £2.75. Try it. If you like it, you can get the full version for £20 by registering the demo version.*

STOS SPRITES

Here is a short *STOS* routine from **Keith Feeney** of **Leeds** that enables you to get the colour palette from a sprite bank loaded in memory. Normally a sprite bank uses the current colours. The ↵ sign means don't type a return yet – the line was just too long for our columns!

```
10 A=HUNT(START(1)TO START(1)+LENGTH↵
   (1),"PALT")+4
20 FOR X=0 TO 15: COLOUR X,DEEK(A+X*2):↵
   NEXT X
```

ROBOTICS

Andrew Cooper of **North Humberside** asks for details on how to construct an interface to control a robot. The simplest solution would be to use the ST Input/Output Port from Switchsoft (£26.95, ☎ 0325 464423). The device has 13 inputs and eight outputs and is supplied with a manual detailing BASIC control commands to incorporate into your own programs. Couple it with Technic Lego and you should be able construct some interesting robots.

BOMBED OUT

My brother owns a 520STE which has been working fine for the first three weeks but now we constantly get bombs appearing every time we start up the machine and the keyboard and mouse do not work. We have checked all the connections and they seem to be correct. The problem happens with all software, games and PD, and even occurs if we start the ST without a disk in the drive.

Koolsum Adam, London.

***stf:** Your machine has a hardware fault if it will not boot up at all. It is still under warranty, so return it to the shop where you bought it and they should replace it or repair it free of charge. If you bought it privately, then you'll have to have it repaired at your own cost. This is because you buy goods privately at your own risk – if they break down after a while then it becomes your problem. To be sure of reliable service and a fair deal, it's always a good idea to use a recognised repair centre such as Evesham Micros (☎ 0386 765500), who have a fixed repair rate of £65. stf*

make STOS garbage collect before you run your critical section.

PROGRAMMING MUSIC

I am a dedicated ST owner and I am currently learning to play the keyboard, so I obviously have an interest in creating music for the ST. I own a 520 STFM and *STOS*. Can you tell me what music packages are compatible with *STOS*? Is *Quartet*, and if so does it create music using notation and samples? Also what other extras do you recommend like memory, Playback or other hardware or software?

M Shepherd, Co. Durham.

***stf:** Most commercial music packages are compatible with* **STOS**, *although you're likely to have to load their machine code playback routines into a* **STOS** *program bank. You can create music in* **Quartet** *using notation and samples.* **Quartet** *comes with a large selection of sampled instrument sounds. If you wanted to sample your own sounds – voices, say – you'd have to buy your own sampler. The most useful extra would be a hard drive – extra memory is invaluable for storing those samples, which can rapidly get much bigger than you expect.*

BACK ISSUES

If you don't have a copy of any of the previous issues of *ST FORMAT* mentioned in these pages and want one for further information on a subject, turn immediately to page 78 for details of *STF's* back issue service.

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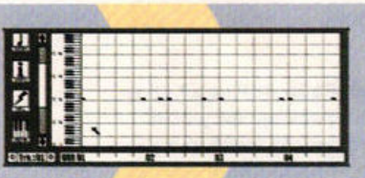
Beautiful noise

Want to get the best from the Sample Playback system in *Sequencer One*? Vic Lennard shows you how

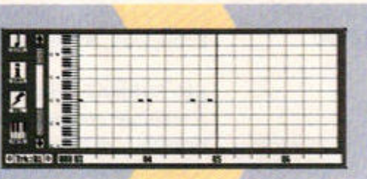
Making music on your ST couldn't be easier, thanks to *Sequencer One* – and it was yours with *ST FORMAT* 30. (If you missed that, page 78 can help restore your street cred and hipness.) But perhaps you'd like a hand to get the most out of the sample playback system. Just follow these simple steps and see how easy it is! The rhythm groove this puts together is on this issue's Cover Disk, but try to get through the process before entering "cheat mode."

1 After loading up *Sequencer One*, go to the "Sample Palette" option in the File menu. You should see METRO.IFF loaded into Patch #1. This is the metronome sound you hear whenever you are recording – it is important if you are playing information into *Sequencer One* from a MIDI keyboard. However, for using the Step Editor to input notes and the Bar Editor to construct a song, you don't need the metronome, so click on METRO.IFF to highlight it and then click on "Delete." Exit one metronome! You also need to go to the Set Metronome function in the Options menu and select "Off" for the metronome – otherwise the sample selected to take the Patch #1 slot is also used as the metronome.

6 The basic drum pattern is a four bar one; don't forget that to leave a gap, you hit the Spacebar instead of clicking on a note on the keyboard. All samples are intended to be played back at C3 – the third C up from the left hand side of the keyboard. If you know absolutely nothing about music, don't worry – this illustration shows where C3 is!



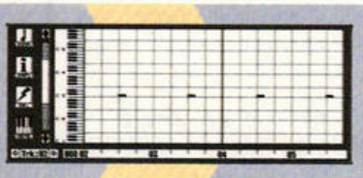
7 To input the bass drum line, you need to click on the C3 key each time the bass drum is to be triggered, and use the Spacebar each time a gap has to be left. The two illustrations here show how the four bar bass drum line should end up – there are two pictures because you can't show four full bars on a single one!



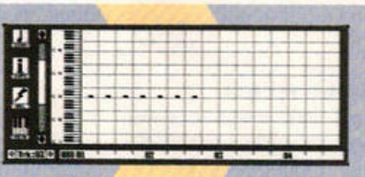
Each vertical line is worth two quavers, so, for example, to get from the first bass drum trigger to the second you need to hit the Spacebar six times. If you make a mistake, use the backspace key to erase each note, or space, back to the start. You can also set quavers for the vertical line gap from the "Zoom" icon.

8 Click twice on the keyboard icon to get the transport bar back and set a tempo of 170. Click on the "Play" icon (or alternatively, hit the F4 key) and you should hear the bass drum line playing back – make sure the volume is turned up on the ST's monitor or the audio system connected to your STE. The meter for "L1" should also be moving up and down. To stop playback, hit the Spacebar – when you are in Sample Playback mode, the cursor can't be moved.

If you've made a mistake, click on the "Delete" icon to put *Sequencer One* into Delete Mode and simply click on the incorrect note(s). If you want to continue inputting notes

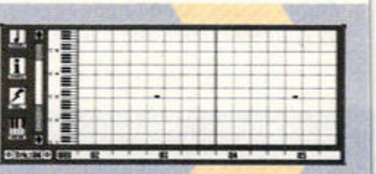


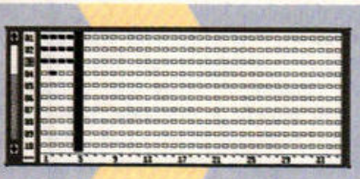
11 Use C3 for note input again and place a snare drum on the third beat of each of the first four bars; your grid should end up like the illustration. Get rid of the keyboard and play the first four bars again, checking Track Info and the Bar Editor as before. Save again!



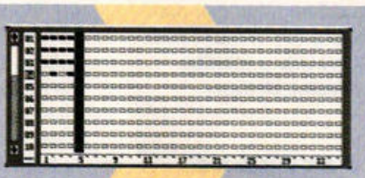
12 Next comes the closed hihat. Set up track three as in this figure and then go to the Step Editor. Click on the keyboard icon and set the Key Velocity to 50. The pattern is only a two bar pattern because you are going to copy this to bars three and four. The missing closed hihat at the end is going to be taken up by an open hihat on track four.

13 Set up track four as in this picture, leave the step editor settings the same and place a single open hihat as in the next picture. You can make life easier for yourself by moving the black vertical line to the beat before the position where the open hihat is going to be placed, and only then clicking on the keyboard. You then just need to hit the Spacebar once to get to the right place.

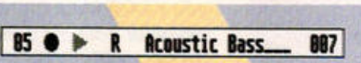




You should have a four bar pattern for track three as you can see in this illustration. Time to save again!



17 Do the same for track four. You can either copy the first two bars to bars three and four or else copy bar two to bar four (since bar three is blank). You should end up with the same as this figure.



18 Go to the Sample Palette and load the ACOUBASS.IFF into Patch #7. Set up track 5 as in this illustration and go to the Step Editor.

19 Set the Note value to a quaver, the Gate Length to 90 and the Key Velocity to 80 (as shown), then input the notes as in the next

GENERAL HINTS

1 Take care with the assignment of the left and right channels. Each channel can only play two samples at the same time. Use LR to give priority to the Left channel but to automatically switch to the Right channel if both of the left voices are in use. RL works the other way around. Using these carefully should enable you to get four voices all the time.

2 If you decide that, for example, the bass line is an octave too high, select individual notes from the Step Editor or blocks from the Bar Editor and use the Alter Notes facility in the Track menu to change the pitch of the selected notes. In a similar way, you can also change the velocities; in the example here, the velocities of the bass

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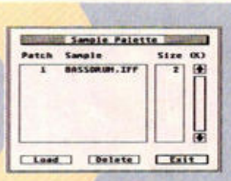
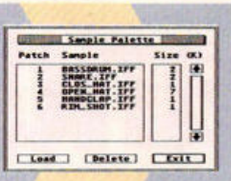
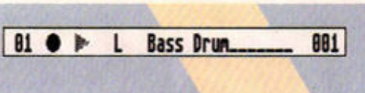
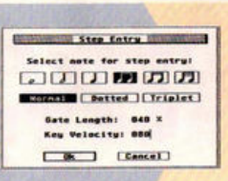








❷ Now load up all the samples you need for the drum kit. Click on "Load" and open the folder where the samples are kept. Now select BASSDRUM.IFF – by clicking on it to highlight it and then clicking on "OK," or by double-clicking on it in the first place. The Sample Palette reappears. Now click on "Patch 1" and BASSDRUM.IFF should appear in that slot, leaving your screen looking like this.

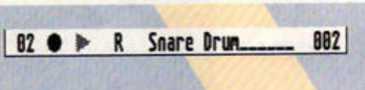
❸ Continue in the same way until you have loaded up SNARE.IFF, CLOS_HAT.IFF, OPEN_HAT.IFF, HANDCLAP.IFF and RIM_SHOT.IFF into the next five slots, and have your Sample Palette looking like this picture. The total amount of memory taken up by these samples is only 14KBytes, which shouldn't cause any problems. Once you've finished with this, click on the exit button. It's also a good idea to save the song each time you get a positive result; use the Save Song function in the File menu.

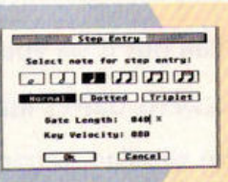
❹ Track 1 of *Sequencer One* is going to be used throughout for the Bass Drum. Click on the MIDI Channel indicator (to the right of the grey triangle) and type in an "L" for the left hand channel. Enter the Step Editor by selecting it from the Screens menu (or by hitting the F9 key) and click on the keyboard icon to make the transport bar at the bottom of the screen change to the keyboard for step-entering MIDI notes.

❺ Now click on any of the three icons to the right of the keyboard and select "quavers" for the Note Type, 40% for the Gate Length and 80 for the Key Velocity, as here. The choice of quavers is because the bass drum line is going to be playing an off-beat rhythm.

from the keyboard but don't want to start from the beginning, click inside the horizontal bar counter beneath the grid and you should see a darker vertical line appear. This shows the current position, and once you click on the keyboard icon to get the keyboard back, this is the position where the first note you input appears. If you move this line, then when you stop sample playback the "Song Position" indicator always goes back to wherever you left this line. It actually replaces the current "Start Position;" to get back to the start of the song either use the "rewind" button or click on the "000" at the left hand end of the horizontal bar counter.

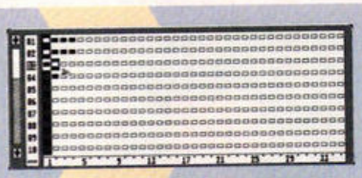
Once you have input the bass drum line, go to the Bar Editor (by hitting the F10 key) and you should see that the first four bars have turned black to show that they are in use. Go back to the Track List screen by hitting the F8 key and the grey triangle in track one should also have turned black for the same reason. Finally, select Track Info in the Track menu (or by double-clicking on the "Bass Drum" track name) and you should see that there have been ten Notes On and Off. Save to disk!

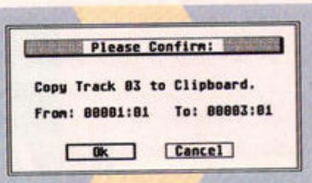


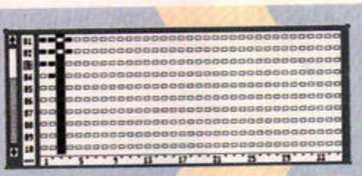


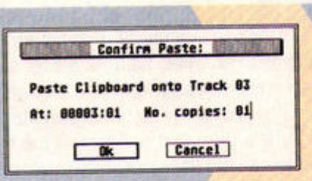
❾ Next set up track two for the snare drum, as illustrated. Make sure you move the black, filled-in circle from track one to track two (by simply clicking in the correct spot on track two) to make track two the "current" track.

❿ Hit F9 to go to the Step Editor, click on the keyboard icon and set the Note Value to a crotchet – the Gate Length and Key Velocity can stay the same for the moment.





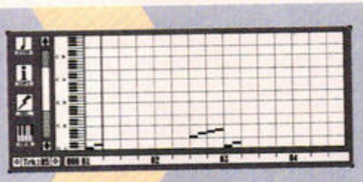


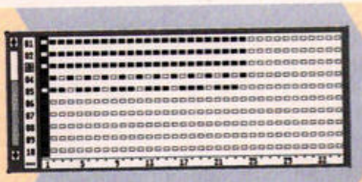


⓮ To copy bars one and two of track three to bars three and four, hit F10 to enter the Bar Editor and click on track #3 to highlight it. Now click on bar one (the cursor changes to a hand), move the mouse to bar two and click on the left mouse button. This selects the first two bars, as shown.

⓯ Go to the Block menu and click on Copy. This brings up the "Copy Track Confirm" box, telling you that bars one and two are to be copied to the Clipboard.

⓰ Click on bar three in the horizontal bar counter to move the "current bar" line (the song position should change to 00003.01) and select Paste from the Block menu. Click on "OK" in the "Confirm" box which appears.





picture – they are C1, D1, F1, G1, G#1, A1, C1, D1. As before, save to disk.

⓴ To get your version to be the same as the song on the Cover Disk, go to the Bar Editor screen, click on Select All in the Block menu and copy the four bars of the first five tracks by using the Copy function that you used above. Now move the current bar vertical line to bar five and select Paste from the Block menu. When the "Confirm Paste" box comes up, change the number of copies to "5." You should then end up with what is shown here.

You now have a good, basic, rhythm groove to which you can add other percussion instruments or violin or piano in a similar way.

AND IF THAT'S NOT ENOUGH...

Next issue we're bringing you more tips on using *Sequencer One*. If you have any specific problems, though, address them to ST Answers – see the coupon on page 27. If you really want to flex those musical muscles, you can upgrade to *Sequencer One Plus* for only £39.95. There are also five more volumes of samples available, each with at least 40 samples – the Percussion and Effects volume has over 80. For details of how to order, see the music offers in issue 30, 31 or 32. For back issues, see page 78.

drum and snare drum could come down by 20 or 30.

❸ Remember to use the ST's Backspace key to erase notes as soon as you have entered them on the Step Editor screen. Once you have played back a track, the Backspace function doesn't work. You then need to use the Delete function instead.

❹ It's a good idea to use keyboard equivalents to mouse clicks wherever possible. You can see a list of these shortcuts if you hit the <Help> button on your ST. If you use key equivalents there is less movement of the cursor around the screen, which has the advantage of increasing the speed you are able to work at.

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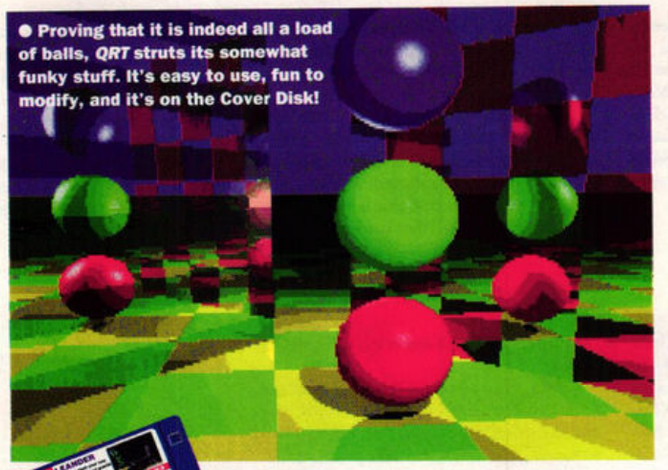
Ray, Trace and Pearl

The BBC do it. Pixar did it with those cutesy lamps. *The Last Starfighter* wouldn't be the masterpiece it is today without it. It's called raytracing and it's the future of computer graphics. Even better, you can put it on your ST right now. Ed Ricketts delves into the world of Phong shading, refractivity indexes and endless chequered floors and still lives to tell the tale



● Proving that it is indeed all a load of balls, *QRT* struts its somewhat funky stuff. It's easy to use, fun to modify, and it's on the Cover Disk!

Have you ever tried creating a scene that looks genuinely realistic on your ST? Something with shadows, reflections and highlights? It's a bugger to do, isn't it? You'd have thought there was a way that your ST could do it for you – after all, computers are good at that sort of thing. Well, there is a way of getting your ST to represent reality, and it's called raytracing.

Raytracing – a process invented by Turner Whitted – is a term that pops up all the time in the field of computer graphics, and, if you're new to the genre, it's almost as confusing as GEM. Actually, it's quite a simple process – if you ignore the hideously complicated maths behind it – to produce the most realistic images you can see on your ST.

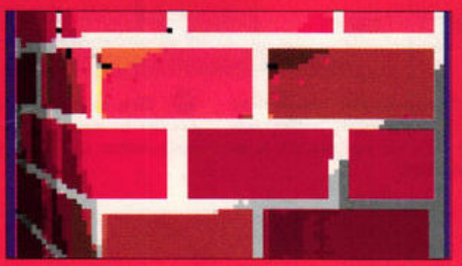
A raytracing scene consists of objects in an imaginary setting, viewed by an observer and lit by some form of light source. The raytracing algorithms trace the path of each light ray which hits an object back to the observer's viewpoint, and set the colour of every pixel on-screen accordingly. The algorithms take into account the object's reflectivity, refractivity, surface colour and so on, as well as the colour and distance of the light source – and any "ambient" or atmospheric light that doesn't come directly from the light source.

The result of all this calculation is a scene that's as close as possible to reality within the limits of a computer model, because the lighting follows natural laws to produce shadows and highlights. Sophisticated effects like Phong and Gouraud shading can improve the basic techniques and produce pictures which, on very high resolution systems, are sometimes indistinguishable from photographs.

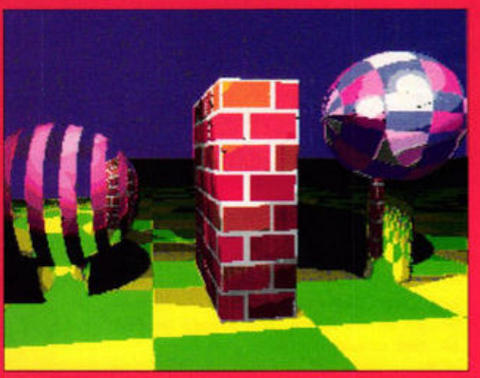
There are really only three raytracing programs of note on the ST, and two of them are yours on this month's Cover Disk. *Pearle* is a fairly simple 16-colour 'tracer which can create animations by producing a series of static frames that are played back as a sequence. It also has built-in gravity. That might not sound so fabulous, but it's great if you want to create realistic animations. For example, you can set up a start frame with, say, two or

HERE'S SOME WE PREPARED EARLIER

On the Cover Disk are some example *QRT* input files that show off a good many of *QRT's* features. Four of the best are WALL_SPH.QRT, ROOM.QRT, TABLE.QRT and PIANO.QRT. The best way to get to grips with *QRT* is to first understand how these example scenes are put together, then perhaps fiddle with them and change one or two objects in a scene to get a feel for the coordinate system.

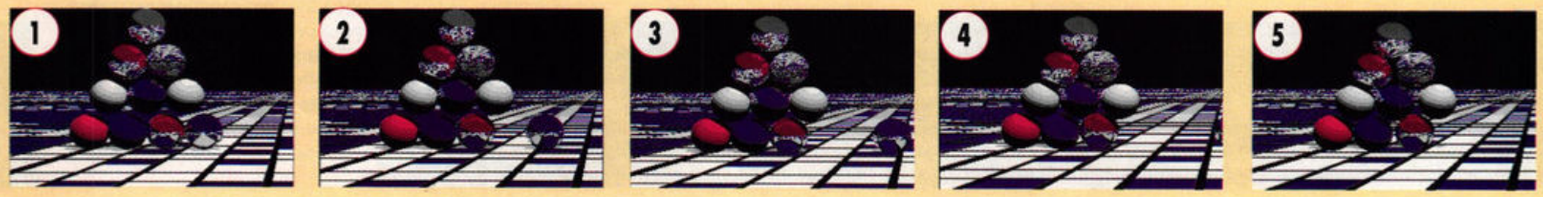


● The brick pattern of the walls is created by defining a pattern section which, when it's repeated along the walls, gives the impression of bricks.



● Even simple pattern mapping can give good results. The sphere on the right has a similar pattern to the floor check mapped onto it, but the program is smart enough to reduce the size of the check squares towards the poles of the sphere, so it looks like a beach ball. The other sphere is a simple coloured ball with mirror stripes on it. Both spheres are resting on cylinders created with the `quadratic` command. Between them is a wall created from parallelograms and mapped with the brick pattern.

THE PYRAMID TRICK



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JARGON BUSTERS

ASPECT RATIO: because *QRT* can produce pictures with varying horizontal and vertical sizes, you need to tell it the ratio between these sizes, so the picture doesn't look squashed. This is the aspect ratio.

PATTERN MAPPING: applying a given two-dimensional pattern, such as a "chessboard" check-square design, to a 3D object like a sphere, so the object becomes "wrapped" in the pattern, and the pattern conforms to the perspective of the object.

PARALLELOGRAM: a shape with four sides and with the opposite sides are parallel and equal in length.

PHONG/GOURAUD SHADING: two advanced rendering techniques that smooth the join between two edges of adjoining polygons in a 3D shape to make it look less "sharp" and more rounded, to give the impression of a more realistic object.

RENDER: in the context of *QRT*, rendering is the procedure of telling the program to process an input file so you can display the picture.

VECTOR: a mathematical way of describing a variable with both a magnitude and a direction. The way *QRT* describes vectors is with x, y, z notation: (20, 100, 35) means a vector that moves from the present point 20 units in the x direction (horizontally), 100 in the y direction (vertically) and 35 in the z direction ("into" the screen).

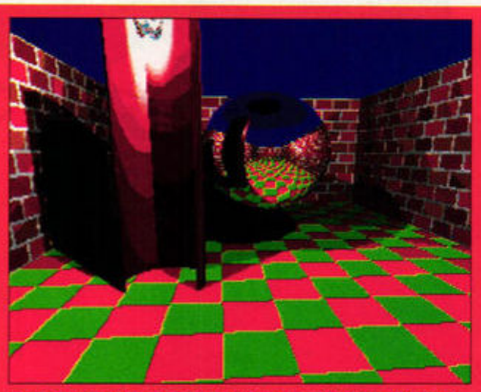
three balls hanging in mid-air, set the program going and it works out the other frames itself, moving the balls according to gravity.

Though *QRT (Quick Ray Tracer)* doesn't cater for animation, it's a much more sophisticated program producing 512 colour pictures in the *Spectrum 512* format and has a number of advanced features like pattern mapping (see the Jargon Busters box at left for an explanation of what that means).

The only commercial package is *GFA Raytrace* (£10 GFA Data Media ☎ 0734 794941). It's not quite as powerful as *QRT* (though it can do limited animations) but it can be a good introduction to raytracing simply because it is very easy to get to grips with.

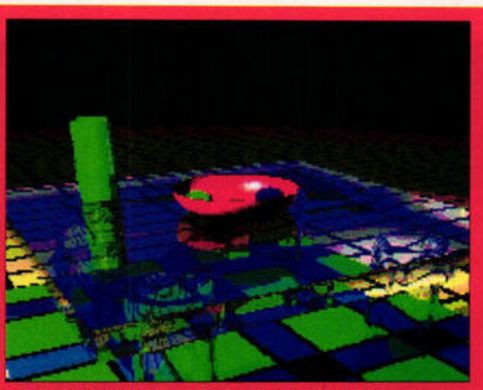
Simpler raytracing programs, like *Pearle*, restrict the objects in the scene to spheres and parallelograms because they're the easiest shapes to work with, mathematically speaking. Anything more complicated such as a parabolic or irregular shape demands far more processor time – and more of that hideous maths – so many raytraced objects are composed solely of blocks.

It's not hard to deduce that the more colours the display has, the more realistic the resulting picture is going to be. After all, in the real world there are no discrete colours – everything blends into everything →



● This is a "classic" abstract raytracing image. The floor is a huge parallelogram covered in a check pattern, as are the walls – three rectangles joined and covered in a repeating brick pattern. The sphere is highly reflective – 90% of its light is reflected back.

The half-cylinder is created using the `quadratic` command. It's simply a shape with the equation $x^2 + z^2 = 50$, which produces a circle with a radius of 50 units. Since we're working in 3D, we get a cylinder. You can specify the limits of a quadratic equation, which effectively defines the shape's size. The z limit is used to "clip" off half of the cylinder, giving an open half-cylinder.



● One of the things *QRT* is really good at: glass. Glass-like surfaces are defined using the "transmission" variable, which sets the amount of light passing through the object. The table top is made of six parallelograms: two for the top and bottom and four for the sides. They are joined together to appear as a solid whole. The four legs are defined by simple quadratic equations that make the cylinders. The "vase" and the bowl on the table are defined in the same way. In the bowl are two spheres. Finally, the main floor is just a huge parallelogram covered in a repeating pattern, and the area under the table is defined with a slightly different pattern. There are two lamps – one each on the right and left. The inclusion of glass surfaces in a scene slows down the rendering time dramatically – this picture took around 20 hours to calculate.

● Advanced objects like this need a lot of careful planning and some logic to ensure the component parts join where you want them to. The legs are defined as "instances." These are objects that are given a name and can be used anywhere simply by using that name rather than respecifying its construction each time – a little bit like object "subroutines." The legs also take advantage of the fact that you can remove certain shapes from parallelograms. They're actually created by joining three parallelograms to form a three-sided enclosure, then removing a triangle shape from one side, giving the leg its slant. You only need three sides because you can't see the back edge.

The piano top is also a parallelogram with a section removed. The strings and keyboard are simple shapes overlaid with a pattern. In fact, the whole piano is made up of straightforward shapes, cleverly joined together to give the feeling of solidity. By far the most complex part is the "woodgrain" pattern, which is defined as a long series of points that make up its lines and curves.

This animation sequence from *Pearle* was created by setting up a pyramid of balls with varying surface characteristics and then moving the bottom right one out of the stack, causing all the others to fall down.

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else. The ST has a total palette of 512 colours, and any decent ST raytracing program bypasses the ST's usual limit of 16 on-screen colours and uses programming techniques in order to display all 512 colours at once.

So why don't we see these fabulous raytracing effects in games? There's just one factor – speed. Raytracing is always very, very slow, because of the massive amount of calculation needed for just one pixel on-screen – some pictures can take upwards of 16 hours to produce, particularly on "humble" machines like the ST.

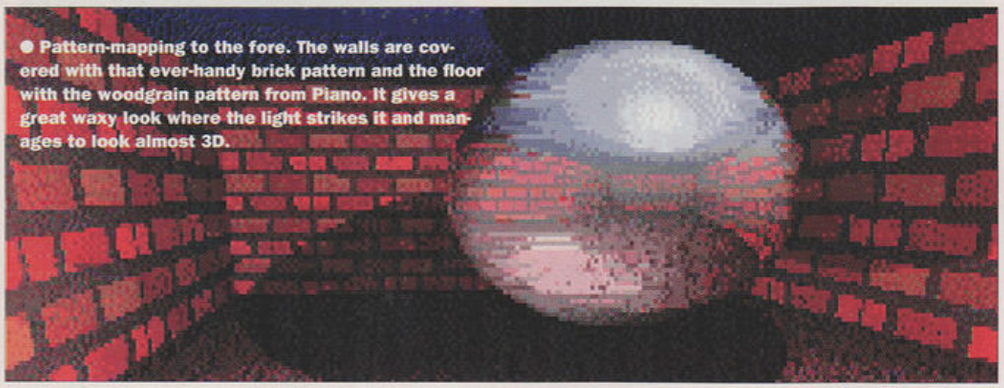
The situation doesn't change much with larger computers. Real-time raytracing isn't possible even on a Cray XMP, because with the increase in processor power comes a corresponding increase in screen resolution and the number of available colours, meaning the time needed per pixel stays proportionately the same. Any game using raytracing would spend all its time simply updating the screen display. One game, *Dark Century* from Titus, was brave enough to attempt raytraced graphics, but only in an extremely limited way. Needless to say, it wasn't really very good.

Once you start experimenting with raytracing you'll find it's an obsessive habit. Get into *QRT* for yourself – it's on the Cover Disk – and you'll never think parallelograms are dull again. ***stf***

THE AMAZING TECHNICOLOUR DREAM COMPO

The output file *QRT* produces is display-independent, which is why you need to convert it with *RAW2SPEC*. The file contains all the colour information needed to display the picture in 24-bit colour – in other words, on a display with 16,777,216 colours. To display this on your ST you need an add-on hardware colour board, a special monitor and the appropriate software to display the picture. On a less ambitious scale, it should be possible to write a program for the STE that displays *QRT* pictures in all 4,096 STE colours. As yet, though, such a program hasn't been developed.

That's where you come in. We're offering £150 to the person who can come up with the best program to display *QRT* scenes using the STE's extended palette. The file RAW2SPEC.TXT (on the Cover Disk) gives details of the format of the output file. The program needs to convert the colour values contained in this file to something useable on an STE and then display the picture, using split palette techniques, with a maximum of 4,096 colours. Friday 8 May is the deadline for this competition, and we'll be featuring the winning program on our Cover Disk. If you think you're up to it, send your entries to I've got a colourful one!, *ST FORMAT*, 30 Monmouth Street, Bath, BA1 2BW.



● Pattern-mapping to the fore. The walls are covered with that ever-handy brick pattern and the floor with the woodgrain pattern from Piano. It gives a great waxy look where the light strikes it and manages to look almost 3D.

PEARLS OF WISDOM

Like *QRT*, *Pearle* takes its input in the form of a simple ASCII text file. Since it only works with spheres, you don't have to define the shape of any objects, just their surface characteristics, their position and their movement. A simple file might look like this (the line numbers aren't included, they're just there for reference):

```
1. p 195, -20, 130, 0, 250, 10, 30
2. o 0, 0, 0.3, 0.6, 0.1, 1, 0, 0
3. v 215, 100, -550
4. l 150, 950, 0, 100
5. r 1, 3
6. g 32
7. f test, 1, 20
```

Line 1 defines a sphere with x coordinate 195 and x velocity –20, y coordinate 130 and y velocity 0, and z coordinate 250, z velocity 10, with a radius of 30.

Line 2 sets this sphere's surface characteristics: index of refraction = 0, amount of refraction = 0, amount of reflection = 0.3 (must be between 0 and 1), amount of diffuse (omnidirectional) light = 0.6, amount of ambient (from light source) light = 0.1, and RGB value = 100 (using *Pearle's* colour system, this is red).

Line 3 defines the viewer's position to be at x = 215, y = 100, z = –550.

At line 4 the light source is set at x = 150, y = 950, z = 0, with a radius of 100.

Line 5 tells *Pearle* to draw each scene with an average number of 1 ray passing through each pixel (the higher this number, the higher the "resolution" of the finished scene) and with colour system 3 (which means objects can be white, red or blue).

Line 6 sets the strength of gravity to be 32, which is a realistic value.

Finally, line 7 specifies the file name for the pictures (`test`) and the number of frames to generate, 1 to 20.

***Pearle's* documentation on the Cover Disk gives more details on the workings of the program, and you'll also find a sample configuration file for an interesting scene that creates 20 frames to make up a short animation.**

THE ABC OF *QRT* –

***QRT* works by taking an ordinary ASCII input file, processing it and writing out another file. This second file is the scene information expressed as a series of colour values for each pixel on screen and can't be displayed directly. You need to convert it to something your ST can display using a program called *RAW2SPEC*, which turns the file into a *Spectrum 512* format picture. You can then use the *Spectrum 512* picture viewer SHOW512 to see the picture in glorious 512 colour mode.**

When you create a scene with *QRT*, it's best to do it in stages. There's nothing worse than writing a four page input file, letting it render for two days and then discovering it's nothing like you imagined. As an example, let's look at the stages involved in creating an abstract collage of spheres and rings. Before you start, you need a blank formatted disk to store the various generated files on – *don't use your original Cover Disk.* To this disk copy the files `QRT_ST.TTP`, `RAW2SPEC.PRG` and `SHOW512.PRG`.

❶ The first thing to do is load up a text editor – *ST Writer Elite* from Cover Disk 27 is fine. (If you don't have a copy, turn to page 78 immediately.) There are a few things every scene needs: a file name for the output file, a light

● Our floor before it has anything added. Pretty, isn't it? Note the luminosity of the squares in the background caused by the ambient command.

source, an observer, and, of course, something to look at. So the first line of our example file should be

```
FILE_NAME=stack.raw
```

which just tells *QRT* to call the output file `STACK.RAW`.

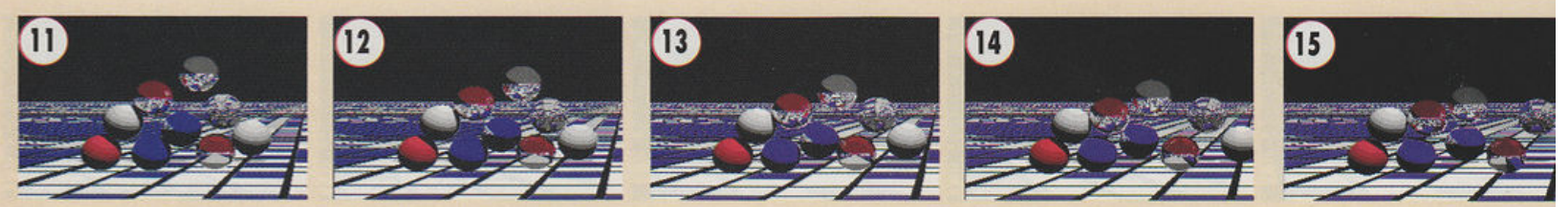
Next we'll set the colour of the sky.

```
SKY (
zenith=(0, 0, 1)
horiz=(0, 1, 1)
)
```

This sets the sky colour to be blue at the zenith and cyan at the horizon. *QRT* automatically creates a smooth spread of colours between the horizon and zenith. Colours are expressed in the usual RGB format with each shade being a value between 0 and 1 (0 = none of that shade, 1 = maximum amount of that shade, so (1,0,0) is red and (0.5, 0.5, 0) is yellow).

The floor can be one huge square covered with a pattern. The floor pattern from `TABLE.QRT` is attractive, so we can steal that one. Patterns should be defined before they're used, so enter this (↵ means *don't* hit return yet):

```
PATTERN (
x_size=90, y_size=90, name=FLOOR
RECTANGLE (start_x=0, start_y=0, end_x=55,↵
  end_y=55, diff=(1, 0.4, 0))
RECTANGLE (start_x=60, start_y=0, end_x=85,↵
  end_y=55, diff=(1, 0.7, 0))
RECTANGLE (start_x=0, start_y=60, end_x=55,↵
  end_y=85, diff=(0.7, 0.7, 0))
)
```



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or, HOW TO PRODUCE YOUR OWN RAYTRACED PICS WITH *QRT*

These lines define a pattern called FLOOR, composed of three rectangles arranged within a 90 x 90 grid. The `diff` statements set the colour of each rectangle. The floor object itself is defined with

```
PARALLELOGRAM (
loc=(-10000, 0, -10000)
v1=(0, 0, 20000)
v2=(20000, 0, 0)
diff=(0, 0, 0)
amb=(0.3, 0.3, 0.3)
pattern=FLOOR
)
```

The command `loc` sets the object's location in space using the x, y, z format. v1 and v2 are vectors which define the object's size and shape. So from one corner of the floor we move 20,000 units in the z direction (`v1`) and 20,000 units in the x direction (`v2`) to define the diagonally-opposite corner, giving us a large flat square. The floor's colour is set to black (0, 0, 0). The `amb` statement sets the colour of the light falling on the floor that doesn't come directly from the light sources – in other words, the "atmospheric" light. It's usually best to include a small amount of ambient light to make the scene look realistic. Finally, the FLOOR pattern is attached to the parallelogram. This 90 x 90 grid pattern will then be repeated over the entire surface of the parallelogram.

We set the viewpoint with

```
OBSERVER (
loc=(50, 100, -100)
lookat=(0, 0, 0)
)
```

The `lookat` value defines the point in space at which we're looking.

Now we've got a floor we need some light to see it by:

```
LAMP (
loc=(-100, 100, -90)
dist=99
radius=0
amb=(1, 1, 1)
)

LAMP (
loc=(100, 100, -90)
dist=50
radius=0
amb=(1, 1, 1)
)
```

These lines define two lights. The `dist` parameter sets the minimum distance from that lamp at which objects are to be lit at full intensity. The values are set to just above floor level so we don't get a completely washed-out floor. `radius` isn't used but must be included to prevent an error during rendering. The `amb` parameter sets the colour of the light – (1, 1, 1) is white.

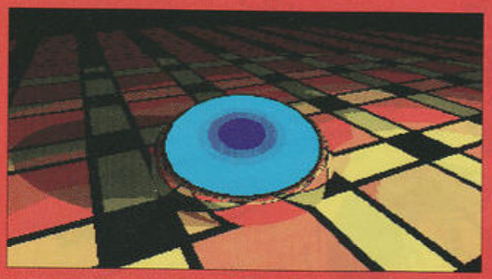
It's now possible to render the scene and get a decent result, so save this file as `STACK.QRT` onto your working disk, quit from your editor and double-click on `QRT.TTP`. Enter the command line

```
-x 50 -y 50 a:\stack.qrt
```

This tells *QRT* to take the instructions in the input file `stack.qrt` on drive A and render it as a 50 pixel x 50 pixel picture. The output file is also written to A. Use these small size pictures while you're developing the scene – it speeds up render times enormously.

When the program's finished, run `RAW2SPEC.PRG`. At the fileselector, choose `STACK.RAW`, answer No and then Yes. A couple of seconds later you should see the small picture in the middle of the screen. The colours don't look right yet. Press a key and the fileselector then reappears for you to name the picture file: call it `STACK.SPU`. The selector then appears again – click Cancel and exit the program. Finally run `SHOW512.PRG`, click on "Show All Pictures," make sure drive A is selected and then click on OK to see our empty floor.

❷ Right, let's add some objects, starting with a good old traditional mirrored sphere embedded in the floor.



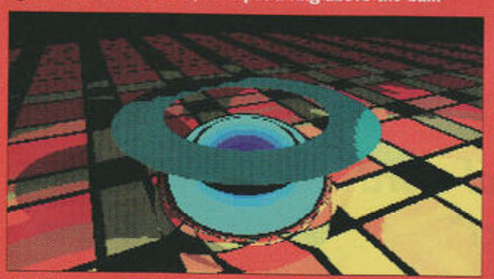
● One mirrored sphere later, we have a floor with – er, well, a mirrored sphere on it. The reflected sky isn't wonderful, because we only have 512 colours.

```
SPHERE (
loc=(0, 0, 0)
radius=50
diff=(0, 0, 0)
mirror=(0.7, 0.7, 0.7)
)
```

The sphere's centre is located at (0, 0, 0), so only half of it appears above the floor. The sphere is black because of the `diff` command (0, 0, 0), and the `mirror` statement means it reflects 70% of the light to hit it.

Render this scene again (run `QRT.TTP`, run `RAW2SPEC` and finally `SHOW512`) and admire your ball. (Ahem.) Note how, although you can't see the sky directly, it's reflected in the top half of the sphere.

❸ For no reason at all, let's put a ring above the ball.



● A ringed sphere, commonly known as a sphere with a ring above it. There aren't a heck of a lot of reflections or highlights on the ring, because it's flat.

```
RING (
loc=(0, 55, 0)
v1=(50, 0, 0)
v2=(0, 0, 50)
rad_1=35
rad_2=55
diff=(0, 0.4, 0.4)
)
```

The `loc`, `v1` and `v2` act as before, setting the ring's location and its size; `rad_1` and `rad_2` define the inner and outer radii of the ring respectively, and `diff` sets the object's colour. Render the pic again and see the difference.

❹ Finally let's stick another sphere over the ring, this time a patterned one.

● We call it "Sphere with Ring, Ball and Floor." (Whatever you do, don't let us know what you call it.)

```
PATTERN (
x_size=20, y_size=20, name=CIRCLES
CIRCLE (
    radius=9
    diff=(0.8, 0.8, 0)
    reflect=0.8
    sreflect=10
    )
)

SPHERE (
pattern=CIRCLES
loc=(0, 110, 0)
radius=50
diff=(0, 0.7, 0.1)
)
```

The `PATTERN` lines define a 20 x 20 square filled with a circle 18 units in diameter. This circle is given a yellowy colour and is made very shiny with the `reflect` and `sreflect` statements. The `reflect` defines how much light is reflected in specular highlights – those bright spots you see in shiny objects, and `sreflect` is the Phong coefficient. Little bit complicated, this – suffice to say, the higher the value, the more metallic the object appears. Then the sphere itself is defined: it's 100 units wide, with a greenish colour and is covered with the `CIRCLES` pattern.

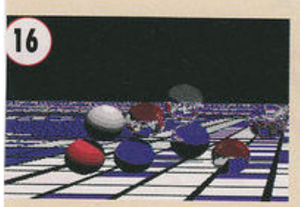
Now all the objects in our scene are set up, we can do a full-screen render. Run `QRT.TTP` once again. At the prompt, enter

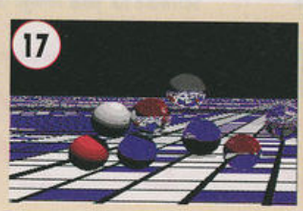
```
-a 0.625 a:\stack.qrt
```

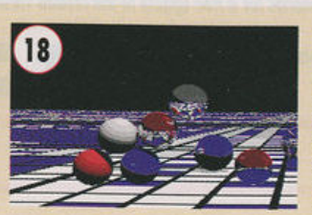
The first parameter sets the aspect ratio of the picture correctly for the full ST screen (320 x 200). Now go away and do something else for two or three hours, because this takes a while.

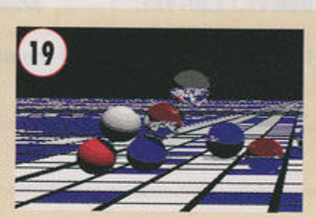
When you've admired the full screen view produced, try making a picture with Error Dithering on. Just run *RAW2SPEC* again, but this time answer Yes to "Dithering?" and then choose "Error Dithering." You'll notice the light on the floor looks more even, but you lose the mirrored look of the sphere. Dithering blurs the boundaries between different colours slightly to give a more natural look, but it also makes the scene look more grainy.

There's a lot more to *QRT* than this. Reading the manual fills you in on the extra features, such as instances, bounding boxes and more complicated objects. Of course, you could just experiment with this example and learn that way. Either way, *QRT* is a lot of fun.



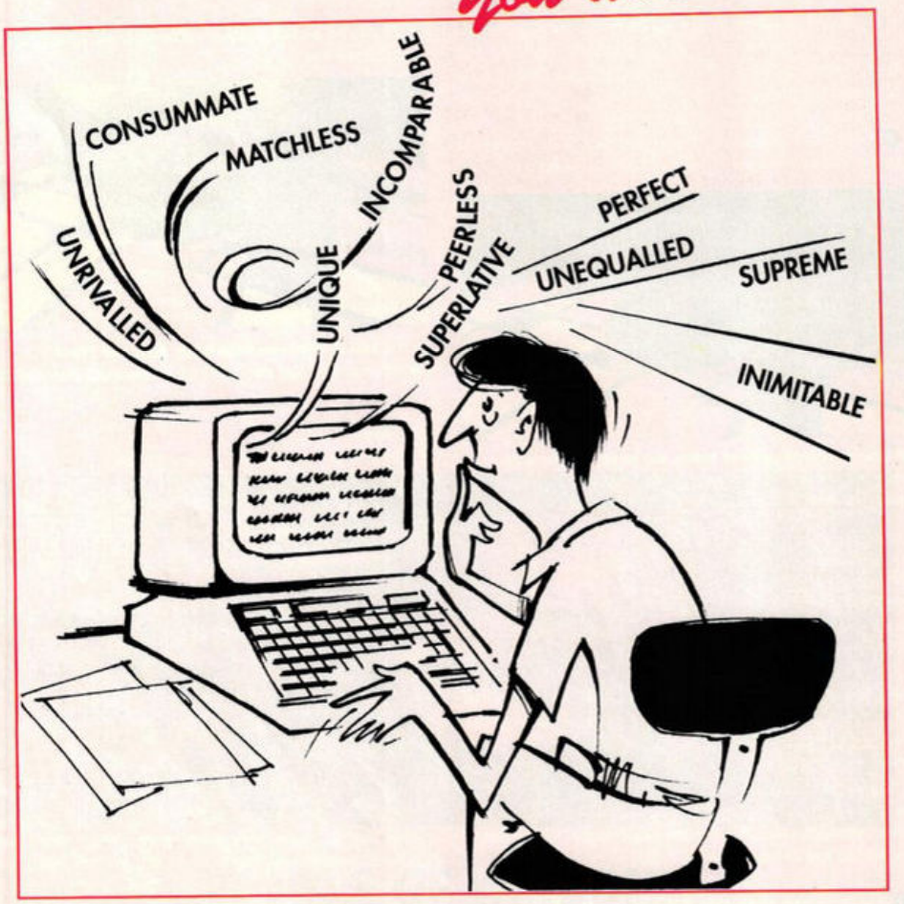






PROTEXT 5.5

"You won't be lost for words" . . .



. . . with Protext 5.5 because the pop-up thesaurus will provide you with inspiration whenever you need it. With words provided by Collins the thesaurus has 43,000 main entries and 827,000 responses!

Protext 5.5 introduces enhanced text formatting options. Automatic hyphenation lets you produce a well-spaced page layout without the bother of manually putting in soft hyphens. Protext determines the correct hyphenation points by algorithms and look-up tables. Elimination of widows and orphans is also provided. You will no longer need to worry about those infuriating single lines at the top or bottom of pages. Protext formats the text to avoid these as you edit the text. Extra blank lines at the top of a page can be suppressed.

New document analysis features provide a wealth of information about your text. You can examine a list of all the words used - alphabetically or by the number of occurrences. Other statistics shown include average word length, average sentence length and a table of the number of lines on each page.

Plus many more improvements . . .

- ☆ Enhanced file selector with different sorting methods, bulk copy and erase.
- ☆ Prodata users - mail merge directly from Prodata files, no need to export.
- ☆ Mail merge: nested repeat loops.
- ☆ New window-based help facilities.
- ☆ Improved line drawing.
- ☆ Spelling checker finds repeated word and missing capital letters.
- ☆ Conversion to and from WordStar 5.5 and Microsoft RTF
- ☆ Full printed documentation of new features.

Of course Protext still includes . . .

Choice of pull-down menu or keyboard operation, extensive printer font support and proportional formatting while editing, up to 36 files open, split screen editing, characters for 30 languages, index and contents, footnotes, newspaper column printing, file sorting, macros, indent tabs, mail merge programming language, exec files and the fastest search and replace around. Altogether the most comprehensive word processing software for your Amiga or ST.

"it's bloody brilliant" — ST FORMAT

"one hell of a performer" — COMPUTER SHOPPER

"if you need a professional word processor Protext is perfect" — AMIGA COMPUTING

"nothing else available comes close" — ST APPLICATIONS

PRODATA 1.2

New version of Prodata now with pull-down menus, mouse or keyboard operation, automatic record numbering, merge database, instantaneous filtering, prologue form, edit fields in any order, 2-across label printing. Full details available from Arnor.

Price: £85+VAT, upgrade from v1.1 £30+VAT.

PRICES (including VAT and delivery)

For Commodore Amiga, Atari ST or TT.

Protext 5.5	**£152.75**
Upgrade from 5.0 to 5.5	**£30**
Upgrade from 4.2/4.3 to 5.5	**£60**

Please return your original disks when upgrading

French or German spelling dictionary	**£35.25**

When upgrading please return any extra spell checking dictionaries for a free update to the revised version.

☆ **Both Protext 5.5 and Prodata require 1Mb of memory**

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Arnor Ltd (SF), 611 Lincoln Road, Peterborough PE1 3HA. Tel: (0733) 68909 Fax (0733) 67299

www.stformat.com

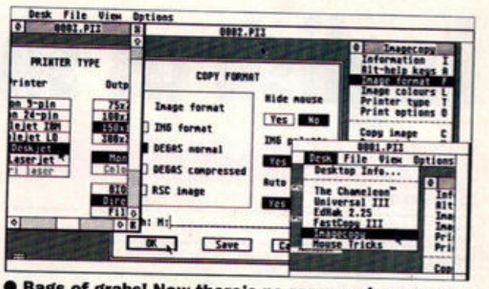
Smashing grabs

Imagecopy

MACHINE: ALL STs AND TTs
PRICE: £9.95
FROM: THE ST CLUB
CONTACT: 0602 410241

One of the things that set the ST apart from other lesser machines is the great wealth of useful utilities and accessories available for it. Many of these little programs are yours for free in the Public Domain, but hot off the press is a brand new commercial utility from the ST Club which goes way beyond the features offered by similar PD packages. *Imagecopy* is written by whizz-kid British programmer Jeremy Hughes, responsible for the famous *Fontkit* series of software (also available from the ST Club). If you want to "grab" images off your monitor and save them to disk, or display images from disk to screen, or convert images from one file format to another, or print out images to your printer, *Imagecopy* can do it!

Imagecopy combines all these features into a Desk Accessory (re-nameable for use as a stand-alone program if you wish), so it works from inside almost any ST programs – even non-GEM ones: you call it up by simply pressing the <Alternate> and <Help> keys together. You can choose to grab either the whole of your screen or part of it – you rubber-band just the part you require and fine adjust the size and position of the section before it is saved. The file format for saving can be either *Degas* (normal or compressed) or .IMG, but *Imagecopy* can also load in and display TINY, *Neochrome* and *Art Director* formats and then re-save any of these in a different format, thus providing an easy image conversion utility. Up to four images can be on-screen at once, and these are displayed in the standard GEM windows – all moveable, scrollable and re-sizable in the usual manner.



● **Bags of grabs! Now there's no reason why everybody shouldn't be able to produce these devilishly cunning pictures of pictures within pictures sort of stuff, or even boring old standard grabs!**

Imagecopy can print out your pictures to most standard printers – including Deskjet, Bubblejet, Epson 9 or 24 pin and Laserjet – and you can even choose what size you want the printed image to be. The program works in all ST screen resolutions, and on large-screen and TT monitors. You can even display colour pics on a mono monitor because Imagecopy automatically dithers them on the fly. Highly recommended.

PETER CRUSH

***STF* RATING: 90%**

Quick off the mark

Quick ST 3

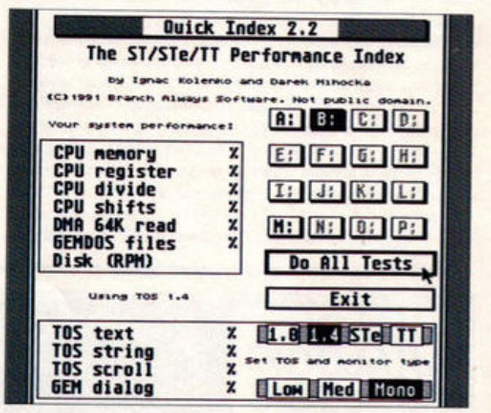
MACHINE: ALL STs AND TTs
PRICE: £12.95
FROM: THE ST CLUB
CONTACT: 0602 410241

Everybody's in a rush – fast food, fast cars, fast watches (er, they help you get everywhere earlier). Now you can make your ST go faster too, and without having to install a Blitter chip. *Quick ST 3* is a little program now available in the UK that you simply put in the AUTO folder of your boot disk (a folder called AUTO on the disk you start up with each time you use your ST). The program sits in memory – consuming 57KBytes of RAM – and cleverly intercepts certain screen drawing and GEM operations of most subsequent programs you run and substitutes its own faster routines. The result: your programs run much faster. Some operations are over three times as fast, your cursor simply zips through text, and opening up and moving about in a GEM window is very noticeably faster.

Once *Quick ST 3* is installed, you won't want to remove it. Incompatibility is not a problem with the vast majority of ST software: the coding of *Quick ST 3* has been extensively tested and only a handful of programs play up. If this happens you can either turn off *Quick ST 3* using an optional Desk Accessory supplied with it, or try using version 2, which is also provided. So you can't go wrong! Also included are a handful of other useful Freeware goodies, including the latest version of *Quick Index*, the definitive performance checker for the ST. A well-written 12-page A5 booklet completes the package.

PETER CRUSH

***STF* RATING: 88%**



● **We can't show you *Quick ST 3* running an ST faster, so have a look at *Quick Index*, included free, together with other utilities, with *Quick ST*.**

Twin Brother

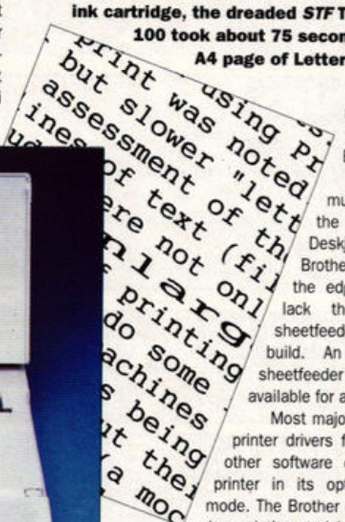
Brother HJ-100 Inkjet Printer

MACHINE: ALL STs AND TTs
PRICE: £405.00
FROM: BROTHER BUSINESS MACHINES
CONTACT: 061 330 6531

The Canon BJ-10e Bubblejet printer is claimed to account for half of all portable printer sales, and is deservedly a popular machine. See the full review in *STF* 17 – if you missed that issue, see page 78. With its excellent print quality and a budget price it had little to rival it – but now there are a couple of "clones," and one of them is the HJ-100 printer from Brother. The Brother inkjet looks just like a Canon Bubblejet, apart from the name on it and styling of the switches.

The printer weighs only 4.5 pounds with the optional nicad battery pack in place, has an A4 footprint and is only a couple of inches thick, so it can be used anywhere. Setting it up is easy: slot in the combined ink cartridge/print head and plug in your ST's parallel printer cable. When open the printer's lid forms a paper guide for sheets of A4, and a control button on the front panel advances the paper into the correct starting place. Other buttons enable you to select different fonts and character spacing, and go On/Off line. A mains transformer provides a 9.5 volt DC supply. Printed output is superb: the Brother's 360 x360 dpi resolution is particularly fine and detailed, and its specification is identical in all respects to the Canon Bubblejet BJ-10e.

● **The Brother HJ-100 is a neat little machine, and although it's not an exact match to the standard Atari grey it tones in very well. Oh, it also produces utterly charming printouts.**



● **The standard ordeal for any printer worthy of its ink cartridge, the dreaded *STF* Test Page. The HJ-100 took about 75 seconds to produce this A4 page of Letter Quality text.**

There is not very much to choose between the Brother and an HP Deskjet for print quality, the Brother perhaps just having the edge here, but it does lack the Deskjet's inbuilt sheetfeeder and sturdiness of build. An optional automatic sheetfeeder for the Brother is available for about £60.

Most major ST programs include printer drivers for the Bubblejet, and other software can use the Brother printer in its optional IBM Proprinter mode. The Brother cannot produce italics when printing straight text, but if you use a graphics based WP or DTP program you can of course produce many styles or size of type, including italic. Shop around and you can find the Brother HJ-100 for much less than its official list price. It's a good complement to your ST.

PETER CRUSH

***STF* RATING: 88%**

www.stformat.com

English as she is wrote

GramSlam

MACHINE: ALL STs (medium or high res)

PRICE: $39.95 (US)

FROM: PHIL COMEAU SOFTWARE

CONTACT: 0101 613 825 6271

Grammar does matter. Life is full of occasions when you want to give the impression that you're not just a semi-literate, ill-educated yob: writing job applications, notes accepting Her Majesty's gracious invitation to tea – whatever it might be. Even more importantly, there are times when clear, unambiguous communication is vital: describing that tricky rewiring job, making a statement to the police explaining exactly why the electrocution wasn't your fault – that sort of thing. Language often needs to be a precision tool, and grammar is a description of language being used precisely.

But what can you do if the education system has tragically failed you? You could try *GramSlam*, a grammar and style checker from Canada. It comes on just one single-sided disk and can even be installed as a Desk Accessory. This means you can select it from the Desk menu and run it while using your word processor: when *GramSlam* reports a problem you want to correct, you can simply exit, make the correction, save, then re-enter *GramSlam* and it continues checking from where you left off. There are only three restrictions: the normal GEM menu bar must be accessible from your WP; *GramSlam* works in medium or high res, not low; and it can only check files you have saved.

Before you start, you can choose between American or British spellings and set the "reporting level" on a scale from 0 to 9 – that is, decide whether you want *GramSlam* to alert you to a wide range of stylistic points or to serious grammatical errors only. When it has finished checking your document, *GramSlam* displays a screen of statistics including the average length of the sentences, the percentage of sentences in passive voice and the document's "Readability Grade" measured on the appropriately-named Fog Index. It can even record the problems it detects and print out a report for you afterwards.

The trouble is, as the manual acknowledges, "*GramSlam* matches phrases mechanically and without any idea of the meaning behind the words. Sometimes it makes mistakes. For example, it warns that the phrase 'number of' is often mistakenly used in place of 'amount of,' even in a sentence like 'Always keep the number of your fire department handy.' You must consider each problem reported by *GramSlam* to decide whether it is valid and significant." This is an understatement. Run *GramSlam* on level 0 – where it reports everything it thinks is a problem – and you are likely to end up hopelessly muddled. Every time the word "to" appears, *GramSlam* warns you it is often confused with "too" – but it's perfectly correct in phrases like "due to" or even "to release," and telling you it could be wrong is just confusing. In the same way, *GramSlam* warns that "there" is often confused with "their" and "they're" even when it encounters "there is," or that "well" is often confused with "good" even when you've written "well done" or "as well." You can set *GramSlam* not to report any particular problem again, but then it doesn't alert you when you really have got it wrong.

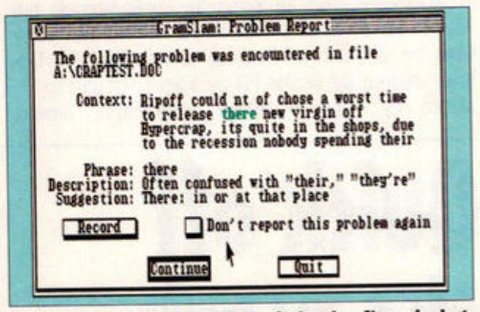
It's hard to guess what *GramSlam* would regard as a very serious grammatical error. On level 9 it reported nothing: on levels 7 and 8 it found only two things worthy of mention: the common error "between you and I" and the allegedly American spelling "disk." Not that the program is much use as a spell-checker: it missed both "conseqiuences" and "could'nt." It's certainly no replacement for a proper spell-checking utility.

Worse still, the suggestions *GramSlam* gives for correcting a problem are likely to help only if you already understand basic grammar – and if you do, you'd hardly need the program anyway. It helpfully tells you to use "well," not "good," when you want an adverb, but if you've written "he done good" you probably don't know what an adverb is in the first place. *GramSlam* makes all its suggestions in the present tense, so you're no less likely than before to write "have chose." Some of its suggestions are positively bizarre. It recommended replacing the word "membership" (stilted, it said) with "members" – in the phrase "an introductory offer of free membership for a year." What's more, if you can't choose between "there" and "their" it's no help to be told that "there" means "in that place," because that's simply not what it means in the verb "there is."

You can edit the "problem phrases" database – or even write your own from scratch – but again, if you know your grammar well enough for that, what's the point of using the program? *GramSlam* can spot some genuine problems, especially straightforward typing errors like "the the end" or a space before rather than after a comma, but it is pretty poor on stylistic matters – not surprisingly, because these depend so much on meaning, which it can't hope to understand. What's more, it claims to check for sentences in the passive voice without understanding what that means: it counts any form of the verb "to be" as passive, even "there is" again, making its statistics worse than suspect. If you need help with grammar, scour your local library or bookshop for a grammar book with an approach you like. It's bound to be of more help than *GramSlam*, which is a good idea that just doesn't work.

ALEX SOBOSLAY

***STF* RATING: 46%**



● ***GramSlam* finds a problem – but only after missing four in the first line. It then spots "its" (it should be "it's") but nothing else of importance. And is the suggestion enough to help *you* decide what's right?**

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ST FORMAT

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- **DISCOVER how to get even more out of *Write On***
- **REVEL in more tips to help you make the most of your ST**
- **PANIC as we get our hands on a reviewable *Robocop 3* (we hope)**

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U010 STE BOOTUP, boot your STE into medium res.
U011 DIY DEMO, create demos featuring a title screen & scrolling message, without any programming skills.
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U015 FILE SELECTOR V6.0, replacement for the GEM file selector. Select drive, sort, print, get full info on selected file, re-name, show time or name in selector. Virus Killer v2.01 detects 6 types of virus.
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U019 DRFLOPPY, a disk sector editor, SCODE makes ASCII for easy data transfer.
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U024 CHK 2.3, Tells you everything you should ever need to know about a disk.DISK DOUBLER, is a utility for converting 2 single disks quickly onto 1 D/S disk. ST to IBM MODIFIER, alters the format of DS Atari disks so that an IBM can read them.
U027 ANTIDOTE, Super virus killer for detecting & killing all bootsector viruses, comes as a .ACC.
U028 DISKMECH, is a powerful disk analyser/archiver/editor with options to edit sectors, format sectors, edit bytes, edit tracks & analyse disks, with full documentation. CPANEL is a vastly improved control panel.
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U032 MOUSE TRICKS, extensive control over mouse movement & menu style.
U033 MX-2 V2.3, a multi-tasking & multi-user environment allowing up to 7 concurrent tasks. *D*
U034 DOUBLE CLICK, format v3.03 9/10 sectors, 80/82 tracks.
U035 DEC, edit clone, disk engineer v3.01 allows you to do almost anything to a disk via GEM.
U040 AUTOGEM, autoboots any Gem program when booting. VC spreadsheet a non-GEM spreadsheet.
U041 ADDRESS LOG, on this disk there's a limited address book & label printer & a disk cataloguer that auto disk directories.
U046 SUPER VKILLER, detects 5 different viruses, recognises 7 anti-viruses & 133 other types of boot sector.
U050 GEMINI, desktop replacement. All English version *DX*
U052 GEM PLUS, this is a great variant of Neodesk.
U057 GEMDOS USERS GUIDE, a disk full of information about GEMDOS.
U058 ATARI TOS 1.4 FIXERS, (STFMs with Rainbow TOS): POOLFIX, PRG & TOS 14 FIX. PRG for fixing o/s bugs.
U059 XCONTROL, Atari's latest TT control panel accessory for all ST's.
U063 MEMFILE 2.0, Memory and disk editor with powerful features.

Graphic, Font and Art/Drawing Disks

A005 PALART, excellent art program with full docs on disk. Excellent features. *C*.
A009 COLUMBIA, A drawing program with some 3D elements & co-ord display. Studio (1Mb RAM) is a mneu driven drawing package. Both programs are from Germany.
A012 DOODLE, this disk has the original mono & colour versions. Also some Mandelzoom pictures.
A013 ST GRAPH, a comprehensive graph program that can handle bar, horizontal bar, stacked bar, line & dot charts. The disk is formatted so that DS users can access extra routines.
A015 FONTS2, 7 screen & desktop fonts. Columbia, Devoll, Hudson Saturn, Spokane, Thames & Universal Roman.
A018 CANVAS, a great art package that fully supports the STE.
A020 PALETTE MASTER, A good art package that offers the user up to 512 colours. *C*.
A024 FRACKTAL, is a fractal drawing program from Germany that comes with mono & colour versions
A025 FONTKIT 3.31, by Jeremy Hughes. An excellent program, well improved on 3.2. *D*
A027 ANI-ST, ex-commercial package, quality animation system. You draw the initial & final shapes & the ST draws the ones in between.
A029 MASTERPAINT, drawing package, excellent features. Mono and colour.
A030 PICWORKS, this is a utility for enlarging, reformatting & manipulating pics up to 3 times normal size. *M*.
A042 ST CAD v2.1, a medium or high res CAD package. Full docs very good. CALCPLOT, scientific calculator and function plotter.
A043 THE ARTIST, A great drawing package with all the normal options. *M*.

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C012 Herbs & kitchen parts.
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C015 Babies, boys & girls.
C016 More girls, scrolls & occasional clips.
C017 More Artdeco, baby boy & girl.
C018 More varied humorous clips

Wordprocessing & Desktop Publishing

W001-006 TEX, 6 disk pack, includes TEX the document processor. *M*.
W008 1st WORD, Wordprocessor. Fully GEM based professional wordprocessor.
W015 HYPERTEXT, Shareware prog suitable for the production of very professional documents. *MD*.
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G018 RUSH, move the bricks in order to create a way out for the ball.
G020 YAHTZY, an extremely popular game.
G021 UPSTART, an excellent shooting the cherries game. *S*.
G022 COMPANION, is a shoot 'em-up mission in outer space.
G025 ENGLAND TEAM MANAGER, Football team management.
G027 DIE ALIEN BLOB, a great shoot 'em-up, excellent graphics.
G028 TREASURE SEARCH, find the hidden treasure. *D*.
G032 BALLER, an arcade castle & cannons game graphic adv. *M*.
G033 ADVENTURE WRITING SYSTEM, create adventures.
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G113 CHANCE, the Archons have taken over a space platform close.
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G115 MUTANT, reactor in a nuclear powered mine goes out of control. The workers start to mutate. You must get to the end cavern & destroy it.
G116 KEY TO ATLANTIS, underwater scrolling shoo'em-up.
G118 MARS MAZE, good platform game. Work your way up against time.
G119 STEEL, blast everything in sight.
G122 HEDGEHOG, along the same vein as FROGGER.
G123 THE NAME GAME, based upon the Sun puzzle. Create your own.
G128 TARK, great text adventure.
G129 BATTLE FOR THE THRONE, a role playing adv.
G130 LLAMATRON, a great shareware game by Geoff Minter. *D*.
G131 VIDEO POKER, Las Vegas poker playing machine.
G132 DERRICK THE DROID, a great mix of platform, shoot'em-up & puzzle game.
G136 PORK II, another send up of the ZORK series. Subtitled "The Gizzard if Showbiz".
G137 MORIA, a fantasy role playing game. *D*.
G138 SHOOT'EM-UP BUILDER KIT, make programming shoot'em-ups easily. *D*.
G141 DUNGEON! Multi choice fantasy adventure with some humour.
G144 HACKMAN, 50 levels of a great Pacman clone.
G145 ELEVEN CRYSTALS II, part 2 of a great text adventure by Fink.
G149 STARMAZE, Guide your craft around the various levels blasting the alien craft on your way.

Programming/ Language Disks

P001 6800 ASSEMBLER,
P008-P010, C LANGUAGE DISKS 1, 2 & 3 of Elementary C, a set of 3 disks.
P012 CPM EMULATOR, this is a CPM-8 version 2.0 that runs at 2MHz.
P013 CPM UTILITIES, for P012
P017 PROGRAMMING EDITORS, CONTEXT V2, PRO-ED & P-EDIT, plenty of features & documents.
P020 SOZOBON C, probably the best PD C compiler with full K&R compiler support. *D*.
P022 SPRITE EDITOR, create & save your own sprites.
P023 C TUTORIAL, disk manual, an excellent intro into C programming.
P026 MKRSC, a simple GEM resource construction utility.

Communications Disks

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C006 VANTERM 3.71 & 3.8, is just about the best PD communications package around.

Applications, Spreadsheets, Databases, etc.

S001 DATABASE 1, this is a GEM driven database.
S002 ST SHEET, this is a very good quality spreadsheet. *C*.
S005 B/STAT V2.01, this is a sophisticated graphing & statistical analysis program. *DX*.
S007 OPUS V2.2, This program is a GEM based spreadsheet & charting program *DX*.
S009 WG DATA, high quality DTB with custom screen layout. Full docs.
S011 DOUBLE SENTRY, an excellent fully working accounts package (no VAT).
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M001 COMPOSER, a music creation program.
M012 SINGING CALIFORNIAN, raisons
M013 MUSIC WRITER, this program lets you create music on screen.
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M018 ACCOMPANIST 2.3, full featured midi sequencer. *C*.
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E020 GEOGRAPHY TUTOR a great shareware package.
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F005 CONSTELLATIONS, a comprehensive Astronomers disk. *M*.
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F013 POOLWISE V3.5, a sophisticated pools predictor. Med res.
F016 ST TOUR, excellent guided tour of your ST.
F017 YOUR SECOND ATARI MANUAL, a 250Kbyte text file on the ST
F019 GENEALOGY, shareware package for tracing family trees.
F021 BUSINESS LETTERS, 100 business style letters in ASCII code.

Demos

D005 THE DEFINITIVE DEMO, by the Lost Boys. *D*.
D006 SLATATANIC CULT, music demo I & music demo II. *D*.
D007 ASTERIX DEMO, digital sound & pics.
D008 BOMB THE BASS, demo.
D009 TRANSYLVANIA DEMO, by the Lost Boys. *D*.
D010 SOUND CONNEXIONS DEMO. *D*.

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Just the Italian job

Can Olivetti's inkjet printer beat the big names? Peter Crush investigates

Olivetti JP-150 inkjet printer

MACHINE: ALL STs
PRICE: £398.33
FROM: OLIVETTI OFFICE
CONTACT: 0908 690790

For excellent print quality and value for money, you can't beat an inkjet printer. Hewlett Packard's Deskjet range were the first inkjets available and have become the "industry standard" for the ST. Virtually all serious ST software can output to a Deskjet, and at 300 dots per inch (dpi), they offer near laser printer quality text, graphics and DTP printouts. Other manufacturers have brought out their own inkjets – first, Canon's 360 dpi Bubblejet series, then Canon "clones" or "lookalikes" from Brother and Star, also leading printer makers. Now there's the first direct "clone" of the HP Deskjet, from Italian company Olivetti – the JP-150 Inkjet.

The JP-150 looks nothing like a conventional printer – it's a grey plastic brick-shaped device about the size of a small shoebox. Its design is stylish but minimalist, with nothing fussy or unnecessary about it. The lid hinges back to form a paper hopper, not a paper guide as you would imagine. You feed sheets of paper in from the front of the machine – unconventional but logical: it makes for easier access than fumbling at the back of the printer. The On/Off switch is at the rear, as is the standard parallel port.

The DIP switches, instead of being hidden away in the most inconvenient places as usual, are situated under a second "lid" on the top panel – though the unit is so neatly moulded that this lid is difficult to find. There are 33 big chunky DIP switches, each clearly labelled. There's even a colour coded chart on the underside of the lid, making any adjustments a very simple matter. The JP-150 comes set up to print out all those usually difficult symbols like the £ sign, saving you the fiddling about usually necessary to achieve this on most printers.

To get the printer going, all you need to do is slot in the supplied Inkjet cartridge, which contains both the ink and the actual printing head. It looks identical to the Hewlett Packard cartridge, but the ink is not the waterproof kind now available for the Deskjet – though this is not a problem unless you have a leaky roof! In use, the JP-150 is very easy to handle. With inkjet printers noise levels are usually very low, but this must be one of the quietest going, certainly quieter than a "real" Deskjet. An A4 page of text – written in *Protext v5.5* (£152.75 Arnor ☎ 0733 68909) and printed using its own extensive range of printer drivers – prints out in 48 seconds (draft quality) and 70 seconds (Letter Quality), as compared with 75 seconds on a Canon Bubblejet (on which, unusually, draft quality text prints at exactly the same speed as Letter Quality) and 35 seconds draft/50 seconds Letter Quality on the HP Deskjet 500.

There seem to be no compatibility problems: any software that works with the HP Deskjet Plus should work fine with the JP-150. The JP-150 also gives good results printing from *Timeworks 2*, the new DTP program reviewed last issue (£129.25 Electric Distribution ☎ 0480 496666), and works using the HP Laserjet printer driver too. A DTP page of combined text and graphics took under four minutes to actually print out at 150 dpi, not including the time taken for the program to load fonts, compose the page and suchlike. Printing at the greater resolution of 300 dpi, it took ten minutes to print the same DTP page.

Hewlett Packard's Deskjet 500 has replaced their now unavailable Deskjet and Deskjet Plus models, but most software was and still is written for the Deskjet Plus, and there is little difference in the output quality of any of these printers. The Deskjet 500 is sturdier than the Olivetti JP-150 and has the advantage of a built-in sheetfeeder. An add-on automatic sheetfeeder is available for the JP-150, but costs an extra £80 or so. The cost of the HP Deskjet 500 has fallen dramatically – it's often around the £350 mark at computer shows – so the JP-150 would not be an attractive alternative at its "official" price. However, it is already being offered at around £250 by some ST dealers, making it a good bet if money is tight or if your printing requirements are not too heavy. ***stf***

JP-150 SPECIFICATIONS

115mm high, 342mm wide, 147mm deep. Weighs 2.9 kgs. Handles A4, Letter and Legal size paper, and envelopes in sizes COM-10 and DL. Three resident typefaces available: Courier, Times Nordic and Letter Gothic, in draft or Letter Quality. Print Pitches: 5, 6, 8.3, 10, 16.7, 20, 24, and 33.3 characters per inch, plus Proportional Spacing. 8KByte printer buffer, expandable with optional plug-in RAM cards of 128K and 256K. Extra Font Cards are also available to provide additional typefaces, as are Emulation Cards to provide compatibility for the IBM Proprinter and Epson FX 850.

OLIVETTI JP-150

£398.33 Olivetti Office ☎ 0908 690790

FEATURES: 85%
Offers almost everything the HP Deskjet does and is smaller and neater, but not so suitable for heavier use.

SPEED: 85%
Printout not as fast as a real Deskjet, but faster than a Canon Bubblejet, and quite satisfactory.

EASE OF USE: 90%
Very simple to use, nothing complicated to adjust, with easy-to-set DIP switches.

RESULTS: 90%
You couldn't ask for much more from any inkjet, and the print quality is equal to a real Deskjet.

THE COMPETITION
HP Deskjet 500 (£586.00 Hewlett Packard ☎ 0344 369369) – highly rated (*STF* RATING 90%) favourite ST workhorse; sturdy, dependable, with a three year warranty. Probably the best supported printer for ST use. Bubblejet BJ-10e (£405.00 Canon ☎ 081 773 3173). Canon's unique portable baby printer (*STF* RATING 90%), is claimed to be the world's best selling inkjet. Some ST software has only recently got printer drivers for it; the new model BJ-10ex has Epson compatibility.

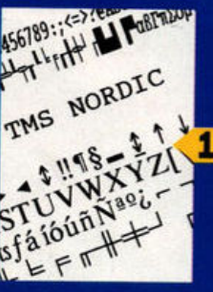
STF RATING: 87%

The JP-150 is like a cross between the big HP Deskjet and the mini Canon Bubblejet, and splits the difference between the two. If only it were that little bit cheaper, it would be the ideal way into HP compatible, near laser quality printing.

INKJET PRINTING

Dot matrix printers print by the impact of pins through a fabric or film ribbon, and like the old typewriter can be noisy, heavy machines. By contrast, inkjet printers make their mark by squirting little blobs of ink onto the paper from a large number of tiny nozzles or jets in a combined print-head and Ink cartridge. One big advantage is the quietness of this process. Detail is better too: dot matrix printers use either 9 or 24 pins but the Olivetti JP-150 has 50 ink jets, and its resolution of 300 dots per inch (dpi) is equal to that of laser printers. Lasers still (just) give the best results technically, but the quality gap between these and the latest inkjet machines is now very small indeed.

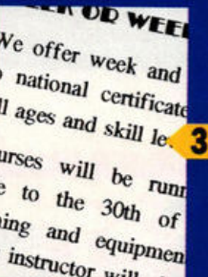
● The Olivetti JP-150 inkjet – not quite as stylish as an Alfa, or as fast on the autostrada, but quieter. Especially for a printer.



1 ● This section from the JP-150's self test printout shows the excellent range of fonts, symbols and character spacing available, and the fine detail and print quality rivals much more expensive printers.

● Here is a splendid example of sophisticated writing – well, actually it's part of an *STF* printer roundup. The JP-150 acquits itself with distinction – you could confidently use it for important presentations.

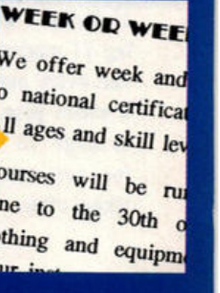
2



3 ● Look at this section of an A4 printout from *Timeworks 2*. Quite good, isn't it? You could certainly use this standard of output for semi-pro quality work, and the JP-150 took only ten minutes to print it.

● Okay, so this printout is a little bit smoother and crisper, but there isn't much in it, and you'd spend about four times as much for the Brother HL-4V Laser used to print this example.

4



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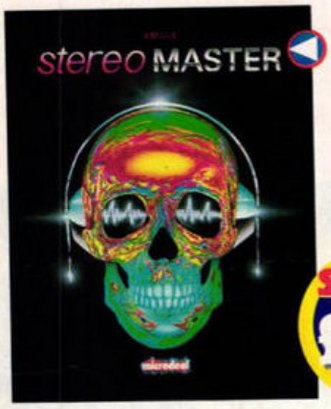

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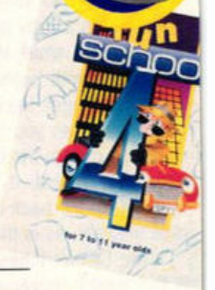

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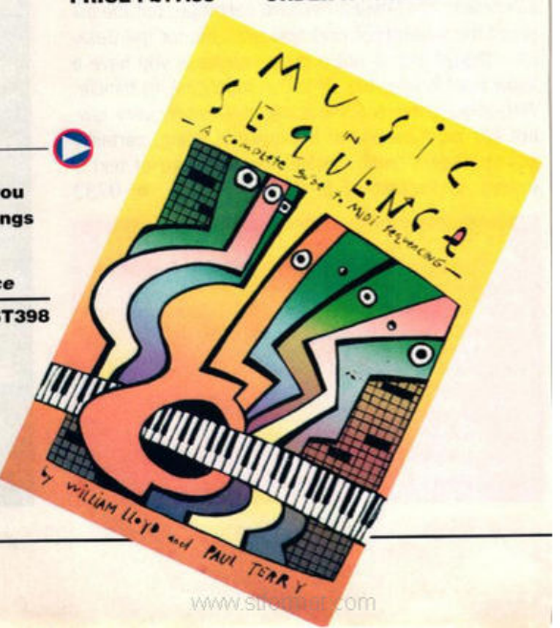

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★★★★★★★★★★★★★★

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★★★★★★★★★★★★★★

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BU89 - Horse racing simulation	($3)	BU90 - Match-It - Shanghai clone	($3)
BU91 - Flipped - very hard puzzle game	($3)	COM25 - Football Genius/Super League Soccer	($4)
ART35-37- In Bed with Madonna 3 disks	($4)	ART51 - Crack Art - better than Neochrome! (1Mb)	

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GAME 44 - Skidpan (overhead car racing), Haunted House, Pop Music Challenge, Techmate Demo
GAME 62 - House of O's, Lottery, Mold 1, Underground (Adventures)
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EDUCATION (Shoestring software is mainly for children)

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EDUC 8 - Spelling Made Easy, The Search - Historical		EDUC 9 - Computer School 2 and 3, Bodyshop	

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UTIL 3 - Almanac, Treesaver, Biomorph, Plotter 'A'		UTIL 4 - Pools v2.5, Norad, DC Utils and more 'A'	
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UTIL 13 - German to English, Dbackup, DC Utils 'A'		UTIL 14 - Full of printer drivers inc. Bubblejet 'A'	
PRO 20 - Video Master - superb video titler	($4)	PRO 23 - Video Master Fonts Disk	($4)

BUSI 1 - Invoice and statement generator 'A', Namenet (database) 'A', Sales controller 'H'
UTIL 15 - Tons of misc utils including copiers, formatters, virus killers, directory listers, diary etc. 'A'
LANG 13 - Tim Oren's Guide to Professional GEM in C - tutorial, source code and utilities
LANG 24 - C Adventure Toolkit v2.0 - very powerful language for creating large, complex text adventures

SOUNDTRACKER MODULES

Disks marked 'E' contain the Equinox player which will work on any ST or STE. Disks marked 'F' contain the Fingerbobs player which only works on the STE though the modules can be played with another player, such as the Equinox. Disks marked 'S' contain the Esion compatible modules and player and ONLY work on the STE!

TRAC 5 - Cebit, Chicago, D-Force 1, Easy, Techno, Illusion, Megazak, Oldwaste, Pugsy 1, Thrtheme 'F'
TRAC 11 - Blizzard, Clothes, Complica, Endtheme, Final, GSC-theme, Hi-energy, Hunters, Jackdance, Scratch 'F'
TRAC 20 - Alfa, Altair, Bluemon, Clutch, Disco, Einstein, Megamix 88, Shortpsh, Symphaze, Song, Flash 4 'E'
TRAC 40 - Aciii, All, Celtic 2, Creative, evolution, Frog, Kreuger, Lost, Trilogy 'E'
TRAC 49 - Berry, Close, Depress, Doc II, Eagles, Eg, Enemies, Esion, Going, Goodlife, Hdance, L-around 'S'
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Public Sector

Deadlines? We're artists, darling. Don't you see we need time with these disks? We must live with them, experience them and, in particularly extreme cases, eat them. Chris Lloyd flounces around in a big shirt and reviews Public Domain software between musing about life, the universe and everything

EDUCATION

DIZZY FUNTIME

Caledonia PDL – Disk PRO 18

● **One of six educational games from *Dizzy Funtime*. Here we are learning to recognise letters and use the keyboard. Stop yawning at the back! It's for young children – apparently it does them good.**

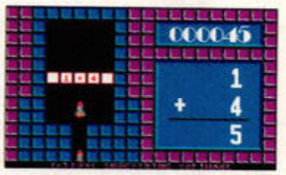
Another set of simple counting and spelling games for the very young. The graphics are bold and colourful, which matches the tone of the package well. There are two programs with three games in each set, so the disk should last for quite a while.

There are lovely big congratulatory screens and plenty of help available within the program. You have to be a bit accurate with the old rodent in some of the games and there's nothing in them that really breaks any new ground. Minor gripes aside, this is one of the better of the kiddies' titles – although it follows the same old formula, it's all well done.

***STF* Rating – 80%**

ALL BLOCKED UP

Caledonia PDL – Disk SES 6



● ***All Blocked Up* looks really easy, doesn't it? That's because this is Level One. Later on, you get real hard ones like – get ready – 82 minus 29. Done it? Too late!**

Practise maths-type numbers stuff and play a reasonably good little game at the same time. *All Blocked Up* has sums floating down the screen. Type in the right answer and off blasts a little rocket to zap them. Get it wrong and the sums turn to blue blocks at the bottom of the screen, giving subsequent sums less far to fall. Consequently, you get less time to do your calculations. Things get inceasingly difficult and manic as the sums get harder and fall faster. This is another excellent piece of software from Shoestring that's well-presented and playable – it even has decent sound effects, too. In the long run it lacks variety, but is good fun while it lasts.

***STF* Rating – 79%**

COMPUTER SCHOOL

South West Software Library – Disk 1877

● **The maths part of *Computer School*. Use the mouse to move the pointer and pick that answer. Get it right and the little teacher jumps around – just like the real thing.**

A set of three well-presented programs covering simple maths, spelling and memory tests. Each keeps track of your score and gives a little graph of your results. The maths program is a simple multiple-choice affair. The spelling effort is all mouse-driven – you click on the letters rather than using the keyboard. A choice would have been better. Little sprites appear and you type in the name. Lastly, there's the memory test. You get a quick flash of little boxes with numbers or pictures in, then it's the usual trying-to-remember-where-they-were trick. Slightly dubious educational value and jolly frustrating. One of the better collections of educational software, though long term appeal is limited. All you'll want to do is play through each one a couple of times and then that's it.

***STF* Rating – 72%**

GEOGRAPHY TUTOR

Jennix PD – Disk 256

● **Although limited in scope, *Geography Tutor* is an interesting lesson in the basic stuff. Part of it is a simple find-the-country game, not always as easy as you might think – Luxembourg is a real swine to click on, for starters.**

A statistical jaunt around Europe – register your copy and you get the rest of the world to play with. For each country, data is held on the population's literacy rates, growth, life expectancy and that sort of thing. You can sort on any of these aspects and display all countries matching your parameters. Want to know all the countries whose population has a life expectancy of more than 70 years? No sweat. There's also a quiz section of country and capital city recognition. A painless way to look up and learn the basic Euro-stats, which is due to become compulsory in 1994 because of a new EEC directive.

***STF* Rating – 71%**

USA 1900s

South West Software Library – Disk 1842 and 1843

● **Gosh, isn't that interesting? *USA 1900s* is a simple database of facts. Nothing is very detailed and the presentation's garish.**

USA 1900s is a database of information about America in the 20th Century. You get at everything with the mouse, click on the icons and then off you go. There's loads of information on population statistics, geography and history.

Unfortunately, however, the data is somewhat haphazardly chosen and text is often displayed in the bottom half of a low resolution screen in all sorts of horrible colours, making it extremely difficult to read. There are no quiz sections or other things like interactive graphics to brighten it up or increase your child's motivation to learn about topics that might be rather remote.

***STF* Rating – 59%**

THE BOX WITH THE TOP TEN IN IT

In the box with the top ten in it this month are the results of a fearless and searching investigation into the top selling disks from an organisation called LAPD. Questions are already being asked in the house.

1. **MENU MAKER** – DISK P24. Create your own demo menus with scrolling text and bouncing sprites.
2. **STAR TREK** – DISK G131. Updated version with digitised pictures and samples.
3. **CHAOS STRIKES BACK EXTRA DUNGEONS** – DISK G 77. New dungeons to explore, created with the commercial editor program. Get bashing.
4. **OH CRIKEY WHAT A SCORCHER** – DISK DEM 3. The somewhat awesome megademo.
5. **HARDCORE DANCEFLOOR** – DISK D 287. Acid house musical feast with five brilliant tracker tunes.
6. **PUNISH YOUR MACHINE** – DISK D 301. Two disk megademo with some outstanding screens.
7. **MYSTIC WELL** – DISK G 115. Classic dungeon delving RPG.
8. **DARKWARS** – DISK BU 71. More classic dwarf-bashing and maiden rescuing.
9. **NEWS DISK** – DISK M 81. Create your own disk-based magazine.
10. **STUPENDOUS DEMO** – DISK D 302. The pixel twins megademo with some totally bodacious effects

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DEMOS

HARDCORE DANCEFLOOR

State 808 PDL – Disk SAM 18

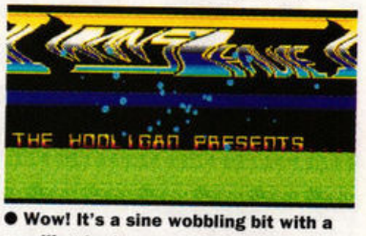
● The wild boys present *Hardcore Dancefloor:* five ripped off versions of other people's music, who have, in turn, ripped off samples from someone else. Get up and move that body!

Acid house – love it or hate it, here are five juicy examples of remixed tracker versions of chart stuff. The samples are clear and the sounds well put together. There's little to look at, but then you'll be leaping round the room, won't you? If you insist on having the music on your ST, rather than an old fashioned tape thingy, then this is as good an example as any – particularly the track *Charley Says*. Yo dude! And all that nonsense.

***STF* Rating – 80%**

TRANSBEAUCE DEMO 2

State 808 PDL – Disk MDEM 24



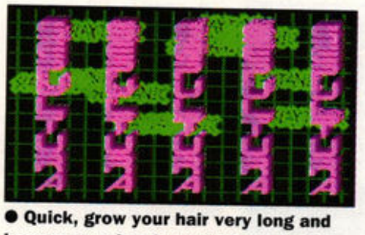
● Wow! It's a sine wobbling bit with a scrolling text message. Some nicely coded bits, but every group has done similar nicely coded bits. The second *Transbeauce* disk promises more.

One of two mega demos put together at a French coding party. Sounds like wild fun, doesn't it? You get an intro screen and then a simple menu for the 15 sub-demos. The demos aren't inspirational – wibbling text scrolls and manic chip music. Apart from a groovyish sampled track, it's all the same old stuff. There are plenty of unreadable lines of text in the borders – have demo writers got different monitors from the rest of us, or what? If you must have a complete collection of megademos, go and buy this; otherwise start with the better ones.

***STF* Rating – 70%**

THRASH IT

Nightshift PD – Disk STE 4



● Quick, grow your hair very long and bounce your head up and down really heavily, man. There you go! An instant headache – next week we discover an instant sprained finger. *Thrash* – it's loud, raunchy and a bit of a pose.

Three decidedly heavy bits of digitised thrash metal, accompanied by the usual scrolling text nonsense and a few Mr Wobbly graphics. The sound quality is lovely and crunchy – you can hear those guitars go chugga-chugga-wang. You need one of those new-fangled STE machines to run it – and the longest piece of mayhem also needs 1MByte of memory. Not really the most inspiring way to pass the time, but a laugh or two. Possibly.

***STF* Rating – 65%**

WRESTLEMANIA PICTURE SHOW

ST Adventurers PDL – Disk SLD 30

● "Right, lads, I want a good act – no falling over looking hurt when the other guy obviously missed. Love the leotards by the way." *WWF* comes to your ST. Let's hope it goes away again soon.

A slideshow of 40 digitised pictures from that surreal American wrestling program. The screens are swiped from video and are black and whiteish. What more can you say? If you're a big fan of the show and want to gaze at them on your ST, then you'll love it. Otherwise it's a complete waste of a disk.

***STF* Rating – 40%**

GAMES

BLACKSCAR MOUNTAIN

Budgie Disk BU 68

● The graphics in *Blackscar Mountain* are functional and the plot is in the one-lone-hero mould. Hintette – search around the ruined church carefully first. Once tooled-up, tackle the vampire.

Blackscar Mountain is a straightforward save-the-world-from-encroaching-evil-by-yourself text adventure. It's set in the standard middle-earth Tolkienesque world. It involves the usual puzzle-solving stuff – finding objects and sussing out what to do with them. It's been written using *STAC* – a dedicated system for producing text adventures. Unlike a lot of *STAC* games, it has been put together with care, so there are no horrible crashes. The parser is fairly good – it understands more than the basic verb/noun bit. If you're into adventures, then get it. If not, just try it.

***STF* Rating – 88%**

THE MANAGER

EM PDL – Disk GAME 132

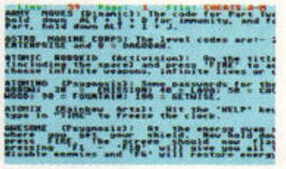
● In *The Manager* you take on the role of – er, the manager. Here we are, two games into the season and things aren't going well. Come on, lads – it's a game of two parrots and, at the end of the day, the winner is the team nearest the ref.

It can be a thankless job – plenty of hanging around on cold winter mornings shouting – and you have to wear a sheepskin coat and have a silly haircut. Still, the job of being a football manager seems to appeal to a lot of bods. *The Manager* is a comprehensive effort – guide your choice of team through the moments of glory, the blood, sweat and tears and the occasional sound thrashing. There are no fancy graphics or sounds – just straight text. Everything is mouse controlled and simple to get into. The only real omission is that you can't train up your players.

***STF* Rating – 78%**

GREATEST CHEAT DISK IN THE WORLD

ST Adventurers PDL – Disk Special 7



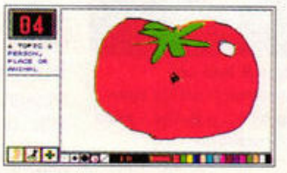
● If at once you don't succeed forget all that heroic perseverance nonsense and cheat. *The Greatest Cheat Disk in the World* claims to list every cheat ever published. Brilliant.

Can't hack it any more? Getting zapped at the same point evey time you play? Don't fret – give up! That's it, just give up, throw the disk in the bin and never play it again. On the other hand you could, you know, cheat. Here are over 200 of the things – all sorts of games get the treatment in two long alphabetical text files. It could just save your sanity.

***STF* Rating – 75%**

QUICK DRAW

Caledonia PDL – Disk GM 15



● *Quick Draw* is a straightforward version of the popular game *Pictionary* – but instead of using the traditional pencil and paper, you draw on your ST's screen. As you can see here, the correct word was "the Houses of Parliament."

You need some friends for this one – it's an ST version of *Pictionary*. One person is given a word and has to draw it on screen using a very simple painting program while the other team members shout ridiculous guesses, all against the clock. Get it right and your team advance round the board. If you like original ideas, it makes an interesting alternative. Fun to be had if you've got a few lively mates; otherwise a dead duck.

***STF* Rating – 64%**

STOCKS AND BONDS

Jennix PD – Disk 489

● This is about as exciting as the graphics get in *Stocks and Bonds.* It's a management game – buy low and sell high, then take a week in the Bahamas. If only it were really so easy.

Get that phone mobile and those braces red, take on the stock market and gamble with your dosh. *Stocks and Bonds* gives you $5,000 and ten years to get made or broken. Up to eight players can take part, buying and selling stocks in eight companies. At the end of each year, the market prices change and, depending on your investments, you have another go at buying and selling. Playing the real stock market is no doubt a buzz, but getting and losing fortunes during lunch playing *Stocks and Bonds* isn't.

***STF* Rating – 56%** →

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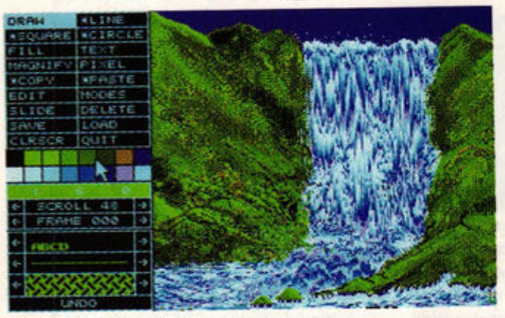
ART AND MUSIC

ART ST

Wizard PD – Disk ART 18



● *Art ST* is a competent – if not outstanding – painting program with the full range of standard tools in a strip of icons. All dead simple and a good one to start with.

Yet another PD painting program, *Art ST* has all the basic tools – brushes, fill patterns, block copy, paste and the like. It works in all resolutions and can hold as many screens as memory permits – you can even make a slideshow of them if you want. It loads *Neochrome* and *Degas* pictures as well as its own fill patterns. Dead easy to use but hardly bursting with features. Also on the disk are *Colourburst* and *Fineline*. *Colourburst* enables you to get zillions of colours on-screen using a fancy raster effect. Fiddly to use and not really that impressive. *Fineline* is different: pictures are drawn using lines or curves – it's interesting to experiment with. None of the programs stands out as first rate but together they make a good value disk.

***STF* Rating – 77%**

NEOCHROME TUTOR

Riverdene PDL – Disk 964

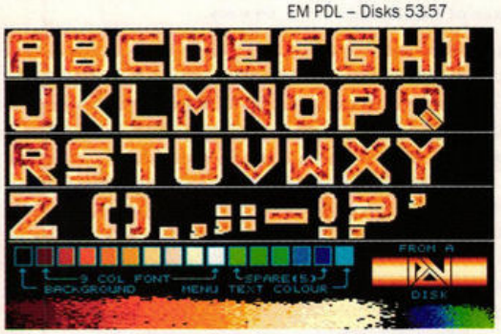
● *Neochrome* can do a lot more than it lets on. *Neochrome Tutor* gently leads you through all its functions. Each lesson is a simple step by step guide – here colour selection goes under the microscope.

Atari's *Neochrome* painting program is as old as the hills – nearly. Until it was recently withdrawn from circulation, it was the most popular Public Domain art program. Only one small problem – no instructions. Users were left to experiment with all the icons and functions on their own. This disk has 24 *Neochrome* screens filled with text and pictures explaining all the ins and outs, including all those obscure block functions. If you're still in the dark or want to make the most of *Neochrome*, then check this out.

***STF* Rating – 72%**

FONT COLLECTION

EM PDL – Disks 53-57



● Here's one I borrowed earlier – very interesting marbled sort of effect, don't you think? Each font has got detailed palette information, ranging from simple single colour affairs to other glorious 16 colour jobs.

A good-looking colourful font takes a while to put together – why not follow the lead of programmers everywhere and borrow them from someone else? Each of these disks holds 23 fonts as *Degas Elite* low resolution pictures, mostly borrowed from demos. There are all sorts of weird and not-so-weird typefaces. If you're just about to start coding the world's longest and most unreadable scrolling text consisting of greetings to your friends, family, everybody you've ever met and most of your local telephone directory, you need a quick font – look no further.

***STF* Rating – 61%**

The *FORMAT* PD directory

● Where to go for Public Domain software – demos, games and utilities for around £3 a disk (or even less)! If you write to any of these PD libraries for a catalogue, remember to enclose an SAE. ● Budgie games are available from all PD libraries indicated by a (B). Simply mention the disk number (above the review) when you order the disk.

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Arrow PD, 6 Kents Orchard, Perry Street, South chard, Somerset TA20 2QB

Atari Advantage, 56 Bath Road, Cheltenham GL53 7HJ ☎ 0242 224340

Awesomedemos, 3 Mason Road, Seaford, East Sussex BN25 3EE

B-Soft, 2 Oliver Drive, Calcot, Reading, Berks. RG3 5XN. ☎ 0734 419981

Elmsoft, PO Box 17, Loughton, Essex IG10 2EE

EVPD, 15 Cleeve Road, Gotherington, Cheltenham, Glos. GL52 4EW

Freaks PDL, 29 Leap Valley Crescent, Downend, Bristol BS16 6TQ ☎ 0272 570122 **(B)**

Gemini Shareware, 10 Warwick Avenue, Slough, Berks. SL2 1DX ☎ 0753 28183

Imageart, 19 Brenda Road, Tooting Bec, London SW17 7DD ☎ 081 767 4761

Jennix PD, 66 Abbey Road, Strood, Rochester, Kent ME2 3QB ☎ 0634 723659

MT Software, Greensward House, The Broadway, Totland, Isle of Wight PO39 0BX ☎ 0983 756056 **(B)**

Mertin PD, 10 Grasmere Avenue, Merton Park, London SW19 3DX

New Age PDL, 30 Anderson Estate, Lower Road, Hockley, Essex SS5 5NG

PD Essentials, 22 Fern Avenue, Mitcham, Surrey CR4 1LS

Prophecy PD, 390 Coulsdon Road, Old Coulsdon, Surrey CR5 1EF ☎ 0737 554536

Public Dominator PD Atari, PO Box 801, Bishops Stortford, Herts. CM23 3TZ. ☎ 0279 757692 **(B)**

Public Sector PDL, 50 Ripon Road, Stevenage, Herts. SG1 4NA ☎ 0438 364722 / 361324

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berks RG3 5AN ☎ 0734 452416 **(B)**

Senlac, 14 Oaklea Close, Old Roar Road, St Leonards On Sea, E.Sussex TN37 7HB ☎ 0424 753070

Seven Disk, Digswell Water Lodge, Digswell Lane, Welwyn Garden City, Herts AL7 1SN ☎ 0438 840456

Softville PD, Unit 5, Stratfield Park, Elettra Avenue, Waterlooville, Hants PO7 7XN. ☎ 0705 266509 **(B)**

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Tower Top PDL, The Coragen Corporation, 59 Tappenhoe Lane, Bletchley, Milton Keynes, MK3 7AD ☎ 0908 373642

Warpzone PDL, 53 Ropewalk, River Street, St Judes, Bristol BS2 9EG

Wizard PD, 178 Waverley Road, Reading, Berks, RG3 2PZ. ☎ 0734 574685 **(B)**

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Goodman PDL, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffs ST3 1SW. ☎ 0782 335650 **(B)**

High Tec Sequencing Services PDL, 20 South Lane, Shelf, Halifax, W. Yorks. HX3 7PN ☎ 0274 606205

LAPD, 80 Lee Lane, Langley, Heanor, Derbys. DE7 7HN ☎ 0773 761944 **(B)**

Metropolis PD, 38 Howick Park Drive, Penwortham, Preston PR1 0LU ☎ 0772 748422

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Office Choice, Suite 14, Avon House, Town Centre, Cumbernauld G67 1EJ **(B)**

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Atari ST User Group Norway, c/o SA Jensen, N-3630 Rodenberg, Norway

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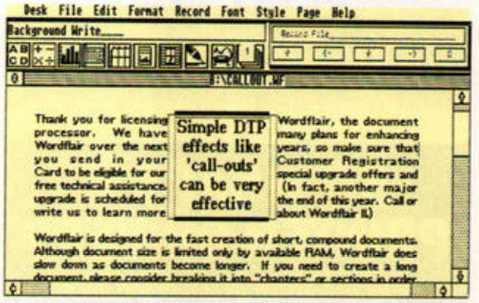
First words

Want to write to your bank manager about the personal loan that bought your ST? Simon Williams explains how a word processor can impress



● It all depends on the type of document you're preparing, but for newsletters and promotional pages, simple effects like the "call-out," where a small section of the body text is pulled out and enlarged in a box, can be very eye-catching. Document processors like *WordFlair* and *Calligrapher* can do this easily.

EVERY WP YOU NEED?

Just so you can get into word processing in a big way without any hesitation, the complete WP package *Write On* is *yours* on this issue's spectacular extra Cover Disk – turn to page 16 to find out how to get the most out of it.

Word processing is about as much like typewriting as typewriting is like chiselling letters in stone. With a typewriter, each letter you type is laid directly on the paper. Make a mistake and it's out with the Tippex (stonemasons don't even get Tippex). With a word processor, what you type is displayed on the screen. If you've misspelt a word or just want to change what you've written, it's simply a question of deleting the error and typing in the correction. This is the fundamental difference between word processing and typing, but there are plenty of other advantages to word processing.

You don't have to spend a fortune equipping your ST for word processing – there are word processors in the Public Domain which can be obtained for £1.50 to £3.00. The best known of these, *ST Writer Elite*, was yours free on the *STF* Cover Disk 27. If you haven't tried a word processor before, why not dig it out now and follow the walkthrough on these pages? If you don't have a copy, turn to page 78 for details of *STF's* back issue service. If there are any terms that fox you, check out the Jargon Busters box.

Type into a word processor and you can forget about using <Return> at the end of every line. All word processors have a feature, called word-wrap, which automatically transfers any half-completed words at the end of a line down to the next. Some word processors, like *Protext 5*, can also hyphenate words at the ends of lines, which gives a smoother right edge.

A few of the things you would expect any self-respecting word processor to do are:

Justify text – this simply means lining up the text against left-hand, right-hand or both margins (called "fully justified"). Word processors fully justify by adding spaces between words to pad lines out.

Search and Replace – your thesis on "The Life Cycle of the Dentoxile Reticulated Trilobite" needs all references to said Trilobite changed to "Grey Woodlouse." The Search and Replace function does this automatically, either in one pass or stopping for you →

UNSCREWING THE JARGON

Bitmap – a form of graphic which is represented as an array of dots. Images from *Neochrome, Degas, Deluxe Paint, Cyber Paint 2* and *Canvas* are all bitmaps.

Graphic text –relies on the graphic abilities of your printer to "draw" a page rather than using your printer's own set of internal fonts. As a result you can use more fonts. Graphic printing is slower and you need an inkjet or laser printer for perfect results.

Header and Footer – strips of repeated text along the top and bottom of pages.

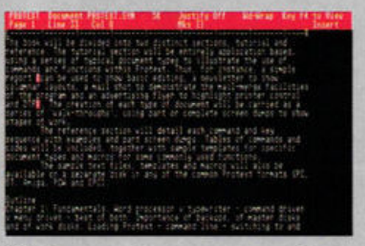
Indent – setting in of text from the left margin to show the start of a paragraph, section break or quotation.

Typography – the study of type and its use on the page. It covers the design of fonts, their styles, spacing and positioning on the page.

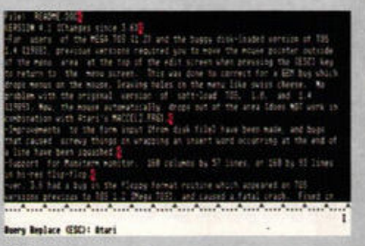
STARTING TO CREATE A DOCUMENT

1 When you first start a word processor, you need to load an existing file or create a new one. *ST Writer Elite* is a little unusual in having a full-screen main menu for this. Most functions are also available through the GEM pull-down menus at the top of the screen. The Create function sets up a new, empty file, while Delete pulls an existing one to the trash can. Edit switches to *ST Writer's* editing mode and Format formats disks. Index displays a directory, Load, Print and Save are self-explanatory, Receive *AtariWriter* loads in and converts an *AtariWriter* – an old 8-bit word processor – text file, Transform Colours switches the background from black to white and Quit, well... quits.

2 Most word processors use complicated-looking menu bars to control their functions. These aren't as daunting as they first appear, though. Take the File menu from *1st Word Plus* as an example. The only options you need to learn to start with are Open, which you use to load an existing file or create a new one, the three Save options, which save the current file and close the window, save it and resume editing or save it under a different name, and Print, which sends the document to the printer. Later, you can extend your range with Read to insert a file into the current one and Write Block to save a highlighted block of text.



3 If you need to move, copy or delete a section of the text in your document, you can mark it for "cut and paste." In most programs, including *Protext*, you can use the mouse to highlight the text block. With *Protext*, though, you can also highlight it by placing "block markers" (the white-on-red square brackets) at the start and end of the block. To move, copy or delete in *Protext* you use special key sequences or select options from the program's pull-down menus. With other word processors, the pull-down menu is the more common method.



4 The power of word processors to change one word or phrase for another is shown in even the most humble program, like *ST Writer Elite*. When you select the function using <F7>, a single line query comes up at the bottom of the screen, asking for the target of the search. Type that in, press <Esc>, and type in the replacement word or phrase. The program then goes through the text, stopping at each match to check that you want the replacement made. Most other word processors enable you to pick whether search and replace phrases are in upper or lower case and choose to perform the whole thing without checks.

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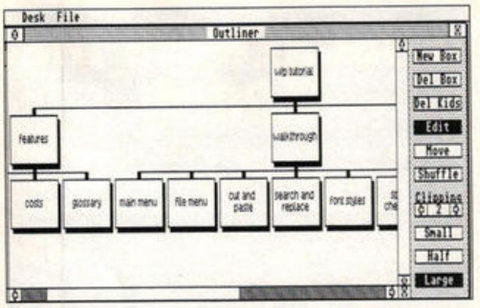

● ***Calligrapher Professional*** **and** ***Word Writer ST*** **are the only ST word processors which include an "ideas outliner." An outliner helps you set down ideas on any subject as they come to you and order them later into some sort of structure. It can be particularly useful with factual writing, such as this introduction. Once you've created the boxes (as shown here), you can import them into the text document as a series of headings and sub-headings.**

→ to confirm each replacement. The utility should also take care of whether the letters are in upper or lower case in both target and replacement.

Cut and Paste – as the name implies, this feature enables you to cut (delete) or copy any highlighted area of text, from a word up to whole pages, to another place in the document. Highlighting can usually be done with a mouse, though earlier versions of *Protext* relied on marking the start and end of the block with special characters.

Check spelling – however good you are with the English language, spelling mistakes almost invariably occur. They may be simple typing errors or they may be words about which you have a "mental block." A spell checker goes through your text and highlights any words not in its word list. Most then offer a list of possible corrections for you to pick. Bear in mind that spell checkers can't pick up misused words spelt correctly. For example, "the big brown bare" passes a spell checker without raising an eyebrow. Also check you can add specialist words of your own to a "user" dictionary. It's a real pain to have to tell a checker to ignore "ST" every time it comes across it.

Include graphics – it's often very useful to include logos, scanned photos or clip-art in your documents. Some word processors, like *1st Word Plus* and *Write On* can import bitmapped graphics and include them as part of a document.

Mail merge – if you want to send a notice to all members of your ST users club, most word processors enable you to pull in each name and address from a list in one file and insert them in copies of the notice in another.

There's an increasingly fine line now between word processors and desktop publishing (DTP) packages. DTP programs enable you to create pages for professional work, such as advertising designs, magazines and brochures. The facility What You See Is What You Get (WYSIWYG) can be very useful if your documents are complex since documents look on screen exactly as they will on paper. However, it is by no means essential in a word processor.

Programs like *ST Writer Elite* and *Protext* concentrate on text handling pure and simple. While they can produce different type styles on paper and use a printer's internal fonts, they don't claim to be "document processors," a term often used to describe programs such as *Calligrapher* and *WordFlair*. These programs incorporate many of the features of true desktop publishing packages, giving close control of typography and layout. Word processors like *Write On* and the ageing *1st Word Plus* lie somewhere between these two approaches.

DTP-style facilities in word processors doesn't mean they are any worthier. *Protext* is a good deal faster at what it does than just about any other ST word processor. It can produce a well laid-out document quickly and effectively and, as a word processor, it's probably all you're likely to need. If you want the DTP-style extras, though, you should look at programs that make good use of the ST's GEM environment and work with graphics text, which is much more versatile. ***stf***

TYPE STYLES

You don't have to be satisfied with bog-standard, mono-spaced text like the old Remington turned out. Your ST can go several times better with bold, italics, underline, superscript and subscript. Most printers can print this selection of styles and some can use a variety of fonts, too. Super and sub-scripts are useful for scientific work, but can also be put to good use if you want a particularly small font for labels or the small print on time-share contracts.

Not all word processors use the normal GEM technique of highlighting to apply styles. In *Protext*, for example, you type special key sequences before and after the section whose style you want to change.

SO WHAT'S A PRINTER DRIVER?

All printers use a system of codes to start new pages, change type styles – even to go to the start of the next line. Unfortunately, they don't all use the same codes for the same functions. You need a convertor – known as a printer driver – to take the output from your word processor and produce the required effects on a particular printer. The codes adopted by the best selling printers in each class have become standard. Other manufacturers have then used the same codes for the sake of compatibility. Most word processors come with printer drivers for the common types of printer: dot-matrix, inkjet and laser.

● ***Protext*** **(£152) is available from Arnor ☎ 0733 68909**
● ***1st Word Plus*** **(£79.95) and** ***Word Writer ST*** **(£49.95) are from GST Software ☎ 0480 496789**
● ***WordFlair*** **(£79.95) is from HiSoft ☎ 0525 718181**
● ***Calligrapher*** **(£139) is available from Working Title ☎ 0865 883233**

NOW I'VE GOT THIS FAR, WHAT DO I DO WITH IT?

5 Depending on the printer you use with your ST, you should be able to choose from a wide range of styles and fonts. Whether you can see them before you print, though, is a different question. If you use one of the graphic word processors like *1st Word Plus* or as here, *WordFlair*, you should be able to see both changes of style, like bold, italics, underlined and outlined text, and changes of font, with the file names in this document in Swiss font. Simply highlighting text and picking from menu options is all you should need do to create these effects.

6 When you've written your letter, report, or Stephen King beating novel, it's best to check the spelling. Some word processors, like *1st Word Plus*, offer to do this for you. They're generally much quicker and more accurate than you're likely to be, so it's worth running them over your prose. Good ones, like the 40,000 word checker of *1st Word Plus*, give you options to browse through the word list and pick a correction, or to add the queried word to your own supplementary dictionary, personalised to your own area of usage. This one can even check as you type, but this can be more irritating than useful.

7 Before printing your first document, you need to have selected a printer. Most word processors offer an Epson dot-matrix printer driver by default, but many also offer drivers for the Atari lasers, Hewlett Packard's LaserJet and the popular Canon BJ series of inkjets. To switch between printers, you often have to generate a new driver from a separate utility program, which the main word processor then picks up and uses when it's run. *Protext 5*, however, enables you to load in a new driver at any time from the printer menu.

8 When you finally come to print your document, the print menu offers a number of different settings. In *ST Writer Elite*, you can choose to send your text to the printer, a named disk file, the screen (for preview) or to a third party print spooler which releases your ST for further work. Other options enable you to print only part of the complete document, to choose draft or final print quality, to print more than one copy and to print only left or right-hand pages – or all of them together.

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dress:_____

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ening Tel No:_____

e_____ Occupation: _____

ght or Left handed: _____

Top 3 Favoured Games	Hi-Score / Level
1 _____	_____
2 _____	_____
3 _____	_____

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Please find enclosed my cheque/Postal Order for the sum of £10.00 made payable to Barclay Computer Services Ltd in respect of my registration fee with the Olympiad Committee for the 1992 Computer Games Olympiad.
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March 1992
Disk: *Knightmare* demo; *Kozmic* pattern generator – *exclusive*; *STOS* extension and more!
Inside: Find out how you can make money with your ST; reviews of *STOS 3D* and *Timeworks 2*; over 40 ST tips!

ISSUE 31

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Disk: *Stereo Master* preview; *Revenge of the Mutant Camels* – *complete*; *ten* utilities
Inside: All you need to know to get started with the ST; roundups of top software, games *and* add-ons; inside your STE

ISSUE 30

January 1992
Two Disks: *complete* Sound & Vision packages, *plus* "Get Started" supplement; *Populous 2* & *Baby Jo* demos; & much more
Inside: Being creative on your ST – DTP, programming, graphics and music; high res games

ISSUE 29

December 1991
Disk: *Autoplay* intro sequence creator; *Daylight Robbery* and *Stereo Replay* demos
Inside: Making your own intros; score-writing packages; ST-related book roundup; *Band in a Box* reviewed and rated

ISSUE 28

November 1991
Disk: *Three* fractal programs; *MiG-29M Super Fulcrum*; *Home Accounts 2* demo
Inside: All you need to know about fractals on your ST; 25 "serious" packages reviewed; floppy drive roundup

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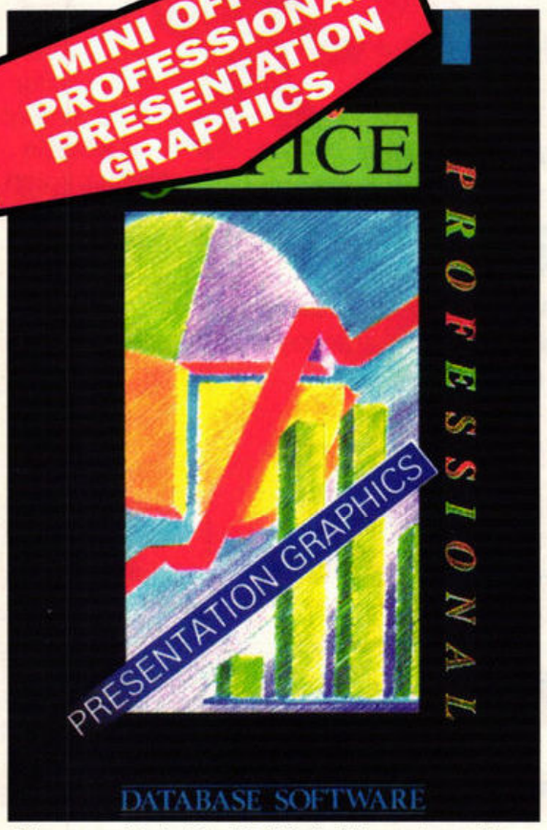

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side: Protecting your ST from uses; how STs are being used produce TV ads and business rds; *Calligrapher* reviewed

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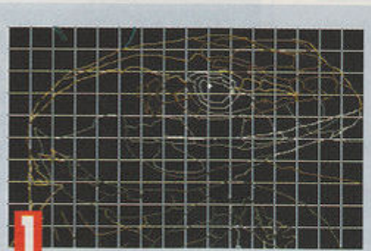
REPTILIAN RENDERINGS

Why, the winner is none other than **Paul Keller** of **Saltash** in **Cornwall!** And as he makes his way to the podium (just look at that suit!) there's just time to say – oh no there isn't. Take it away, Paul...

"I have been using an Atari 520STM for about five years. I normally draw all my graphics with *Degas Elite*, but now, thanks to *ST FORMAT*, I will be turning to *Canvas* with its similar layout and ease of use but more powerful features. I haven't created computer graphics for any software houses, but am interested in doing so.

The reference for this illustration was a bit small (20% screen size) – not ideal, but I liked the way the lizard stood out, with all its highlights and domineering appearance. This type of picture is complicated to draw, because of the lack of greatly differing colour zones. The best solution is to use a scaled grid – this ensures higher accuracy.



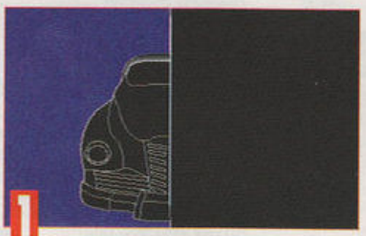
1 I drew up a scaled grid and coloured outlines to their corresponding base colours using both K-Line and Draw in normal screen view size. A fair amount of time goes into choosing my colour palette. At this stage it can easily be changed, but it's better if you get similar shades and colour ranges in order of lightness.

2 I used the Airbrush tool on the background after first selecting a small nozzle and low speed. The area to be covered was first filled with its base colour – lightest green in this case. Next, I used a darker shade and sprayed around the corners of the area I was working on. I continued to do this, increasing the darkness of shades while reducing the amount of airbrushing to the corners. This makes the lizard stand out more from the background. I further enhanced this with a black line around the lizard between the connecting boundary and the background. I used the base colours for filling and I also worked on some eye details.

3 I worked in Zoom mode for the foreground. I changed the colour palette using more greens and browns to suit the atmosphere. I built the larger scales by using the darkest colour as a base and building or decreasing amounts of lighter shades. The rounded scales on the neck were built up by creating small spheres of different sizes and colour. These were highlighted with white pixels to give them shine, and black for shadows. Using Block and Copy I pasted each sphere down working from top to bottom ensuring correct overlaying of sphere edges. This gives depth to the picture: wider spacing for a concave surface and tighter spacing for convex.

AMERICAN BEAUTY

Motors were a popular choice of subject. **Gavin Smith** from **Morayshire** sent in this moody set of wheels. "One thing I've noticed is that everybody draws cars side on, so I decided to put a different perspective on things.



1 I drew the outline of half a car using the Line function. I chose some grey scales to work with. I changed the background to blue so I could see the darker shades.

2 Now comes the clever bit. I cut the whole left side and flipped it over, then pasted it on the right side. Hey presto! A perfect inverse copy. The next bit is time-consuming but necessary to get a good results. Using Zoom, I began to shade the car. The left side and bumpers were finished when suddenly four bombs appeared on the screen. Only two hours work down the drain. I checked the disk and found a virus. Hint: save your work often!

3 Then I did the right wing. I thought of flipping the left wing but the shading was all wrong.

ANGEL

ANGEL

This original piece of pixelated art was put together by **Pamela Ivison** from **Washington.** Rather good it is, too.

1 "I started the picture by using a blue – which I eventually changed – and the Fill mode for the background. I then used a smallish brush and grey tone (colour value 10, 10, 10) to draw a rough blocked figure in Freehand.

2 Here I used the Zoom mode to draw in details of the face, breast and upper wing. I used Draw mode to adjust the shape of the wings.

3 Using a small brush, I layered all the shades of grey onto the underside of the right-hand wing. Each shade was one step lighter than the next, moving from top to bottom. Again I used Zoom mode to shade the upper wing, and to tidy the darkest shade of grey on the underside wing. I then used a small brush to start the material of the tunic, and tidied the effect in Zoom mode.

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(Dickie Attenborough voice) Surely none can be as proud, now, as I am, about, with all due respect, to present this award, to, this year of all years, the *Canvas* Competition Winner. And the winners are... Ed Ricketts and Chris Lloyd! (Monty Python? Never heard of them)

You may remember that, back in issue 30, we gave away the complete version of *Canvas*, free, gratis and for nothing, even (well, almost). You might also remember that in the supplement that came with issue 30, we ran a competition offering £200 for the best piccy created with *Canvas*. Now the time has come to announce the winner of that fabulous compo. All is revealed below. Among all the excitement, though (yes, excitement. Aren't you excited?), don't forget that the KCTFSPS happens every month, compo or not, and we need your pictures. Lots of them. With hundreds of intricately-detailed stages, explaining your thoughts, your techniques, your ideas, your nerve impulses as you went about drawing them. Whack the bits onto a disk to make a coherent whole and send them to Gallery, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

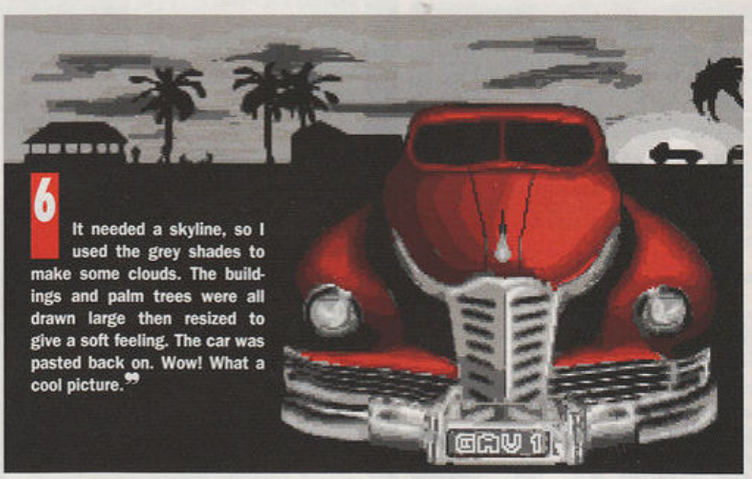
4 More work on spheres. Here I had to use an experimental technique to gain more detail on even smaller spheres on the lizard's back to the right of the screen and tight to the corner of its body on the left. Each small sphere contained nine colours in a small area to give them a higher shine and contrast in relation to the larger ones. These were also laid from top to bottom. To the right of the picture I worked on the scales of the lizard's belly – first drawing the crater-like outlines of the scales. I added depth to these outlines by increasing a darker shade range at intersecting points. I put a shine on by using three shades of colour on the base colour of these scales.

5 I added many more scales using Zoom. This is slower than the Block and Copy method used for the spheres, but is unavoidable if you want a random pattern – as I did for the creation of differing shapes. I finished off the breastplate of the lizard, adding shadow across the scales to give more life to the picture and emphasise the angle of the head. On the edges of the scales under this shadow, I added a highlight of a lighter shade, following the outline to the left of the scales. This gives depth to the scales but uses a minimum of colours. It also helps to lessen the "jaggies" by softening these edges of scales. A little more detail was added around the eye in Zoom.

6 Although the spherical scales were good, I felt the larger random ones could be improved. After experimenting, I found dithering the colours by hand in Zoom mode gave the best effect. By doing this, you can obtain a random pattern which is more effective than a coarser gradient fill pattern. More tidying up, including the eye, and the picture was finished. Overall, it stands out well with the colours being a bit unusual. The picture took about 20 hours to complete."

4 I cut a small piece from the bottom of the radiator and flipped it, then pasted it on the bumper to get some chrome-like reflections. I finished all the shading in Zoom mode.

5 The car looked good, but it looked like a black and white photograph. I decided to add some red to my palette. I then used Replace Colour to paint the car red. I tried blue and green but they looked funny.



6 It needed a skyline, so I used the grey shades to make some clouds. The buildings and palm trees were all drawn large then resized to give a soft feeling. The car was pasted back on. Wow! What a cool picture."

4 I layered the greys on the left wing as I had for the right using Zoom for the upper wing shading and lower darker shades. The basic position of the feather was done freehand in Draw. Detail and shading were added in Zoom. I used a smallish brush for hands and wrists. I darkened the sky to blue, used Line for the horizon, and Fill for the sea. I did the light on the sea in Draw, though I used Zoom around the figure to avoid splodges. I used a small brush in Smear where the sea was lightest.

5 The moon was done as a regular ellipse using Zoom for shading. I started the balustrade by using the lightest grey shade and Line. I used Zoom to phase lines of darker grey below, layering the grey step by step, then put in the light and shadows. The column was done in a similiar fashion, horizontally. Because of the size of the pixels, I had difficulty getting the right shape for the upper hand. The upper arm was too straight and was altered in Brush mode using the second smallest brush.

6 I altered the sea to grey (04, 06, 08). I used Brush to suggest the basic shape of the cloth, and Zoom for more detailed light and shade. The whole picture took about eight hours."

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ALCHEMY FOR BEGINNERS

Jeremy Arthur of **West Sussex** says *Canvas* was difficult to get used to after using *Deluxe Paint*. (Can't be that difficult if he can work his way round that.)

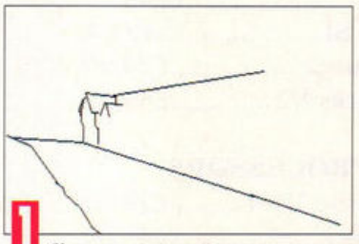
1 "The main shapes were placed on the screen. I used a large brush to draw in the shapes, except for the circles. The whole thing was then neatened up by careful use of the brush, and built up under magnification.

2 The open book took a lot of trial and error trying to get the text to run across the pages properly The texture of the wall was roughened up under magnification. I found the skull rather pleasing.

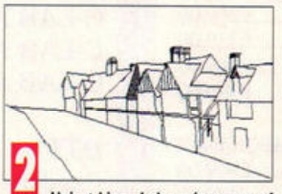
3 The foreground objects were then roughed in and tidied up under the magnifying glass. Last but not least, the all-important light source – the candle – was drawn in."

THE LONG AND WINDING ROAD

David Froggatt from **Manchester** had previously used *Quantum Paint* but found *Canvas* much quicker and easier to use. His entry is an atmospheric street scene.



1 "First of all, I drew the far end house in my picture using the Line function. I then drew the roof line coming slightly upwards and the pathline slightly downwards to give the far end house a slight distance.



2 Using Line, I drew in some of the detail. I also used the Zoom mode and filled in the shade on the small chimney pots to remind me from which side I wanted the light to shine. In this case, the light is to shine from the right-hand side.

3 To colour and shade the houses, I used Zoom with three shades of green and dark grey. I used the grey in the middle of the row of houses, so I could then use my three shades of green for colour and detail on the front houses.

4 Using Fill, I filled in the path and grass verge and used Brush for the shadow. Then using the Line function, I drew a skeletonal figure for the man and used Zoom to colour him and his shadow.

5 Using the brush, I drew in the back trees and bushes. Then I began working on the tree on the right giving it a golden autumnal look adding dark grey for detail.

6 The sky was filled in with golden yellow, just to lighten up the picture – this gives it an early morning or early evening look. Lastly, using Zoom, I added little touches of detail on the houses."

VISIONS

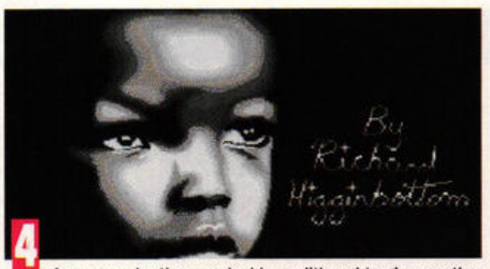
Richard Higginbottom of **Derby** was, er, inspired to draw this picture after seeing an ad in a magazine (not *ST FORMAT*, unfortunately). "I didn't expect it to look much like the advert at the start, so the results took me by surprise," he adds.

1 I got the shape of the face correct before going into any detail. Once I was happy with it, I started on the eyes and filled the face with white.

2 Here, I divided the face into different shades of grey using K-Line. I did the lips first in full detail because they looked the easiest. To do this I was constantly flicking between the main screen and the Zoom window.

3 This frame took the longest. The lower half of the face now looks realistic because I added all the grey shades between light and dark. After standing back from the screen and looking at it from a couple of metres away, I realised it was too wide. Using Block I resized the face to two-thirds the size it was before.

I then took a break from doing the face and did the signature. This took a while because after I'd got it looking right in one colour, I split it horizontally into several colours. All of this was done in the Zoom studio. I'd also split the forehead into the different shades by drawing freehand, then filling.



4 An area under the nose had been dithered to give another shade of grey. I realised that if I had dithered some of the picture, I should do the rest as well. So I went to work on the cheeks and forehead. I also altered the colours on the palette for the signature to grey scales, which gives a good effect.

5 The previous stage was going to be the final one until I had another idea – that some colour would be attractive. So, I altered the palette by changing the greys and put slightly more red in each shade, giving the face a bronze finish. This also made it different from the original picture."

Next issue we're bringing you a Gallery special telling you everything you need to know about how to draw your own perfect pictures – everything from selecting the right palette to adding highlights are explained in our step-by-step guides to three styles of picture. Get your issue on Thursday 9 April. stf

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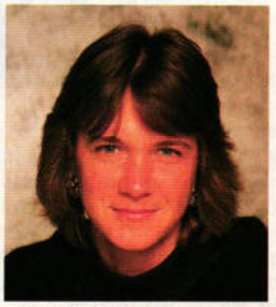
SCREENPLAY

***CRUISE FOR A CORPSE* CRACKED ● *MAGIC POCKETS* – THE PROGRAMMER'S OWN SOLUTION ● BEAT *MERCENARY 3* ● *15* TOP GAMES CHEATED – PAGE 115**

Look! Even at these temperatures some other games reviews fade and fail. But Screenplay keeps on going. And at 0% finance, you can't afford to miss the next exciting episode, available from all good bookshops (except in Scotland, where readers have their own program)

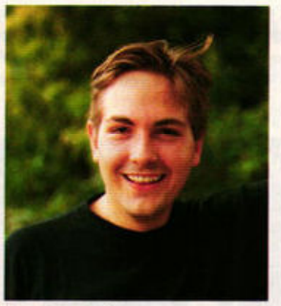
THE *ST FORMAT* REVIEWERS – living proof that constants aren't, variables don't, and common sense isn't

ED RICKETTS
Ed claims to have written all the Monty Python sketches way before they did. He also totally denies all knowledge of Fry & Laurie and David Lynch.



PAULA RICHARDS
"Richards's prose is like the lapping of warm water on a sundrenched beach."
– P J Richards, *Game Reviews: An Illustrated History.*

CHRIS LLOYD
Chris believes the only things that matter in life are ginger beer, good clean family jokes and half an hour's meditation with a green calava.



JAMES LEACH
James's motto is "Tense, nervous headache?" Seagulls are something of an obsession with him – he once ate four in one sitting.

ANDY HUTCHINSON
Andy still has the scars to prove it (at home, in a box). He makes a decent living as a part-time yak trainer and traffic cone on the M5.

ANOTHER WORLD
"Oh," sang The Wonder Stuff, "in *Another World*, he could wear a dress." What do they mean? Are they insinuating that the hero of Delphine's new graphic adventure is, er, affected by a certain, um, condition? Or are they just bonkers? We'll never know.
page 90

SHADOWLANDS
Remember those old adventures that went: "It is dark. You can't see. Oh dear, you seem to have accidentally fallen into a huge vat of boiling acid. You are dead."? Well, now you can relive those days, but in glorious 3D and with a lot more gore.
page 98

KNIGHTMARE
Unsavoury goings-on: small children wearing helmets, standing in big blue studios, pretending to battle fearsome monsters and taking the advice of a bearded man with a name like a sweet manufacturer. Thank goodness the game's nothing like the series.
page 88

STORM MASTER
Titter titter. Lots of jokes about controlling your wind are ripe for the making here. But we wouldn't stoop to that level. Actually *Storm Master* is one of those French games with a little bit of everything thrown in – sort of an arcade-adventure-RPG-strategy-sim, really.
page 94

DISCIPLES OF STEEL
"So go, Freblick, and free the land of Psting from the evil that the hideous Fritwi-pyang has brought upon it. Rescue the sword of Ti-ti-ti-ting, destroy the vile Sheetwraiths and restore order to the Vale of Toinnnnng." "Sorry, I wasn't listening. Can we go through that again?"
page 96

SPECIAL FORCES
"Cluster bomb?" "Check." "Lee-Enfield rifle?" "Check." "Khaki battle fatigues with train-spotter badges tightly sewn on?" "Check." "Woolly hat?" "Hang on... check." "Boy's Own Book of Commandos?" "Check." "Fear of dying horribly?" "Blast. I knew there was something."
page 104

DISSECTED THIS MONTH

– without anaesthetic, but very humanely

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- **It is *ST FORMAT* policy to review only finished games – that is, the games you could actually buy in the shops – never incomplete or demo versions**
- **We review *all* games released, but only when they are finished. We won't be rushed into reviewing unfinished games to beat our "competitors"**

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KNIGHTMARE

● Right at the start you find yourself in a forest with four tree monsters. Give them what they want and you can access the four quests. Chuck the twig at this one and it's happy.

● The huge-green-headed monster from the forest. You reckon he looks deadly? No chance – a couple of whacks and he wimps out. Just as well 'cos you meet him early on.

● In this RPG/*Dungeons and Dragons* style adventure a bunch of ogres disguised as telesales people give you a sound slapping. All this to get hold of a spade – adventurers are truly intrepid, not to say slightly daft.

● Objects carried in your hands appear on these cushions. Click on them with the right button and up pops a menu of options. Put magic wands in the right hands and all sorts of ancient mystical magic powers are yours to abuse.

● Each character has the obligatory inventory screen. Click on the characters icon with the right mouse button and up it pops. Here you can get at your backpack, check out your role-player type stats and energy bar – that's the one with lots of nuts in.

The forces of evil are at it again – striding about in black robes doing deep booming laughs and being unpleasant to small children and animals. What do the good and righteous dudes do? Get the roughest, toughest, don't-know-the-meaning-of-fear mercs, give them tactical strike aircraft and let them loose? No chance, instead it's up to four decidedly weedy adventurers to keep the world a safe and better place by wandering around holes in the ground being set upon.

Knightmare takes every cliché from RPGs and *Dungeons and Dragons* games and does it all again. Forget all the wibble about the TV program – it's a straightforward clone of the famous *Dungeon Master*.

Your band of merry people wander – and occasionally run like the clappers – around a dungeon, grubbing around for keys and food. You are thrown in at the deep end without any victuals, weapons or even clothes. After a quick train ride you find yourself in a dark forest. Root around and you find yourself some kit. Although tee-shirts and bouncy balls might not be your first choice, luckily find a peashooter in the first quest along with some magic wands. After a while, the game develops into the usual explore-and-bash sequence. The puzzles are generally easy and the punch-ups not so. The dungeon master character gives you plenty of helpful hints, so ignore those and get killed a few times before following them like all real heroes.

There are four quests to complete on the way to defeating evil Lord Fear – even hardened players are going to find it difficult. The method of using objects is a little awkward at first and it's easy to get confused during a fight and pick something up rather than use it.

The graphics are detailed and colourful – almost too detailed. Objects can be hard to spot against the backgrounds – you find yourself peering at the monitor from a few inches trying to figure out what things are supposed to be. The sound effects are the usual samples that suit the atmosphere well – grunts, clangs and screams.

VERDICT: Everyone's going to think it, so let's just come straight out with it. This game is like *Dungeon Master*, only not as good. The similarities are abundant, although nothing is bettered. The emphasis leans too heavily towards combat and away from problem solving – you can easily get stuck into rounds of punch-ups. It's not too easy at first and those uninitiated in the world of orc-mangling and key-finding might find it hard going at first.

It's well put together and playable enough, but there's nothing new here. Aficionados of the genre are no doubt going to love the prospect of another tortuous maze filled with monsters to beat and bash. Those who haven't entered the dungeoneering world are in for a treat – not an original one, but a treat nevertheless.

CHRIS LLOYD

KNIGHTMARE

MINDSCAPE – £30.99

- *Captive* without the technology
- *Dungeon Master* is more playable but has less atmospheric graphics.

STF RATING 77 %

CAN I WAKE UP NOW PLEASE?

A little row of icons including the Sleep and Save Game ones. You'll be using these a lot. Good to see the option to increase the mouse resolution, too.

The view forward – often obscured by small groups of creatures hitting you.

The bars represent health, stamina and magic power. Click on these to swap your leader, your position and to get at the inventory screens.

Movement icons but using the keyboard is easier.

Character-held objects – activate them from here including the all-important bashing tools.

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ANOTHER WORLD

● Another day, *Another World*, another graphic adventure and another particle accelerator/lightning/time displacement type accident. Don't you find they always happen at just the most annoyingly inconvenient moments?

"The earth was created in six days. *Another World* took two years," boasts the box. God will doubtless be suing, but the fact remains that it did indeed take a fifth of a decade to put this *tour de force* together. But two years our time or their time? Ed Ricketts hasn't a clue (as usual)

When you're blessed with a name like Les, it's almost inevitable that you'll turn out to be a scientist. And Lester Chaykin has done that in spades. He's really rather a good scientist actually; he gets to play with the really massive machines like particle accelerators.

So, there he is working in his lab one night, accelerating his particles, dividing his atoms and so on, blissfully unaware of the storm brewing up outside. And wouldn't you know it, just as

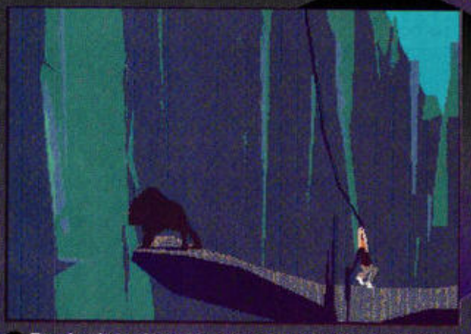
RUN! RUN FOR THE HILLS! NO, RUN AWAY FROM THE HILLS!

There is indeed a lot of running away to be done in *Another World*. In fact, your first major task is to run away from a big black beastie. Then, later on, there's plenty of running from guards. Just tell yourself discretion is the better part of valour and you'll feel better.

1 Don't just stand there dripping by the edge of the pool. Explore! Look around! Get dry, at least. Off to the left is a jumpable ravine with a vine hanging down on the other side, but that doesn't do any good. Go right instead.

2 Here you find these nasty *Eraserhead*-like leech things that drop from the roof. Don't get too close to them – they scratch, and the fluid they secrete is not entirely compatible with your system. In other words, they kill you. Kick the little bleeders – that gets rid of them. Carry on right.

The most difficult run of all, though, is this one.



1 Run back to the ravine screen, jump the gap and hang onto the vine. The beastie can't get you and you just swing past him back onto the right of the gap. Keep running – the beastie won't give up. But something else will get him (and you)...

2 About halfway through the game, and you've blasted the rock to tilt it up, enabling you to reach that ledge. Climb the rock and edge cautiously onto the next screen (never run onto a screen – it's fatal).

3 But it's all right – there's nothing but a couple of pits to jump. Actually, even these can cause problems if you don't concentrate. Jump them carefully.

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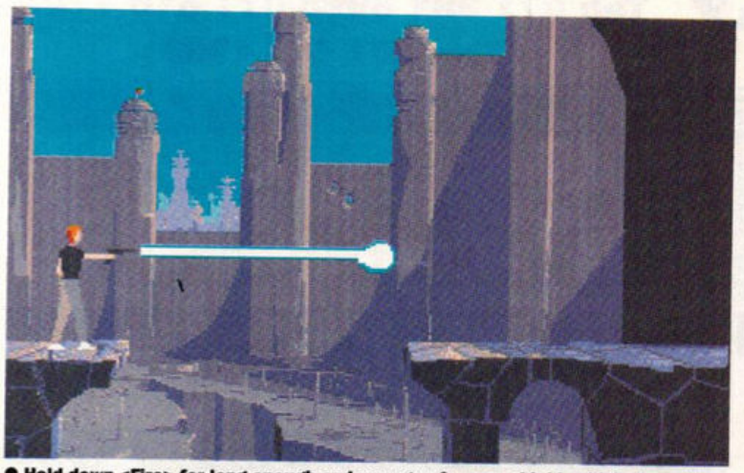
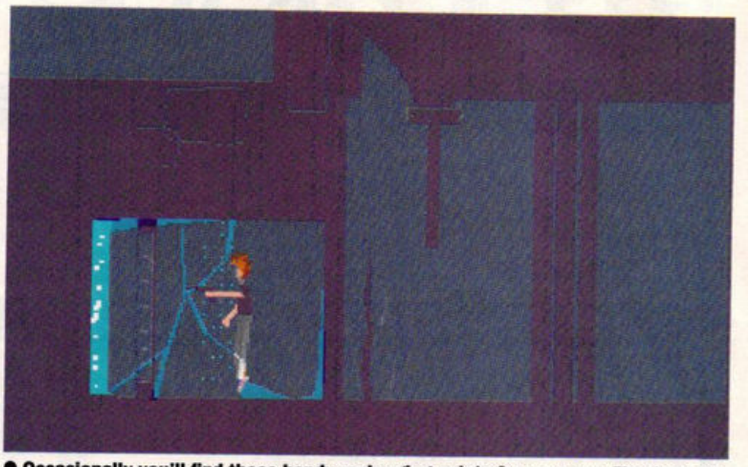


● Hold down <Fire> for long enough and your gun forms a shield, which stops the fire of enemy guards for a short time. Hold it down a bit longer and you build up a massive power shot that's great for blasting through doors.



● Occasionally you'll find these handy recharging points for your gun. They're a bit drastic, but they get the job done. But remember children, if you try this at home make sure your hands are nice and wet and you're not wearing any rubber.

he's about to get his particle up to that tricky optimum speed, his bloomin' lab is struck by lightning. That sort of thing isn't really conducive to technical precision, particularly when the lightning surges through the accelerator, interacting in a strange and wonderful way with the circuitry within, blowing Lester out of his seat into another time and another world. Not the best of ways to spend an evening.

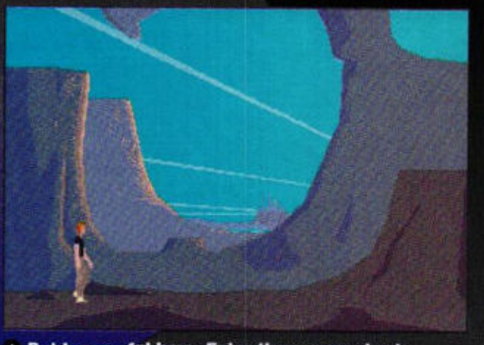
Our Les finds himself, at the beginning of the game and probably somewhat to his surprise, languishing in a pool, and very quickly drowning. At this point you start to panic because you don't have a clue what to do next. Swimming upwards is a good idea.

A lot of time and effort has obviously gone into making the game look and flow like a film

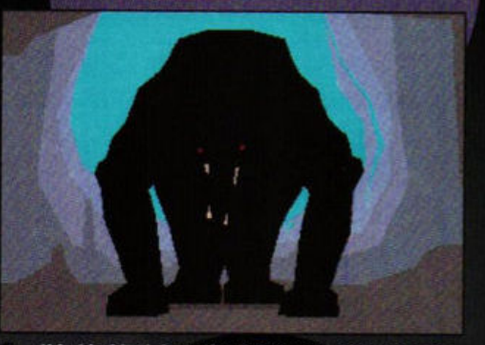
Now you begin to realise what sort of game you've got yourself into. You've just sat through an intro with →

IF YOU SEE THE HILLS, RUN IN THE OPPOSITE DIRECTION!

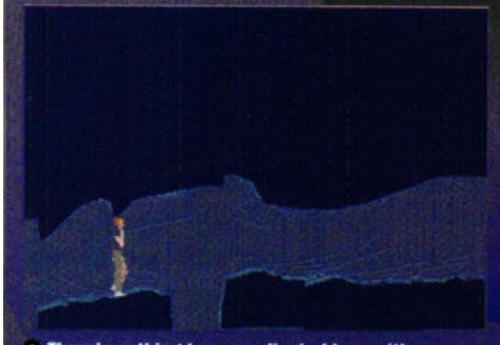
3 ...where more of the leechettes attempt to get you. Kick, kick, kick. Do the Leechy Shuffle. Jump up and down on them. And then go right again.



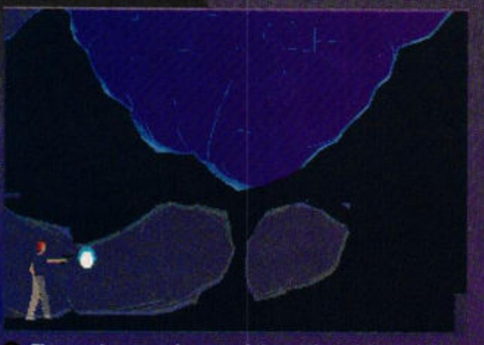
4 But be careful here. Enter the screen slowly, because you're about to be confronted by...



5 ...this big black beastie. Remember seeing him in the background in the first scene? Now, here's your chance to... run away! Run back the way you came as fast as your little legs can carry you. He can run faster than you, but he takes a tumble halfway.



4 There's nothing too complicated here either. Merely one very easily jumpable pit.



5 The next screen is more interesting. A huge lake of water wibbling precariously above your head and supported by that flimsy layer of rock. Blow it up, then run like hell as the water bursts out and follows you very, very quickly.

6 Jump the gaps on the way back and keep going until you reach the rock screen, or you'll be drowned. You have to be bloody quick and bloody nimble, and when you fail miserably time and time again, you'll be so overwhelmed in sheer frustration you'll threaten to tear the monitor apart with your bare hands and eat it. Really.

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some of the best effects you've ever seen, you have the barest idea of how to move Les, and you're stranded on the edge of a pool on another planet with the cries of strange birds off in the distance. Panic!

Another World is a graphic adventure in the truest sense. Everything is conveyed visually: there's no typing and no on-screen text. Les is controlled with the joystick and has a limited but useful range of movements – walking, running, crouching, firing (eventually) and, of course, dying.

From the moment you emerge from the pool, you're on your own. It's up to you to explore the environment, try out objects, shoot things, fall down chasms and find out what the hell is going on, with the overall aim of trying to escape from wherever it is you are without being frazzled. Assuming you survive the first few screens, you soon find yourself in a city. Deep within a city, in fact, incarcerated in a cage guarded by a heavy with a big gun. From then on in, it's all hard work.

It's up to you to explore the environment, try out objects, shoot things, fall down chasms and find out what the hell is going on without being frazzled

There's a lot of dying to be done. You can't walk two steps without being crushed, shot, spiked, bitten, pummelled or drowned, which is why you should guard the level codes you gain with your life. As you play the game and complete certain sections, new codes appear (when you die), enabling you to start at that section again next time. They're a godsend, but also a pain when you *know* you only have to complete one more screen to get a new code, but you can't quite make it.

Another World uses polygon animation. In other words, instead of the backgrounds and the characters being hand-drawn, they're made up of polygons. This has the disadvantage of making everything look slightly blocky, but the advantages far outweigh this. The animations are very smooth because individual frames don't have to be drawn for each movement and disk accessing is reduced – there's hardly any. This is because polygons can be stored as coordinate pairs instead of as lines of data – as is usually the case. Occasionally, when you manage to complete a particularly important section, you're treated to a short full screen animation which unfolds the story a bit further. These animations are designed to look like film sequences and they really do add a touch of class to the game. There are little touches, too, that you only notice when you have played a sequence two or three times – things like speed blurs and extra sound effects.

A game with such effective graphics demands decent sound effects and, because this is a French game, this is just what you get. Samples are used throughout – big, blasting samples too: crashing sound effects and atmospheric music. The sound is also synchronized perfectly with the action, which sounds like a minor point but coordination is often missing from similar games, resulting in an irritating loss of atmosphere.

VERDICT: *Another World* combines the excitement and mystery of *Monkey Island* with the gloss and flair of *Operation Stealth*. Some of the animation sequences are truly astounding, not just technically but because of the way they're seamlessly integrated into the gameplay. A lot of time and effort has obviously gone into making the game look and flow like a film.

Paradoxically, the game's too easy because it's very hard. Certain sections make you swear until you're blue in the face and demand ten or even 20 attempts for you to begin to figure out what to do, let alone consider completing them. But it's the very fact that you know you can do it, and you know that whatever comes next will be even better, that keeps you at it. As a consequence, you're furiously obsessed by the game for a week or so until you complete it – and then that's it. There's absolutely no incentive to play it again, because nothing will be different and it would be a chore rather than fun.

But what a time you have when you are playing. *Another World* is an experience not to be missed. If you care at all about intriguing gameplay, fabulous graphics and even better sound effects, there's no better place to find them than on *Another World*.

ED RICKETTS

ANOTHER WORLD

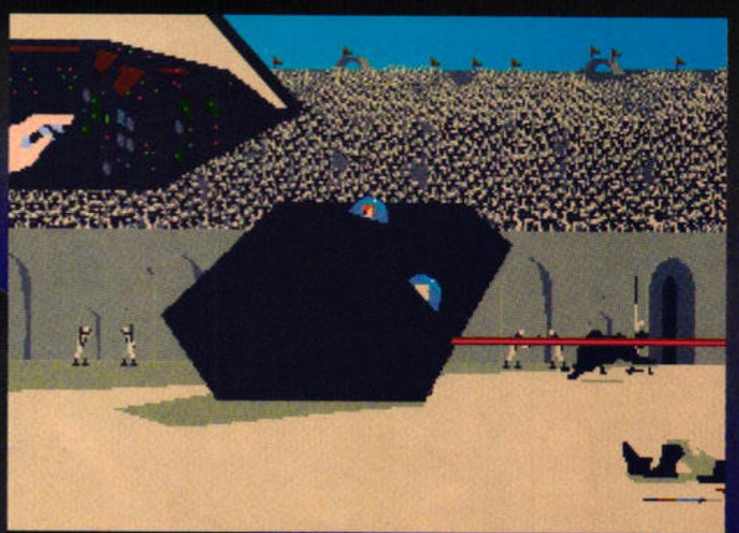
US GOLD – £29.99

Hard drive installable

- Another step up from *Operation Stealth* in terms of graphics and effects, but possibly not in gameplay. It's great for playing once, but...
- Much, much better than the annoying *Cruise for a Corpse*. *Another World* is annoying too, but in a make-you-play-again way.
- Magnificent sound effects in the best tradition of French games like *Maupiti Island* and *Captain Blood*.

STF RATING 93 %

1. REMOVE ALL PACKAGING
2. PANIC



● Help! Press all the buttons you can see. Bet you wish you hadn't skimmed over the instruction manual now. Just what the hell is going on, anyway?

Things whack along at a fair rate in the last stages of the game, giving it even more of the feel of a film. In one scene, you find yourself at the wheel – all right, buttons – of a large black vehicle.

● Well, officer, it's like this. There was this machine... and I pressed a button... and away I went through the air... and now I'm here, I may as well look around.

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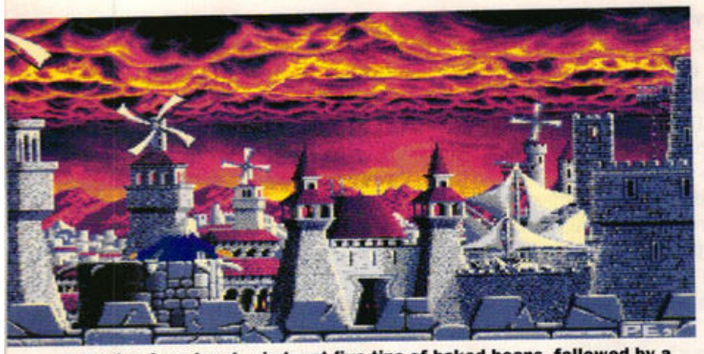

STORM MASTER

Just to prove the fact that lovely big treasures come in discreet and polite packaging, Andy Hutchinson meets the Storm Master and asks, "Now, what on earth do you mean, Gusty?"

● **Recipe for a harsh wind: eat five tins of baked beans, followed by a kebab and then drink Guiness all night. Finally, for that special touch, stand at the top of a big tower, wake up the neighbours and let rip.**

Apologies, but *Storm Master* sounds like the name of an episode of *He-Man™*, or perhaps *Dungeons and Dragons™*. However, in keeping with laws on literalness, this game is, in fact, about a chap who's jolly good at whistling up the odd hurricane. Now, rather than becoming a pathetic show-off at parties ("Have you seen my hurricane trick?"), this enterprising bloke hires himself out to a nation and does his wind tricks to help invading squadrons on their way. All of which cunningly disguises the fact that this is, in fact, another god-game™.

The plot goes something like this. There are two islands called Eolia (sounds a bit rude) and Sharkaania. These two islands have been at war with each other for absolutely ages and there's no sign of a let up. You are the ruler of Eolia and your job – do say if you've already heard all this – is to completely destroy Sharkaania in the hope that it has better beaches than you. Everything's controlled by the nine (?!) members of the Council of Seven: the Adviser, the Ecclesiast, the Master Miller, the High Constable, the Joker, the Leonardo, the Scribe, the Inquisitor and the Commander. These dudes enable you to influence events on the island and build an armada suitable for trampling on neighbouring countries. Thus, to perform an action you simply click on the appropriate dude and the necessary icons magically appear. Of course, while you're rustling up an army, the Sharkaanians are doing their own plotting. Every now and then they launch an attack on you or murder one of your officials. The answer's to rustle up some troops and get your own back. This isn't as easy as it sounds because you've actually got to design, build and test your war vehicles first.

This section of the game is great fun. You're presented with a rough blueprint for four different kinds of aircraft. The idea is to bolt things like sails, propellers and catapults onto

ROGERS OF ALL TRADES?

1 The Adviser. Ugly he might be, but if you want some general information, he's your man.

2 The Ecclesiast is a fully paid up member of the god-squad. He looks after the spiritual state of the nation and can build temples, predicts winds and refertilize lands. Oh yes – and he dances jolly well too.

3 The Master Miller is a farmer. He breeds Broomfs (don't ask), Sqiiz and wheat. A nation's got to eat, you know.

4 The High Constable. This cheery chappy taxes people and runs the stock exchange.

5 The Joker. He makes fart noises by putting his hand under his armpit, does a great impersonation of Cilla Black, wears a comedy bust and generally entertains the masses.

6 The Leonardo. If you want a few war machines built, then he's your man. Design, testing and building are all part of his job description.

7 The Scribe. Apart from his usual role of scribbling and scribing an awful lot, he also enables you to save the game.

8 The Inquisitor. Sort of spy master general. If you want someone snuffing out or need a bit of information, he's your best bet.

9 The Commander. Eolia's very own field marshall can build airfields, enlist soldiers and wage campaigns against Sharkaania.

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● **"My dear Cynthia, I'm sorry but if you like Phillip Schofield in *Joseph* that much, you can have him. Keep my Diesel cars Trump cards and remember me. Squiffy."**

● **The auctioneer wonders why nobody fancies any Sqiiz honey. If you don't watch it, the next thing you know he'll be trying to flog you a cart load of bison poo!**

them, kit them out with a crew and then see if the thing flies. More often than not you see your wonderful war machine bounce once off the ground and explode in a ball of flames, but get it right and you can commission a number of them for use in attacks.

Successful campaigns are quite tricky. For starters, you've got to have managed the economy competently so you've got the necessary resources to throw behind your lads. It's also wise to make sure you've got enough treasure to support the venture and enough trained up soldiers to actually do the dirty work.

Make the trip abroad and you can start bombing and raiding Sharkaania. Your squadron of flying craft – they're definitely not aeroplanes – can anchor anywhere and bomb the surrounding area to oblivion. Obviously, the more aircraft you have, the quicker you destroy something. Hang around too long and you're attacked yourself.

A 3D action sequence kicks off here, though if you're purely into strategy, you can turn this bit off at the start of the game. The idea of this section is to shoot down the other chaps. At your disposal you have a catapult – which isn't terribly accurate but is very powerful – and wodges of arrows, which you can fire in six directions. Shoot down all the enemies and you can either carry on bombing or head for home and a slap up lunch in Mrs Bandeleroes' Victual Saloon.

VERDICT: *Storm Master* is a lot of fun. The French programming team have created a weird but very atmospheric game which all hangs together brilliantly. It's a god-game, sure, but Silmarils have brought a whole new aspect to the genre.

Graphically, *Storm Master* is sumptuous. The programmers have plumped for a "Lewis Carroll meets Jules Vernes" feel and they carry it off well. In fact, the final screen is about as close to a renaissance painting as you get on your ST.

● **As you can see, you can plump for an easy era. All the hard building work has been done. No time for a trip to the beach though, the citizens are getting lazy. Instead of a clown to motivate them, how about a newspaper bingo game?**

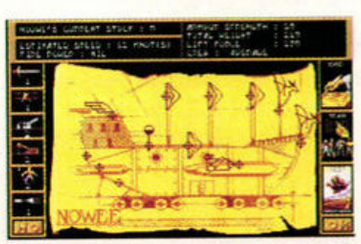
The screen you see the most of is the main map screen. This has a cartoon feel to it. It scrolls around to reveal the entire playing area, though unlike other god-games, you can't see what your population is actually up to – you simply see where there are cities, crops, airfields or the Storm Master. On the static screens, the aircraft look like Viking warships with wheels and wings, while the soldiers give you the impression that they have wandered off the set of *Chitty Chitty Bang Bang*. The action sections work well together, with all sorts of odd looking flying machines looming down out of the sky to take a pot shot at you.

The vast majority of sound effects are sampled. In fact, in the ceremony section of the game, in which you're trying to whistle up a wind, there are about 15 different sound effects ranging from the sound of animals being hacked up to a chorus of heavenly chaps and chapesses.

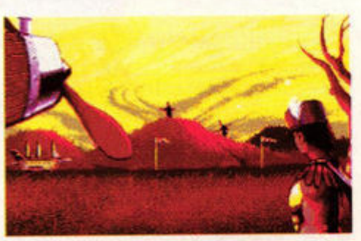
For a game which doesn't look initially like it really has much to offer, *Storm Master* is a stonker. This isn't the most detailed simulation that you're going to come across, but it's extremely easy to get into and could certainly hold your attention for a few months. However, if there had to be just one simple reason why you should buy this game, it's got to be because of the ceremony in which you have to conduct the faithful in raising a massive wind.

Storm Master has some tough competition since the market has recently been flooded by god-games. However, compared to some of the dross software houses have wheeled out over the past few months, this is a smashing game. It's moody and richly coloured – oh yes, and it's French, although that's not necessarily a point in its favour.

ANDY HUTCHINSON



● **All right, so it's called Nowee – what would you call it? The design's in place, all that's left to do is test the old crate. If it manages to leave the ground we can think about finding someone stupid enough to fly it. Wonder if Gary Numan's in need of work?**



● **"Indeed sir. This Nowee comes fully kitted out with a ballroom, a skating rink, two coffee bars and a Norwegian called Mole. We do recommend you go for the GTi version though, which is 30kph faster and has a very fetching golf design on the starboard bow.**

STORM MASTER

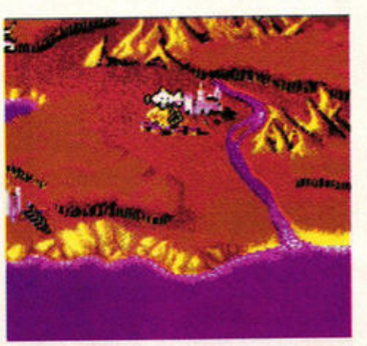
SILMARILS – £29.99

- It's equally cheeky, smart and weird, if you hunger for more *Whirlybirds*, you'll love this game.
- Graphically and aurally it's groovy. Loads of time has been spent on getting things just right.
- Plenty of interesting storylines to pursue, four skill levels, a drop of humour, but still a tad lacking in the longevity stakes.

STF RATING 84 %

● **You certainly get plenty of space to build an airfield. Here, the commander is being shown around a collection of sites by an Eolian estate agent – he drives a 1988 Golf GTi and has a best friend called Norman who's one of the four horsemen.**

● **About three o'clock on a Tuesday, I generally wander into the middle of a swampy area, hold my wand aloft and chant "We are anchor cows, we chew the cuds and browse."**



● **Nothing like a few thousand tonnes of shrapnel to bring a town round to your way of thinking. These chaps have been holding on for a month though. Maybe I should try dropping a few Motormouth annuals down on them.**

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DISCIPLES OF STEEL

● **The ancient Wizard shows you a miraculous vision of some people climbing a hill in this atmospheric fantasy adventure, *Disciples of Steel*.**

For over 1,000 years, the people of Lananthor feared to leave their citadels knowing if they did, they'd be assaulted from all sides by fantasy software.

No, actually, a terrible evil has been stalking the land. Only your trusty band of heroes can save the day. But first they've got to find this evil – and it's damned elusive.

Thus the kingdom lies before you – as does a massive *Dungeons And Dragons* adventure. It's complex, detailed and all but impenetrable unless you've previously experienced this type of game. If you have, you're likely to find *Disciples Of Steel* very slick (it's all mouse-driven) and very atmospheric.

As well as the major evil-defeating business, there are dozens of villages, inns, forts and castles to call at, plus hundreds of lesser characters wandering around. These can either be talked to or killed. Some help you and others make a fine stew. It's up to you.

Indeed, the key to *Disciples* is its atmosphere and detail. Every time you play, small differences are added to make the game totally new. Looking after your characters – you can control more than half a dozen – is your prime concern, which is a bit boring, but there is plenty of combat, loads of spell-casting and the odd special weapon to find.

All this means is that the game is unashamedly aimed at those whose imaginations live in the twilight world of deep dungeons, torch-lit corridors and strange shops in Manchester. The manual helps considerably. It's evocative of the quest, but gives you a pretty good grounding in how to play as well. If you're au fait with AD&D, you should have no problem.

Time is the other factor. It takes an epoch to finish *Disciples Of Steel*, and an infinity to discover all there is to see. You can decide whether this is a plus or minus point.

VERDICT: *Disciples Of Steel* presents a completely invented world, but one you might have seen in hundreds of other games, books or films. Dwarfs and elves are pretty old hat – new place names don't really make that much difference.

If you are interested in beating a bit of evil now and then, you may find the game has good graphics, quick responses and updates and plenty of fool-proofing. It's also very well thought-out, with obvious care going into its manufacture. Boring text is cut to a minimum, so there's always something interesting to look at on-screen, and the fantasy mood is captured well. It's certainly well above average for the genre, and rewards you for the effort you need to put in to get to grips with it.

JAMES LEACH

● **Young and single, his interests are classic cars, cooking and clubbing (usually the skulls of wayfarers and small burrowing mammals).**

● **Now he'd make a fine pair of shoes, with matching wallet, handbag and accessories. Daggers out, fellas.**

● **Fingers the Thief has the mighty "blue box of protection" to protect him from the dreaded mouse-pointers of Thringg (the fiercest creatures for yards around).**

DISCIPLES OF STEEL

MEGASOFT – £28.99

● Quality fantasy bash with much more depth than the *Gauntlet* series.

● Only two disks, so very little dreadful swapping and munging.

● Generally not as exciting as *Dungeon Master*, but with a similar underground section.

STF RATING 79%

GOLDEN EAGLE

The *Golden Eagle* returns. Did you know it ever went away? The original *Golden Eagle* game was a big hit on certain 8-bits a while back, and now those trickily-named French persons have revived the concept in a bigger and better sequel.

Actually there's not much to the "concept" at all. There's some nonsense about future zombies, slaves, broken eagles and suchlike, but what it boils down to in the end is a platform game – a futuristic one.

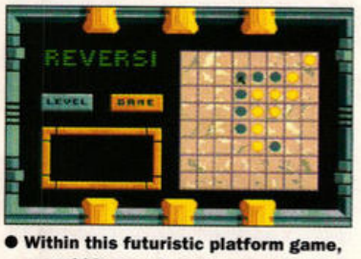
Crawling, running and boinging around a large space base, your job is to find the four bits of the aureate flapper. You've got a laser gun, natch, with which to dispatch the guards around the base, and the usual range of manoeuvres to outwit them.

Along the way you find information posts which enable you to access – er, information. You can check up on the things you've learnt so far, see information on the other characters you might encounter and even have an enjoyably unrelaxing game of *Reversi*.

All the character graphics in the game have been digitised from videos of the genuine article, resulting in some well smooth and convincing sequences. Sadly, though, the background graphics aren't anything special. The sound effects are goodish but not up to the usual standard of a French game.

VERDICT: *Golden Eagle* is a good old-fashioned platform game with a few extra bits – like the information posts – bolted on to ease the tedium. They don't work all that well though, because you soon get bored of the same old scenery, the same challenges which never stretch beyond timing a move past an energy gate or shooting guards. Still, you can always watch your man falling off a platform with perfect choreography for a while. With games like *Another World* about, there's no reason at all to settle for something second best.

ED RICKETTS



● **Within this futuristic platform game, you could have a go at ye anciente game of *Reversi*, as practised by the High Priests. Flip the circles in a random order and hope your ST is less intelligent than you are. It never works.**

● **They've adopted a liberal, not to say anarchistic, approach to punishment in the future. Instead of locking people in cells, they leave the door open and hope that the man with Jailer written above him deters crims from leaving.**

GOLDEN EAGLE

LORICIEL – £29.99

● Inevitable comparisons abound to *Prince of Persia*, but really the only similarity is in the character movement. *P o P* is the better game – it's better structured and more fun to play.

STF RATING 61%

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HOW TO RECOGNISE DIFFERENT PARTS OF THE BODY

All character movements can be achieved from the individual portrait that always appears on the main game screen. Clicking on various parts of the body (yep, that deserves an oo-er) and then on an object, signals what you want to do with it. When a part of the body is activated like this, all suitable objects in the vicinity flash when you move the cursor over them. This is useful for finding objects in the dark.

SHADOWLANDS

And the Lord said, "Hey, do you really expect me to create the world? I can't see a darned thing in here," and lo, he invented the light switch and a 60 watt bulb to go with it. And indeed verily and forsooth yea, Ed Ricketts ran out of biblical sayings and got on with the review

It's difficult, if not impossible, to reach a certain age without noticing that, when there's no light, it's dark. Said fact, though, seems to have escaped the notice of the legions of RPG writers who have practised their art on the ST over the years.

Admit it. When you were playing that fine game *Dungeon Master* there was always that niggling question at the back of your mind, that annoying enquiry which ruined it for you: "Yes, this is all very well," you thought, "but where's all this light coming from?"

Vex yourself no more, for now there's a game which answers those tricky metaphysical light questions, a game which takes the concept of light very seriously indeed – *Shadowlands*.

The plot is simple enough. Four adventurers, created and controlled by you, wander off into the famed *Shadowlands* in search of fame and fortune. Said lands are, as you might guess from their name, dark. Very. In fact, without a light of some kind you can't see a blessed thing. This might possibly be because most of the land is underground – in a series of dungeons. Fortunately, there are quite a few torches hanging round on the walls. Strange, though: when they're on a wall they never burn out, but as soon as you pick one up they gain a finite lifetime and soon burn down. The brighter the torch (or other light source), the wider the circle of light around you is. This can be important.

Interesting puzzles crop up at every step, involving levers, pressure pads, keys and doors

If you've played *Dungeon Master* you should know what to expect as you toddle around the dungeons. Monsters, starting with fairly harmless skeletons on the first level, are a regular feature, and need beating off (or in) with the weapons you can also find, like sticks, swords and longbows. Interesting puzzles crop up at every step, involving levers, pressure pads, keys and doors. The solving of these puzzles – which might mean going two miles out of your way to find a key to open a door to let you stand on a pressure pad to get the

CROSS MY PALM ETC ETC

At strategic points (that is, the difficult bits), you might need a little extra shove in the right direction. Let's be honest, you need to cheat. Well, as they say, you pays your money and you gets your hint from the plaque that appears on the wall.

● Read yon sign. Just what is it trying to say? It's so darn cryptic. Ah! An artfully-placed pile of silver. Pick the whole lot up (hey, no one else wants it, it's waiting for you!) and wang one in the slot.

● And drape me backwards over a vat of boiling acid, another sign appears. All right, so it's not the most incredibly stunning of revelations, but you get the general idea – plaque isn't always bad for you. (Ahem.)

● Your adventuring heroes begin the game in a wonderfully cheery place called the Field of the Fallen Heroes. But hey! Don't be discouraged just because all these people have died a gruesome death doing exactly what you're just about to attempt? *Shadowlands* – anyone got any batteries, by any remote chance?

● At first you have nothing more difficult to deal with than these skeletons – although even they take a bit of beating when you're only armed with a pointy stick. The big geezers live down in the basement and only come out when you get really cocky and can openly snicker in the much-reduced face of the skeletons.

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WHERE DID ALL THIS STUFF COME FROM?

The other main screen, the characters' inventory. It's all the familiar clicky-draggy stuff that you have probably encountered a hundred (well, four or five) times before.

This character is holding many burnt-out torches. There is a way to revitalise these, but you have to find that yourself. The chests can hold six objects, increasing your carrying capacity, but more objects = heavier weight = slower movement.

The characters' marching order. Clicking and dragging the chess pieces changes their formation, or you can press function keys 1-5 to access five preset formations.

Icons to enable the character to doze off or to eat an object.

The object in the character's right hand. Clicking the scales transfers magic force from the character's store to the object, making him weaker but raising the effectiveness of the object. Weapons do more damage, and spells last longer.

Your merry men. Mould has had his chips, but the others are just about hanging on.

Those stats in full. Pretty self-explanatory, really. Combat and magic levels rise with experience in – well, combat and magic. Keep an eye on food, water and force – the last one's the most important.

gold to make up exactly the right weight to activate another pressure pad to enable you to go through to the next level (pause for breath) – are the core of the game. The light is important, not just because it enables you to see, but because it also sets off many other events. Artfully placed light receptors can suddenly make sense of an insoluble puzzle when the flickering rays of your torch fall upon a receptor and a pit opens up in the floor.

Many of the monsters just love a nice bit of light and come charging towards you whenever they see it. Of course, the opposite might be true – if that door keeps closing whenever you come near it with a torch, drop the damn thing and do it in the dark.

There's magic about, too, and for the fully-trained magician (only possible through experience, of course) there are some useful, not to say indispensable, spells to be had. The most basic and most useful of these, of course, being Light. Later on, you find the usual combat and healing spells and other more exotic brews for those specialised situations.

From the fleeting glimpse of the wooded glade you get before you enter the dungeon, you may think the graphics are all pretty-pretty. Not so. Dim and dark is the order of the day, though the style of the graphics changes with the level. There are "themed" levels, like the Egyptian one, with its corresponding mummies as monsters and impenetrable hieroglyphics. For a game with so much darkness, there's a lot of detail to the background graphics. However, it would be good if the characters moved more smoothly and with a few more animation frames. They look a little indistinct at times, even in full torchlight. As ever, the pathetically feeble sound effects try to break their puny way through the ST's magnificent sound hardware, but fail halfway and emerge as faint squeaks here and there – not impressive in the least.

Monsters just love a nice bit of light and come charging towards you whenever they see it

VERDICT: Play *Shadowlands* and you realise you never knew the dark could be so much fun. (Actually, having said that...) Without the light/dark business, it would just be an unashamed clone of *Dungeon Master* in 3D. But by building in the effects of the most natural thing in the world, it's transformed into a completely novel style of game – one which forces you to take everything extremely slowly and carefully for fear of setting off something hideous just by being there.

Unfortunately that's also one of the few criticisms that could be levelled at the game. It is very slow – there's a lot of plodding about to be done because you need to explore every square inch of dungeon if you're to find all the objects. And with three different vital stats to watch on each character, you often need to stop and revitalise them just to be able to continue plodding. The constant worry of whether your characters are about to pop their clogs slows everything down even more and detracts from the serious business of problem solving. Regular saving is absolutely essential.

But there's so much in the game. Dean Lester of programming team Teque London has delighted in devising incredibly sadistic and mind-mangling puzzles for the later levels, and anyone who works their way with ease through the first two or three placid levels with a smug grin plastered to their chops has a very pleasant nasty surprise waiting for him.

Shadowlands is not a game for those who like their action hot'n'sizzling, and it's not a game for strategy freaks. It definitely is a game for those who like good, solid gameplay, frustrating but fair puzzles and all the chunky darkness you can eat without getting a nasty bout of hiccups.

ED RICKETTS

SHADOWLANDS

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- More like *Dungeon Master* than *Dungeon Master*, or even *Knightmare*.
- Murky graphics that won't make you scream in delight – no *Immortal* effects here.
- So much gameplay crammed in you can almost see it oozing from the monitor. More to do than in *Shadow Sorceror*, or a dirty weekend in Ibiza.

STF RATING 84%

● Ye patente character creation screen which is nothing at all like the ones in *Flames of Freedom* or *Populous 2*. Honest. Mix'n'match the facial bits, flip the card to change the statistics as you will and type in ye olde name like Kevin or Sharon. (Who said successful adventurers are always male?) Eugenically speaking, it's the only way to do it.

● Magic is cast by holding the spell scroll and activating the left hand. Then you choose a victim – or one of your characters, if it's a good spell – and click the mouse button. In the case of the Light spell, for example, light radiates brilliantly from the chosen person for a length of time dependent on the strength of the spell.

IT IS, INDEED, THE PITS

Light receptors can be a gift from God or a pain in the bottom. To wit...

● There you are, strolling down the dark avenue feeling mellow and minding your own business when something suddenly makes you snap out of that calm mood and decide it might be an excellent idea to light up using that Light spell you found. Cast away and...

● ...the light hits that black thing on the wall, which is now revealed to be nothing less than a light receptor. And what does it do but open up three pits on the floor? They could have caused a very nasty accident if the rest of your party had been with you. Oughtn't be allowed.

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RESOLUTION 101

● **The police chief isn't too happy, possibly because someone seems to have stapled his hands to his chair. If that isn't bad enough *Baywatch* has just started on his telly. What torture.**

● **Corner the drug runners in a corner of this all-action 3D romp and ruthlessly use harsh language at them. They get so sick of you they spontaneously combust.**

● **Just as you destroy one of the drug baron's henchman and he drops a canister, the baron himself (they're always barons, aren't they? Never emperors or rajahs) is heartily sick in order to try and put you off...**

It's the future, again. And it's not nice, again. Drug runners are – well, running their drugs openly in the street. The police in their wisdom decide it might be a good idea to use people that no one would miss much – ex-criminals – to chase after them.

You, of course, are one of these criminals. And you've got a big whizzy hovercar to race around in, replete with a laser to blast the hell out of the crims. On each level of *Resolution 101*, your major target is one important drug runner who swans about in a huge orange souped-up hoverthing and stops off at various buildings to do his stuff. He has assorted henchmen and bodyguards to protect him, who don't hesitate to fire at you. These are your first targets. When shot, they drop drugs canisters. You need to collect a certain number of these – on the first level, it's ten – before you can go after Mr Big (as he's affectionately known).

The landscape is viewed in 3D and scrolls around at a scare-making rate. Buildings are the main, not to say overwhelming, feature of the world, though there are rivers, trees and suchlike occasionally too – together with the other ships, of course. The display is fast, to say the least, but the techniques used to achieve this mean some of the enemies appear squashed and very bitmapped close up. Sound effects and music are passable – that is, you want to pass them right by.

VERDICT: For £8, this is a snip. Not so long ago it was being hailed as a megagame in certain quarters. Unfortunately, though, not in the public one – nobody bought it. Nevertheless it's great for a manic high-speed blast. If you're sick of playing simple platform games on budget, try this. Soon you'll be sick of this too. But then what do you expect for that price?

ED RICKETTS

RESOLUTION 101

GBH – £7.99

● Definitely faster graphics than *Encounter* and the gameplay's far more interesting.

STF RATING 76 %

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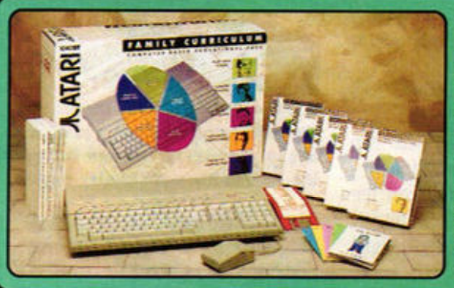

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FOUR WHEEL DRIVE

Four of Gremlin Graphics' biggest driving games have been put together in one box just so you can get really good at mastering those tight bends without breaking your neck in the driving rain. Is there anything else that armchair racing fans could possibly ask for?

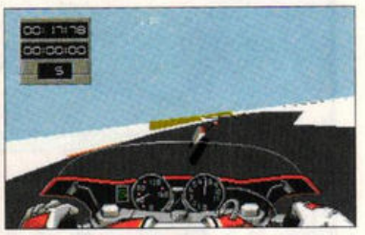
LOTUS ESPRIT TURBO CHALLENGE: This game finally set Gremlin Graphics up as the "driving game experts." *Lotus* gives you the chance to belt around various European circuits pitted against 19 other *Lotus Esprit* drivers, who aren't slow in jostling, weaving and other rustic crafts.

The thing that makes *Lotus* different to other 3D driving games is its smoothness and control. It feels as close to driving a car as you can get on an ST. The acceleration, cornering and other driving-related things are satisfyingly realistic, and the air of excitement as you try to overtake the other cars is palpable.

The game runs along the lines of a Formula One type points system. To advance to the next race you must come sixth or better, thus gaining some points. Things start off pretty simply, with easy tracks and slow co-racers. But, as you progress through the circuits, obstacles start appearing, hills crop up and your opponents get increasingly rude and pushy. The two player mode is the most fun, though – seeing your chum's car career off the track after you squeeze past is hugely amusing – as is surreptitiously unplugging his joystick.

TEAM SUZUKI: If motorbikes scare you silly, *Team Suzuki* isn't going to help any. It's a "total hands-on riding experience" in which you must bank your perilous way around some remarkably dangerous circuits in various exotic locations.

You start by choosing which level of bike you're happy with – none of them are easy. The game pivots on whether you can learn to bank properly when going round corners. Unlike a car, you don't steer as such, but lean over and hope that's enough.



● If I can just overtake the thin guy on the existential motorbike just up ahead, I'm well on the way to winning the Golden Knee-pin Championship.

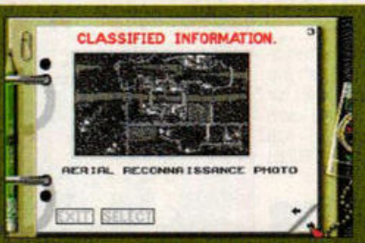
You have a real rider's eye view of the races, with the gauges and dials occupying the bottom section of the screen and the hard object with which you're about to collide filling the top section. Once you've had a practice, you can race against the pack. These guys are very good indeed – they go round the bends like they're on rails. But it's possible to hammer past them

● Time for some serious repair work under the track in *Lotus Esprit Turbo Challenge* – the best of the four racing games in this excellent compliation.

LOCK, LOAD AND – AND – ER, LIMBO?

Warning: whatever yopu do, do not attempt to win your war without prior preparation. Consult your doctor before embarking on any campaign, and ensure you have a pair of sensible walking shoes and a waterproof mac handy.

● Select your difficulty level. Play against an enemy culled from the local chapter of the Young Christians armed with small peeling knives, or a group of subhumans carrying Sten guns who were rejected by the Mafia because they were "too boisterous."



● Put in a request in triplicate for the secretary to the personal assistant of the amanuensis of the Minister of War to fax a command to the State Secretary for Stuff to let you know what filing cabinet the details of your mission are in.

● Carefully study the territory you're going to liberate. Note well the areas of high enemy concentration. Find the gun nests and the snipers. Mark out the sites you're supposed to hit. Choose a pleasant and scenic spot for your headstone.

SPECIAL FORCES

● What are you going to do this weekend? Not joining the TA, that's for bloody sure. Yomping about on some moor pretending the Illyrians have invaded Peckham, and swapping yarns about how you could have been in Vietnam – pah! Stay at home and play *Special Forces* instead. (TA people please note: address all complaints to The Editor, *ST FORMAT.*)

War is hell, apparently. But not for software houses – they love it. It provides an endless source of inspiration for various shoot-first-don't-bother-with-the-questions-at-all games – perfect for all those TA-type armchair commandos who play at war at the weekends.

Special Forces is one of those games, featuring four butch characters known only as Shark, Cobra, Tiger and Eagle. (Iguana apparently couldn't make

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on the straights. Thus a true nail-biting competition is born.

COMBO RACER: It's a cross between *Lotus Challenge* and *Team Suzuki*. The circuits look rather like those of *Lotus*, and because it's a sort of motorcycle and sidecar affair, you don't have to worry about banking round corners. As

● **Perfect place to stop and indulge in a bit of the old break-dancing, what? Head-spinning's a doddle with helmets!**

you belt around, it becomes clear that you need every inch of the road to beat the other riders. The bikes are pretty wide relative to the road, and slide around with scant regard to the well-being of those on them.

The handy circuit map shows your current position, the other racers and, best of all, what exciting bends and straights you can hope to encounter in the next few terrifying seconds.

TOYOTA CELICA GT RALLY: Once again, it's the attack of the tortuous 3D circuits. This time you're in a Celica rally car with four wheel drive, loads of power, electric windows and reclining ashtrays. You must set about the muddy task of beating the famous names across a series of courses ranging from simple stages in broad daylight to twisty lanes in the pouring rain.

The steering system is totally different to that of, say, *Lotus Challenge*. Instead of pointing the nose of the car in the direction you want to travel, you must learn the subtle art of going everywhere sideways. It is best to stay on the road, but you can nip across country whenever you feel like it. The only stipulation made by the game is that you don't crash into any obstacles.

There's no dual-play option, but your ST does furnish you with a programmable co-driver who calmly warns you of the corners ahead. Because he's a droid, he feels no fear, and continues his job stolidly as you tear through the toilets of a Little Chef at 130 mph, screaming as you do so.

Like real rally-driving, you don't race other cars directly – it's all timed. So you've got nobody to follow. This makes the game tougher and more fun. Somebody at Gremlin has done their homework because they've eliminated that "flat-out-all-the-way" phenomenon that dogs so many racing games. If you go too quickly in *Celica*, you crash and die. This doctrine takes some getting used to. You have a choice of manual gears and an auto-centring steering wheel, so things are made simpler, but if you want to do it properly, you disable these (and yourself, eventually).

VERDICT: Each game in this compilation is good in its own right, and together they make a stunning collection. Just about the only racing game that's better than *Turbo Challenge* is *Turbo Challenge 2* – it's got impressive graphics, good sound effects and bags of gameplay. *Combo* is similar to *Lotus* with addictive playability and the added attraction of particularly well executed crashes. *Team Suzuki* is exciting once you've mastered the quirky motorbike handling. Finally, *Celica* is brilliantly playable and gives you the opportunity to get on with driving a dangerous car along stupid roads in ridiculous conditions. And really, that's all you could ever want from a racing game.

JAMES LEACH

FOUR WHEEL DRIVE

GREMLIN GRAPHICS
£29.99

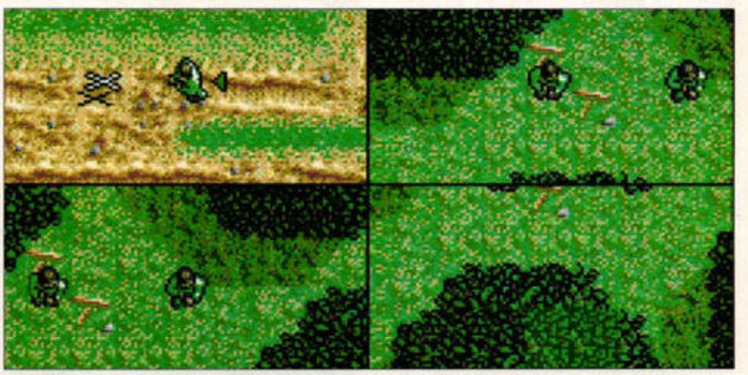
- Overall, a superb collection of games.
- Best is definitely *Lotus Esprit*.
- *Celica* and *Suzuki* are both excellent. Poorest is *Combo Racer*.
- If you are desirous of several driving games, buy this compilation.

STF RATING 81 %

● **Look! There's that old deserted smuggling cottage! And there's some sort of flickering light in the window. Who could that be, on this cold and wintry night? Timmy - you inform the Authorities, and I'll try and qualify in this exciting rally.**

● **Sort out your squad and assign them codenames. Or, alternatively, play musical soldiers: assign each man a note and hum it at the exact moment you click on him and he stands up. Try recreating the 1812 Overture.**

● **Choose your weapons. Opt for the hand-picked individual choice or go for the bulk-buy-the-ST-recommends family pack (perfect for every combat occasion). Try to leave each man some energy to walk – and preferably breathe – with. Then get out there and – well, die.**



● **Get really confused and watch all four of your "units" at once. At least this way you can see just when one of them is getting into trouble and act accordingly (that is, press every button you can see to get him back under control).**

it.) These desperate characters embark on a series of dangerous missions into unknown territory to restore order and keep the [insert nation here] way of life. Missions can range from rescuing a POW to blowing up an arms store, to marking various sites for a later air strike. Your chappies are chosen from a group of eight, each of whom has special training in an area like sniping or explosives. The people you choose for each mission should vary depending on its objectives.

How you carry out the mission is up to you. Your men can be controlled in a group or individually. So, if your job is to blow up an arms store, say, you could create a diversion in one corner of the map with two men by destroying a bridge, and send the other two off on the real mission. Each mission begins and ends at specified drop points, and it's only in these areas that you can successfully be picked up by the chopper (oo very er) to end a mission.

Special Forces' graphics definitely grow on you. At first, they seem flat and *Gauntlet* like, but, as you scroll about, you notice the little details, like everything having a shadow – there are even individual flowers on the ground. Sadly, the sound is predictably average – white noise and blips, you know the sort of thing. There's a great intro, too.

VERDICT: Microprose say *Special Forces* is aimed at a younger market than their other games, so it's not quite so complicated. For all that, there's still a fair bit to get used to before you can begin to put your game strategies into play, and a lot of "hidden" gameplay to discover once you find your feet (they're on mission three). It's not particularly easy either, and with 16 increasingly difficult missions to tackle, you shouldn't get bored for a while.

Unfortunately the manual isn't really up to explaining the complexities of the game, because it presents the game as a series of sections rather than as a coherent whole. As a result you find yourself flicking about among its pages desperately trying to see what F2 does.

While not up to the likes of *Microprose Golf* or *Railroad Tycoon*, *Special Forces* has a lot going for it. It manages to combine strategy and shooting in equal measures as well as make both fun. War is hell, but then – hey! There are worse things than hell around – look at *Star Trek*, for instance.

ED RICKETTS

SPECIAL FORCES

MICROPROSE – £24.99

- Overhead view might remind you of *Gauntlet* but it's a far cry from the manic blasting of that game.
- Sometimes not unlike a more cerebral version of *Commando*. You'll spend longer playing this though.

STF RATING 73 %

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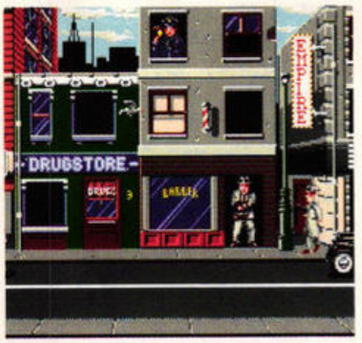
THE ENFORCER



● **Oi! Sonny! Don't point that thing at me! Haven't you lot got homes to go to? I dunno. In *Enforcer*, shooting all and sundry to keep the law's your job.**

It's Chicago in the '30s. Illegality is everywhere and you're an Eastwood clone sent to clean it all up with your trusty light-gun. Forget investigations. Forget "innocent until proven guilty." Forget the law. All you do is stand on a populated street and shoot suspicious looking people (those in long coats, with red hair, crooked smiles and so on). They're mobsters, and as such, they pop up from every window, through every door and in cars.

Making things a tad trickier are blameless civilians who, seemingly oblivious to the bloodbath going on outside their houses, look out and wave at you. Some of these are baddies in disguise – others aren't.

Each level sets you a target score to reach before you die of gunshot wounds or run out of ammo. Killing innocents reduces the score, and wasting bad guys increases it. So you've got some leeway to ice a few passers-by if you're into that sort of thing.

You can pick up extra ammo from some mobsters, and can get bonuses from blasting bent cops – if you can identify them. This format is the same for each level, but there are whisky-bottle shootings in between.

VERDICT: *The Enforcer* is the best of these three light-gun games. It's quick, accurate, carefully drawn and animated. The thrill comes from reacting fast enough to avoid being shot, at the same time as identifying the correct targets. It's actually pretty addictive and satisfying when you get good at it. The sound effects are well done, too.

JAMES LEACH

● **Viciously shoot the gently dropping whisky and gin bottles and do your bit to preserve the cirrhosed livers of the Chicago populace.**

● **Here's a God-given opportunity for you to irreparably damage any vehicles participating in the London to Brighton rally. Can't be bad!**

● **Clint Eastwood is now appearing in Puss In Boots at Sheffield. Al Capone is appearing in concrete boots at St Katherine's Dock.**

THE ENFORCER

TROJAN – £9.99

Needs a Trojan light-gun

● *Operation Wolf* with a light-gun – it's trigger-happy mayhem.

● Levels are a little too samey, but more fun than *Firestar* or *Cyber Assault*.

STF RATING 78 %

CYBER ASSAULT

Imagine a game like *Captive,* but using a light-gun. This is what *Cyber Assault* is like – sort of. The idea is to explore a stranded spaceship, killing any aliens who might be squatting there. Simple.

The view is a sort of 3D square-by-square *Dungeon Master* – or indeed, *Captive* – affair. You use the keyboard to move around, and using the scanner you've got built in to your info-console, you pinpoint the bad guys, burst in on them and start shooting.

Each room has a smattering of nasties ensconced. The trick is to run in, rush to a corner, turn to face them and keep clicking with the light-gun for all you're worth. As well as baddies, there's equipment in the rooms. Lifts, extra weapons, oxygen pods and Hoover attachments all make life easier for the busy spaceman with thousands of aliens to murder.

VERDICT: Killing the aliens is a dirty, time-consuming task, but some light-gun-equipped idiot's got to do it. The trouble is that once you have cleared a few rooms, it gets rather tedious. The game runs at a respectable speed, and the graphics are certainly up to the task, but, as you just shoot everything, there isn't an element of surprise – unless you count being surprised that you've just spent half an hour clicking your light-gun like an imbecile.

How fast you can pull the trigger is a key factor with *Cyber Assault*. This isn't as nature intended – it's the rapid selection of hostile targets among harmless ones which makes using the gun so much fun. Here, there isn't really any of that. It's just too fast and furious – well, considerably angry.

JAMES LEACH

● **Explore and kill. Just like in *Captive*. And watch out for those evil blobs.**

● **"The chances of things coming from Mars are a million to one," he said.**

● **Only the neutrinium underpants of the planet Neutro can save you now.**

CYBER ASSAULT

TROJAN – £24.99

Needs a Trojan light-gun

● The fastest game of the three.

● Exploring the corridors can make it quite suspenseful and there's a slightly spooky atmosphere.

STF RATING 68 %

FIRESTAR

You've joined the galactic motorway police as a patrolman. So now you're stuck on the central reservation of the M9000 with only a small spacecraft and a gun. Your job is to protect all the good ships that pass you by heroically blowing up all the baddies.

You're aided in this endeavour by two things – you've got a radar screen telling you who or what is approaching on both carriageways, and the baddies have conveniently painted their craft bright blue.

Firestar's a little like *Defender* since you scan the radar for any nasties to nuke. You can rotate to face either way and can move up and down the middle – all controlled with the light-gun. So, you roam up and down the middle of the traffic, blasting the blue spaceships and

● **Stop me and buy one. And if you're unhappy with the quality, open fire.**

● **It's the intergalactic equivalent of the corner shop. And it's open until 12.**

● **If only he wouldn't drive round in a spacecraft designed by aliens...** ignoring the orangey ones. It gets more complicated, though, because sometimes your scanner is jammed and sometimes the baddies deliberately and heinously disguise themselves as goodies.

Oh, and you gain credits for all the baddies you manage to kill and can buy better lasers and things after each wave of violence.

VERDICT: *Firestar* is speedy and smooth, and there's plenty of shooting. But the excitement soon palls because every level is pretty much the same as the last – just a bit quicker, and with more radar jamming.

There are no sub-levels and once you've worked out the strategy for killing the aliens, all you can do is keep at it until things get too fast and dangerous for you to cope with and you die. Pretty limited in the long-term.

JAMES LEACH

FIRESTAR

TROJAN – £9.99

Needs a Trojan light-gun

● No suspense or atmosphere at all, unlike *Cyber Assault*.

● Roughly based on *Defender*, and rather repetitive – like *Defender*, actually.

STF RATING 55 %

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SHADOWLANDS™

Shadowlands - a completely new and unique role playing experience.

The story is based upon ancient legend. A warrior prince, slaughtered on the battlefield of the Shadowlands, awakes to find that his spirit lives on and that he can control the minds and actions of his subjects. Seeking retribution, he chooses four loyal adventurers and guides them back into the Shadowlands on a journey of discovery and vengeance.

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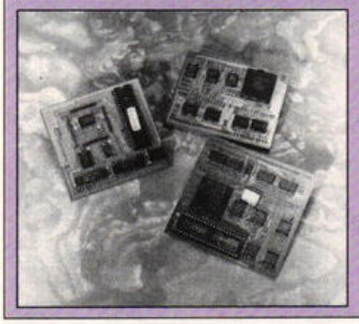

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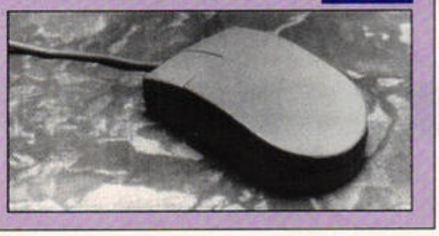

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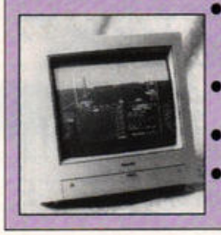

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Strangely, the graphics are better animated and smoother than many other so-called state-of-the-art games, though there aren't too many of them – a bit of ground and you, basically. There's the perky sound to match.

VERDICT: Let's be absolutely honest about this, Loriciel were onto a loser before they even started programming *Paragliding*. Unless you're an ST-owning paragliding freak you're unlikely to be enthralled with the intricacies of air currents, flying duvets and anorak toggles. They've done the best they can within the framework, but it's the framework that's wrong in the first place. Full marks for trying, though.

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FORMAT RATINGS REVIEWED

How did *FORMAT* rate the games reviewed over the last three months?

ANOTHER WORLD	page 90	93%
MERCENARY 3	STF 32	90%
Realms	STF 31	87%
Robocod	STF 31	86%
Magic Fly	STF 31	84%
Storm Master	page 94	84%
Shadowlands	page 98	84%
Deuteros	STF 32	83%
Chart Attack	STF 31	83%
Oh No! More Lemmings	STF 32	82%
Magnetic Scrolls Collection	STF 31	81%
Four Wheel Drive	page 101	81%
Advantage Tennis	STF 32	79%
Suspicious Cargo	STF 31	79%
Disciples of Steel	page 96	79%
The Enforcer	page 106	78%
Turrican	STF 31	77%
The Immortal	STF 32	77%
Knightmare	page 88	77%
Rugby – The World Cup	STF 31	76%
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Barbarian 2	STF 32	74%
Smash TV	STF 31	74%
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Megatwins	STF 32	74%
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Guardians	STF 31	71%
Fighter Command	STF 31	71%
Titanic Blinky	STF 31	69%
Cyber Assault	page 106	68%
Rubicon	STF 32	64%
WWF Wrestling	STF 32	63%
Devious Designs	STF 32	61%
Golden Eagle	page 96	61%
Paragliding	page 109	59%
Manix	page 111	59%
Action Pack	STF 31	56%
Firestar	page 106	55%
Thunderjaws	STF 32	54%
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Steve McQueen Westphaser	STF 32	42%
Booly	STF 31	34%
Escape From Singe's Castle	STF 31	31%

NOTE: Games in red are reviewed in this issue

● ***Manix*** **starts off looking like this until some annoying being on high decides to start chucking bombs onto those attractively arranged tiles. And it's down to Filbert to bounce around energetically to restore order.**

● **Bulbous Bilco and Fat Filbert bounce together in perfect harmony singing *Onward Christian Soldiers* loudly and cheerfully with the aim of keeping their spirits up and minds off the migraine-inducing floor covering.**

MANIX

What's yellow, looks fluffy and bounces but is instantly punctured when it's touched by a needle? A tennis ball? A balloon that's wearing a furry coat? No, it's Fat Filbert, the star of *Manix* whom you play in this bounce-around, memory teasing colour-of-tile-changing game.

Manix consists of 128 "scenes of fun" – arrangements of different coloured tiles set in the midst of an ocean. Or a puddle. It probably doesn't really matter since either way Filbert is pretty allergic to it – instant death is on the cards if you should mistakenly bounce into the water.

You get the chance to look at each scene briefly before bombs drop out of the sky onto the tiles – this changes them from their initial landscape-type shades to a rainbow of different hues. Your task is to change them back to their original colour by bouncing on them. This isn't actually as simple as it sounds since you have to avoid spikes that grow up from the tiles, acid pools that shrivel you to death and irritating ninja balls that also change the colour of tiles and potentially kill you. And that's about it, really.

Filbert doesn't have to play on his own – if you've got a suitably gullible mate, Bulbous Bilco (handily distinguished by the presence of a blue ball on his head) can also join in for the two player mode.

In the standard game, you don't actually have to remember what colour you're aiming for – as you do in the puzzle game – since the colour of the tiles cycles through different shades until the correct colour is reached. When all the tiles have been restored, the screen turns black and white and you can move onto the next scene. Once you've completed each scene in a level, you're given a password which enables you to start the game from later levels and modify particular aspects of the game in the custom kit.

VERDICT: Although the plot might sound simple – as indeed it is making the game immediately accessible – *Manix* does present a challenge. The later scenes and levels are increasingly difficult – and equally, more interesting: there are angled tiles to negotiate, increasing numbers of bonuses to collect and more dangerous objects to avoid. In the end though, the best things about *Manix* are the bold and colourful graphics. It's not going to tax your brain – though it might wear down your joystick waggling hand – and it's highly unlikely to keep you awake all night for "just one more go."

PAULA RICHARDS

● **"Keep *Manix* tidy" by thoughtfully trashing your empty cola cans in the conveniently placed can bin.**

MANIX

GBH – £7.99

- Bright and cheerful graphics and the "bouncy" music are Manix's best features.
- Immediately playable – Manix doesn't need weeks to learn the intracacies of, like *Another World* for instance...
- But this means it's not going to keep you interested for very long.

STF RATING 59 %

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If you've got a 520ST, when you load *Write On* you only have about 100K of free memory. This is fine for most uses but if you intend making serious use of this package, then more memory is going to be helpful. By adding a 0.5MByte memory upgrade you can increase your available memory by five times!

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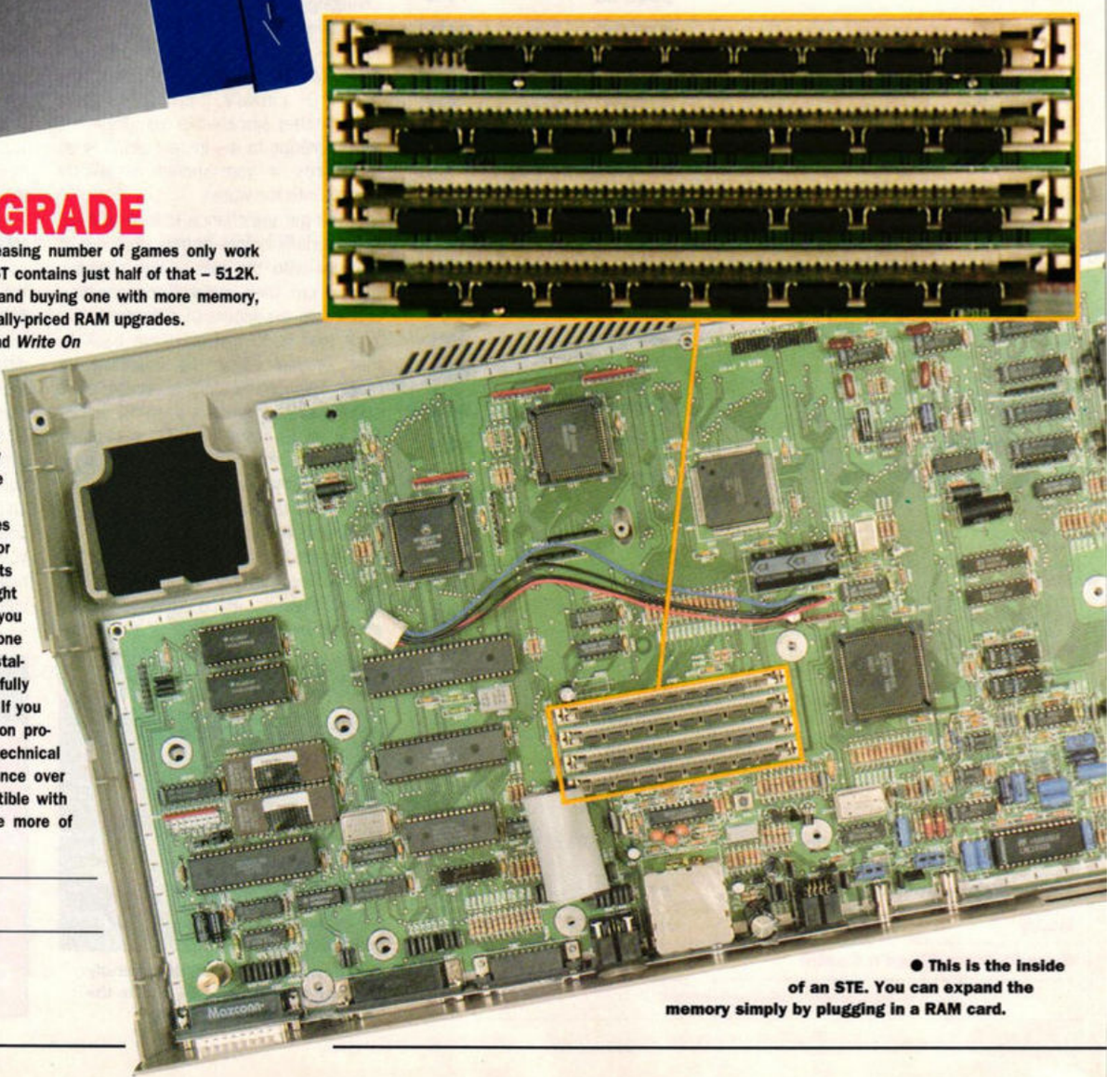

● **This is the inside of an STE. You can expand the memory simply by plugging in a RAM card.**

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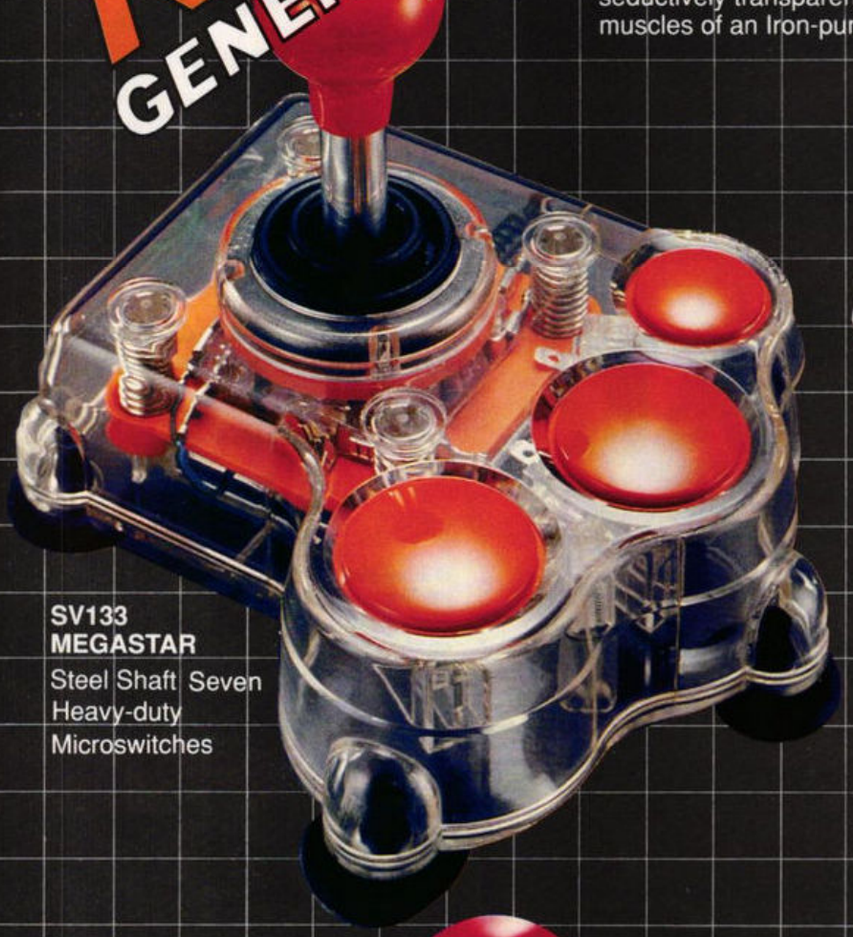

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Fill in the missing words: Gamebusters, a _____ with plenty of _____, carefully put together by an unlikely pair of _____ called Ed ("_____") Ricketts and Chris ("_____-face") Lloyd. The tips are renowned for sometimes being _____, but they're certainly always _____. (What a complete and utter load of _____.)

CRUISE FOR A CORPSE

US Gold

Brush up on those funny accents because **Chris Hilton** from **Sheffield** has given us a heap of cluettes for that mysterious maritime murder, *Cruise for a Corpse*, and nets £50 for being such a smarta – er, clever person.

The first thing to do is to take a brisk sneak around the ship and note where all the people are and examine everything. Cancel all appointments because this takes some time.

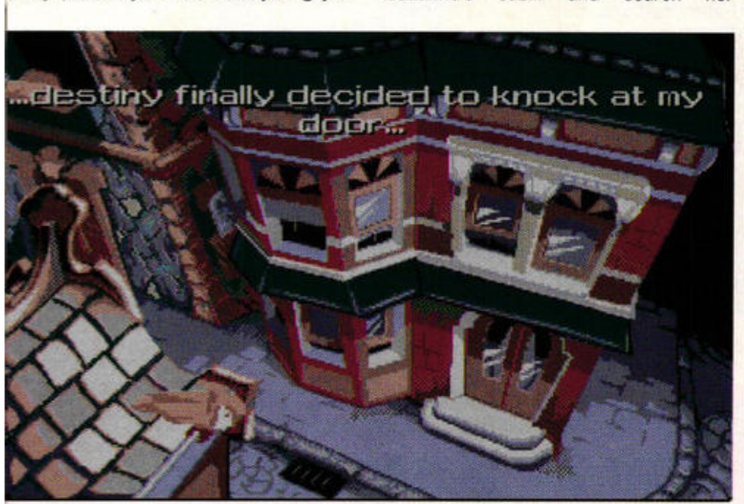
Right, now you're ready to start some serious investigations. Take the piece of paper, smooth it out and read it. Go to the bar and show the note to the barman. He gives you Father Fabiani's mass book. Examine it, take the letter and read it. Go to Fabiani's cabin and examine his suitcase, put it back and then go to the dining room. You automatically give him his mass book and then you should ask him everything. Move around the ship and ask every person you meet everything you can – you may have to do this twice. Go back to the dining room and the priest should have gone. Pick up the paper from the floor and read it – it's a receipt for a diamond bracelet. Go around and speak to everyone again about the bracelet and the receipt. Go back to your room and Julio should have moved on, leaving a key behind. Take it and go back to the study. Unlock the roll-top desk and examine the bracelet and its clasp. Take it and read the note. Ask everyone about the note and the bracelet, then go to the rear hall and talk to Dick about everything you have learned so far. Go to the dining room and open the drawer. Examine and take the wedding invitations. Ask everyone about the invitations. Go and watch Tom and Rebecca kissing on the upper deck – the time should be about 10:50. Interrogate Hector in his room – ask him about everyone and everything. Now make sure you have spoken to everyone about Tom's ambition and his plot with Rebecca.

Find the laundry and search the baskets. You find a bathrobe with a necklace in the pocket. Open the necklace and look at the picture of Agnes. Ask Tom and everyone about the necklace and the picture inside. Go to Suzanne's cabin and search her wardrobe. Take the prescription from her cosmetic case and read it. Ask Dick about Agnes. Go to the bar, take the glass and the bottle of whiskey. Speak to Suzanne and serve her a drink. Ask about the prescription, Agnes and her son. Cue flashback sequence...

Go to Rebecca's cabin and look through the port hole. Go to Daphine's cabin and search the laundry in her wardrobe. Take the envelope and read it. Go to Rebecca's cabin and ask her about everything. Go to the upper deck and ask Rose everything. Go to the priest's cabin, take the pocket watch from his wardrobe and examine it. Go outside where you find Julio. Ask him about the watch and you get another flashback sequence – the time should be about 1:20.

Go and see Hector in his study, talk to the priest and Daphine. Go to the bar and ask Suzanne about Mercades, then ask everyone about Mercades. Go to Daphine's cabin and ask her about everyone. Ask Suzanne about everyone and everything, then do the same with Hector. Go to the upper deck to find Rose's basket. Search through it and read the press clipping about guns. Ask Rose about the press clipping, Tom's love of guns and about Mercades. Go to Tom's cabin, open his wardrobe and search the sheets. Read the letter you find there. Go to the upper deck to find Suzanne falling into the sea. Point the mouse at the left life-belt and select Fling to save Suzanne. Observe the guard rail. Suzanne tells you of her suspicions and gives you a letter. She then sends you to her cabin. Go there – it has been searched. Observe the music box, open and examine it. Go to the laundry room and search the pots to find a small key. Go back to Suzanne's cabin and insert the key into the music box while blocking the figure. A drawer opens with a sheet of paper inside – take it and read it. Ask Rebecca about the gun advert and Rose's revenge. Then go back to Suzanne in the bar. You get called away to see Rebecca. Threaten Dick with a gun. Take Daphine's handbag and return it to her. Ask Daphine about Agnes' will for another flashback. The time should be about 4:00.

Walk to Rebecca's cabin and she tells you her suspicions. Walk to Daphine's cabin, then Rose's cabin, then the priest's cabin. Go and talk to Dick about everything. Go to your cabin – take the note and read it. The time is now about 4:30. Go to Hector's cabin and hear his dying words. Walk to the kitchen. Take the tin opener and open the hatch and go down. Take the crowbar and use it on the case. Use the opener on the tin. Use the crowbar on the plank to find the missing reel of film. Go outside Hector's room and take the screwdriver. Go to the smoking room. Put the reel of film on the projector. Use the screwdriver on the screws to remove the hood. Press the button, put the hood back on and operate the projector. Go to the rear of the hall – Daphine gives you a note – the time is now 5:20. Go to Suzanne's cabin and observe her dead body. Go to the captain's cabin and take Karaboudjan's book. Go to the study and examine the books. Rearrange them so they spell INCAL. A secret door opens. The time is now 6:00. Enter the secret passage and complete the arcade sequence. Search the mafia man and take the doll. Go to the smoking lounge and show the doll to Daphine for another flashback. All the main characters who are still alive are now seated. Point to the murderer and watch the excellent end sequence. The murderer is, of course – aaarrrggghhhh! (Mr Aaarrrggghhhh, a Belgian.)



● **Yes, well, Destiny obviously hasn't quite got the hang of this door thing, and as a result is perched on the roof desperately searching for a door-knocker.**

● **No, no, no. It's a question, so obviously it should end in a question mark, not an exclamation mark, you ignoramus. And stop all that complaining about the bleeding carcass on the floor – it's absolutely no excuse for shoddy punctuation, young woman.**

● **"Don't think you can frighten me with your enormous pink words, you rotten ugly swine. Yes, you, with your smoothed-down hair and girlie shirt. And how did you find out about my vice? You've been in my shed, haven't you?" (Sorry. It had to be done.)**

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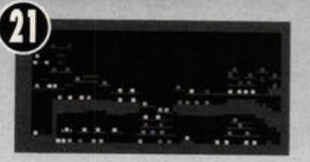
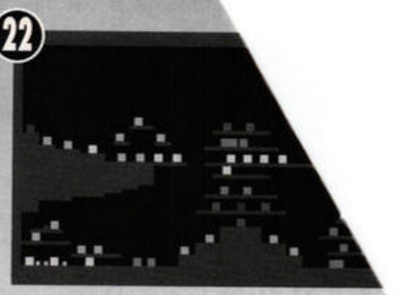




MAGIC POCKETS

Renegade

And so, finally, we stagger onto the last section of our complete solution to that immense platform game *Magic Pockets* from its programmer, Sean Griffiths – the solution we bravely began all those months ago in issue and continued with all due deference last issue.

THE MOUNTAIN SECTIONS

NINETEEN: As with all these sections, aim to get a magic potion. These give double fire – the most powerful mini-powerup in the whole game! The sections from now on get harder and harder – getting superpower (every 100,000) is the best thing that can happen. First, kill the egg and the three hares, trap the yetis and spin on them. Kill six snowmen and trap for the potion. Watch out for the yeti that jumps at you. Wherever there is a ledge, push and roll snow over the end. Move right – remember you can jump and spin over ledges, too. When you get to the power station, kill the eagles and drop down. Keep firing forwards – there are some aggressive Eggmen here. Climb up to get the space hopper. When riding the space hopper, there are three types of bounce. The hopper bounces normally if you stand still. Pushing up gives you a medium jump and pressing <Fire> gives you a high jump. The highest jump causes you to fall hard onto a nasty – this causes him to burst into sweets. Use a little jump to kill a number of nasties then high jump onto another nasty and you get a good bonus. Don't miss out the last hare and you should get a maximum kill bonus.

TWENTY: Shoot straight away since the snowman will if you don't! Jump into all the pits to increase the kill count. Try to spin on the Eggmen as well. Watch out for the yeti pit – about ten yetis jump out at you. Spin off the next ledge and keep spinning – you should be able to kill all the nasties in this pit. Take the bonus and trap for a powerup. Do a similar thing in the next pit. Next, climb the power station and get the toy. Bounce on all these nasties and exit.

TWENTY ONE: First check the TV, so you know where you are. Kill the nasties above you, jump off the left ledge. Move left – ensure you pick up a silver star here. Lose two lives (trust me!), and pick up the gold star. Transport to the best secret room in this level. Pick up all the powerups in order, and you will recognise the tune. Note: you could warp from this room, if it wasn't for those two silver stars on top of each other! You should be well powered up now. Travel right and along the bottom. Blast the yetis, but before climbing the column, rush to the shades and smart bomb all the eagles for a cool 10,000. Now climb the column – be careful not to jump into the nasties. The exit is up on the right, but to get the hopper first, travel left. Clear these platforms, and jump the gap. Watch out for these Eggmen – they are hyperactive! Spot the super-nasty – yes, he's got your hopper, ten shots should kill him. Now bounce right back to the exit.

TWENTY TWO: Getting harder now! Get the snowmen before they get you. Move right – use snow piles to trap them. Climb up and use the drill to get some very useful powerups. Try the secret room for a quick shot at the sweet machine. Walk left, jump down, and underneath the bridge. At the end are some useful bonuses. Back left, drop down and right. Watch out for the super-nasty, pick up the hopper and follow the arrows left. However, notice there is an impassable wall blocking the exit. Climb back up the central column and bounce left – this is the section you have not covered. Ignore the bubble – you're safe on the hopper. Climb to the top of the column to pick up two big cakes worth 20,000 each. Now travel back and underneath the building to drop down the pit where the exit is. Try the TV set if you get stuck.

TWENTY THREE: Kill the eggs by jumping off the ledges, then kill the yetis. Now trap anything that walks onto the bridge. Climb the columns to pick up the powerups, and drop onto these three rather tough snowmen. The secret room in this section is extremely useful since it's full of handy mega-powerups. Take the coins on the right and play to get a transporter. Climb to the top, walk left carefully – there are a few serious Eggmen here. Drop down the gap at your peril – you get a potion and fast powerup! Climb the column to get the hopper. Now bounce right and exit this section.

TWENTY FOUR: This section features a lot of long ledges. Move right and left along them, throw snowballs forward and avoid the clusters of nasties. Watch out for the yetis that jump at you – they only take one hit. Climb over the building and jump on the aggressive rabbits and snowmen beneath you. Move left and push snow over ledges wherever possible. Don't miss the spiky helmet hidden behind a column on the left by the wall. Use the helmet to the full and take out as many snowmen as possible. Don't drop off the edge and keep moving until the helmet runs out. At the bottom, get the hopper and bounce over the ledges in order to get to the exit. Be careful not to jump up to the top again.

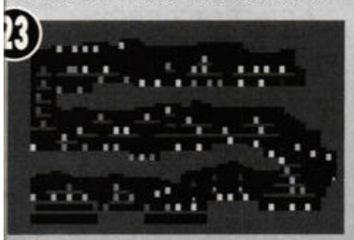
TWENTY FIVE: If you picked up a fruit drink, collect your bonus on the left, otherwise climb the cliff. Use one shot to kill the falling Eggman. Spin off the edge onto the yetis. Notice the bubble gum. For the next section, you need super-power – if you're about to get it, travel right to the exit. Otherwise use the gum to float up to the top and try to gain enough points. Drift quickly up to very top where you find your first 10,000 point bonus. Try to kill all the nasties on the right and pick up another 20,000 points. Go to the left side and pick up the bonus there. Be careful since some of these nasties are tough. Whatever happens, make sure you don't cross 100,000 yet. Exit on about 95,000 and you should be okay.

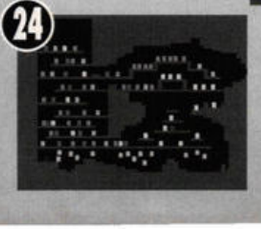
TWENTY SIX: The penultimate level and the hardest in the entire game! If you're super-powered you could do this level, otherwise you die! First of all, stand and fire until all nasties are dead. Now edge forward and keep firing. Some yetis fall from the top – kill them and edge forward. Ensure you stop the bonus on milk to get some extra life. Again edge forward. A good technique is to jump up to the ledge with the coins and spin off the end. Always watch for nasties falling from above. Beware of the eagles where the coin piles are. Now the exit should be easy.
NB: If you can, transport in this room to wrap up the game!

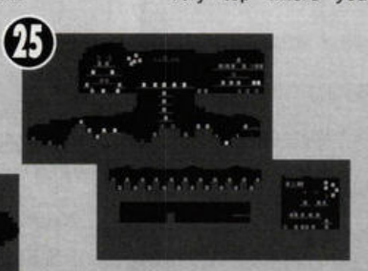
TRANSPORT TO HOME: Using your skills, create one silver star and one gold star to transport you to the end room. You need your wits about you since it can be quite tricky. First collect 5,000 points – ensure you burst to clear the kill count and trap for a silver star. Then kill the remaining ten nasties – make sure there are ten left – there are ten from the first hare – then trap to get a gold star and transport. Don't hang around – the bubble comes and this time it kills.

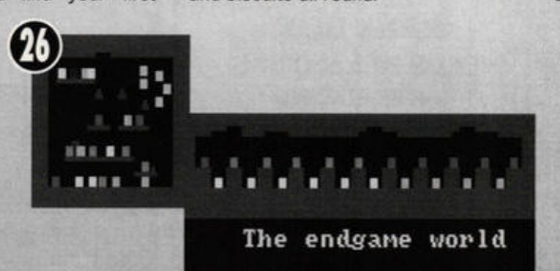
THE LAST ROOM: Run to get a hopper, or blast the snowmen to drop one. Then collect your massive bonus and exit.
Well done! You have finished *Magic Pockets* – applause and cups of tea and biscuits all round!

→









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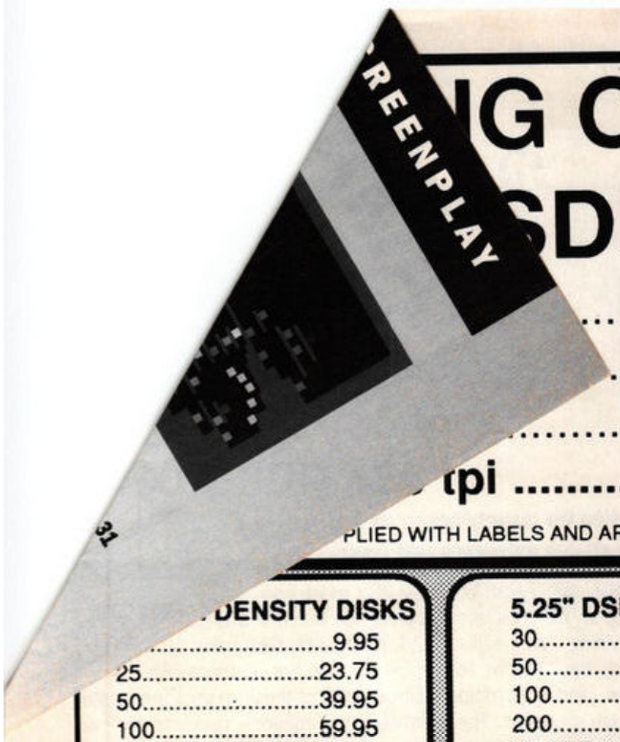

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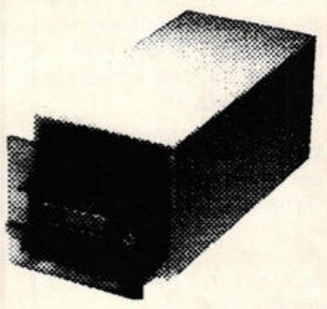

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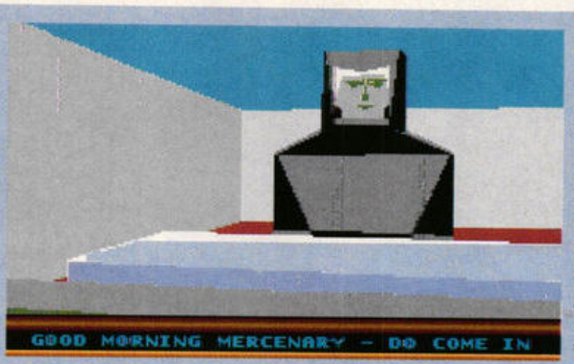
MERCENARY 3

Novagen

Last issue we gave you the first two solutions to this *FORMAT* Gold winning graphic exploration. Now here are the other three, again from **Iain Rawson.**



● **"Now then, Merc, why do you want this job?" "Well, er, I've always been interested in sabotaging illicit mining operations on once-beautiful green islands in a mythical solar system."**

3. LOCK HIM UP

Follow the first solution until you get the Superperson suit. Board the suit and fly to Dion East. Pay a visit to Arthur's Cottage and Bil's Mother's. Collect the PC Bil Report and Doorkey C respectively. Then return to Birmingham Island and the Verdant Party HQ. Enter the building and use the Transporter to get to Bil Industries, Clotho.

Collect Doorkey B from the ground floor of the building and return to the Transporter. Use it to get to Logos. Leave the building and fly to C Rooke Estates. Buy the Land Deed and return to DHSS House. Use the Transporter to travel back to Dion.

Once you have arrived back on Dion, fly to the Land Registry and enter the building. Go to the ninth floor to register your claim for the land you have just bought. Drop the Land Deed and proceed back to Verdant Party HQ. Use the Transporter to get to Eris Capital City.

Leave ETA House and fly to the the Exchequer District A. Go to the fourth floor of the building to be deputised. Drop the PC Bil report and brace yourself. You owe six million credits back taxes and they're payable immediately. Leave the building and fly to the Instant Architects. Enter the building and head for the ninth floor. Buy the Instant Prison and go to the eighth floor to collect Doorkey H. Leave and return to ETA House. Use the Transporter to get to PC Bil's HQ.

Go through the two previously locked doors, pick up PC Bil, ignore his complaints and use the Transporter to travel to Logos. Once on Logos, leave the building and fly to the Building Site. Place the Instant Prison on the X and stand well back. The prison is built within a couple of seconds, so go inside. Drop PC Bil and leave. He is now locked up and cannot get out – you don't even need to throw away the key.

4. BLOW IT UP

Follow the first solution until you get to the Superperson suit. Fly back to Verdant Party HQ. Go to the second floor and use the Transporter to get to Eris Velos City. Travel to the Theatrical Costumier and buy the disguise. Return to the Writer's Guild and use the Transporter until you arrive at Bil Industries on Clotho.

Leave the building and fly to PCB Powergen. The enemy ships do not shoot at you as long as you hold the disguise, so you are safe flying. Pick up the explosive from inside the building and return to Bil Industries. Enter, go to the first floor and use the Transporter to travel as far as Eris Capital City. On Eris, fly to Mineral Trading and buy the Explosive. Then fly on to Eris Power-Gen to pick up the Timed Detonator. Next, return to ETA House, drop the taxi-card and Bus Pass and go to Gaea via the Transporter. There is a box of explosive at Pyrotech Supplies 1. Fly there and get it. Travel back to the Trade Commission and onto Dion by using the Transporter.

Leave the building and fly to Bil's Farm Machinery. Buy the box of explosive and nip over to Dion North. Mine Site No. 1 is the first target at 04:03. Go there and switch on the Timed Detonator. Set the power to 9 and give yourself enough time to get out of the area. Select a box of explosives from the inventory selection window and arm it. Quickly drop it next to the mining machine and fly out of the area. Do not leave anything behind because it will not be there if you return. Make sure you are definitely out of the area (in a different sector number) otherwise you get killed.

While blowing up the Mine Sites, you get harrassed by Bil's forces. Ignore them since they do not shoot. You can pick them off if you are waiting for some explosive to detonate and are feeling particularly spiteful. Only one piece of explosive can be armed at a time, so don't set the timer too high – 15 to 20 seconds is best.

Repeat this process on three other Mine Sites. You should have two Mine Sites left to be destroyed. Collect the explosives from the Company Store and destroy another Mine Site. The remaining piece of explosive is at Bil's Bar. Fly there and and enter the building. Walk into the back room and go to the basement (the back room is a lift). Pick up this explosive, leave and blow up the last Mine Site. Having done this, PC Bil flees the Gamma system, leaving you a state hero.

5. SHOOT-'EM-UP

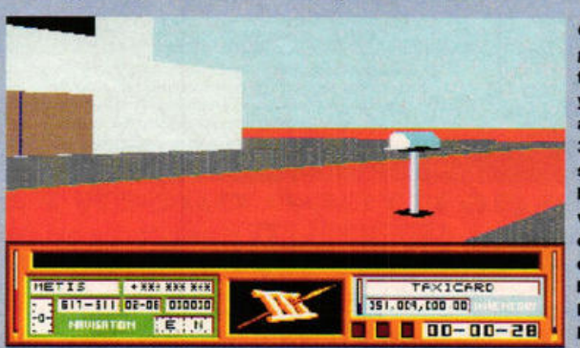
Follow the fourth solution until you have the disguise. Fly to Snow Island and buy the Powerglove from the shop at 03:04. Now travel over to Eris Capital City and visit the Playtester Stores (09:02). Pick up the Shield and Sights and leave. Fly to ETA House and go to the first floor. Drop the Bus Pass and Superperson Suit. Use the Transporter to get to Dooberry's Solicitors on Metis.

Call a taxi and travel to the Timewarp Prison. Walk round the back of the prison and pick up the Eagle Nine SE and its key. Call the taxi again and go back to Dooberry's Solictors. Use the Transporter to get to Clotho.

Now all you have to do is destroy 90 enemy craft. Clotho is a pretty good place to start to do this, but you may have to travel to other planets to find more ships – Perseus, Pan and Thalia are all excellent places to look. Board the Eagle Nine SE and simply shoot the enemy out of the sky. The odds are heavily in your favour. The shield means that you can be shot five times before being put back at the Bus Station on Eris. The sights give you an on-screen cross-hair you can aim with and, best of all, the disguise means that the enemy won't be able to shoot at you. If the enemy stops attacking you, then destroy one of Bil's buildings – his cottage on Dion, for example. This should annoy him sufficiently to make him send off another attack wave.

After you have destroyed all 90 craft, Bil flees the Gamma system and again you will be declared a state hero.

Note: it's actually possible to complete the game using all five solutions. Try doing it this way: get elected, but do not veto Bil's bill, gamble on Bacchus to win back the money you lost while getting elected, but do not bankrupt Bil. Now complete "Lock Him Up"; bankrupt Bil on Bacchus; complete "Blow It Up" and pick off anything that attacks you. Finish off by destroying his army to make you state hero five times.



● **A major programming feat, I think you'll agree – a postbox in 3D. Coming soon: a breadbox in Panavision, a toaster in Technicolour and a hamster in Dolby Stereo. Don't miss it!**

ANOTHER WORLD

US Gold

Those level codes in full (but not in order): EDJI, HICI, FLLD, LIBC, CCAL (grrr!), KCIJ, EDIL, FADK, LDCI, ICAH, LDIJ, LALD, KJIA, LFEK, FLAK, LAEA, FIEI, GABK, KCGB. Typing these in takes you to a particular section of the game – but you won't know whereabouts unless you've actually played the game through in sequence.

CASTLE MASTER

Domark

Start the game by holding <Shift> and <L>. Press A at least 12 times or until you hear a thud. You'll see this diagram in front of you:

```
      4
1     2        3
```

Throw rocks at the boxes for these effects:

1 – increase rock travel
2 – increase strength
3 – get all keys
4 – see end game sequence

Kieran Haughey of **Australia** is now feeling extremely proud.

CISCO HEAT

Imageworks

For infinite time, pause the game and type TIME UP followed by <Return>.

DEUTEROS

Activision

A cheat for this puzzling spacer ("spacer" © 1992 Gamebusters) from **David Lynch,** somewhere in **Weirdsville.** Press <Caps Lock>, then press <C> twice. Two numbers appear and you find that anything you now design is available to you without you having to go to all the trouble of building it. In addition, you have an infinite number of each item. Handy, huh? To turn the cheat off, press <C> twice.

● **Look, just what is this picture from *Deuteros* supposed to be? The more you look at it the less sense it makes.**

LEISURE SUIT LARRY 3

Sierra On-Line

This works on most Sierra games. If you get stuck on the very American questions at the start, just press <Alternate>-<X> to skip them.

ROBOCOD

Millennium

Press <Control> and the screen flashes; press <Return> and you'll have a shield, which means, in effect, infinite lives. So says **Robert Vincent** of **Walsall.** Also, from **Iwan Moore** of **Cambridgeshire:** at the beginning of the →

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ame, run as far right as possible and limb onto the top of the castle. When ou reach the roof, run left into the all. Two new levels appear.

RODLAND
Sales Curve

or infinite thingies, put the name BIG BOSS into the high score table.

SKWEEK
Loriciel

On the option screen try pressing <F2> while holding down the Spacebar. This enables you to move into different levels.

SPACE ACE 2
Readysoft

Try typing in CADAVERRA to ease your frustration during the game.

SUPER CARS
Gremlin

When asked to enter your name, try entering either ODIE or BIGC for loads of money.

VIGILANTE
US Gold

Enter POOKY IS MY PAL into the high score table – F1 gives you extra lives and F8 takes you to the next level. ***stf***

UTOPIA
Gremlin

Fancy building a Fusion Cruiser before your scientists invent them? Well, you need a mine, an arms lab and a shipyard. Get people working in them and click on the shipyard. You see a gap on the menu where the Fusion Cruiser should be. Click on the gap, then on the Construct Ship icon. Finally click on the shipyard. You should now have confirmation that the cruiser's being built. And all because of Matthew Cooper of Surrey.

● Heh, heh, heh, my wife, my wife, I wouldn't say she's fat. No, actually, I'd say she's quite thin really. Thick? Thick? I'll say. She's so thick she – er, can't think very well. That's how thick she is. Heh heh heh heh heh heh no, really, I shouldn't laugh.

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The three Rs

Prepare your children for the big wide world. Teach them how to look after their cash and then how to spell. Terry Freedman, *STF's* Education specialist, checks out the latest edsoft releases

Money Matters

AGE RANGE: VERY YOUNG
MACHINE: ALL COLOUR STs
PRICE: £19.95
FROM: TRIPLE R EDUCATION
CONTACT: 0742 780370

Boingy Boingy, *Fizzy Pop*, *Cozmo's Coins*, and *Piggy Bank* are the imaginitvely named programs which make up *Money Matters*. Each has three levels of difficulty and aim to teach children about money.

The skills tested – they're not really *taught* as such – range from being able to recognise coins to adding them up. Some aspects of the package are excellent. For example, the package includes a keyboard overlay which you – er, put over the keyboard. This transforms the keys into items like 50 pence pieces and £2 coins. This sort of thing has been used very successfully in schools and is ideal for children who can't manage the normal keyboard for one reason or another. So it's obvious that some thought has gone into this, and that, somewhere along the line, teachers have been consulted. In fact, one of the guys involved in Triple R Education is Peter Davison of the *Fun School* series fame.

Another good thing is the graphics, which are bright, friendly and inviting. The characters are particularly appealing, although using clowns isn't especially original.

The only trouble is, not everything about this program is rosy. For example, one screen message reads "i am timing you." What happened to the capital "I"? Another example – in *Boingy Boingy* we're told that 6 + 2 = 8p. Oh yeah? Where did the "p" come from? Okay, so these are not major disasters, but they detract from the overall high quality of the presentation. It's also a bit disconcerting to be kept in the dark sometimes about what you're supposed to do – like press <Return>.

Long term interest is likely to be low – you can't change the questions that are asked, and you're not given a score. Also, of course, once you've learnt about coins and how to add them up, there's not much else you can do with this program, except use it as a place mat. So, then, what's the point? If you want to teach your child about money, it's easy: all you do is hold your jacket or purse upside-down on the kitchen table and use real coins!

It seems to us here at *ST FORMAT* that *Money Matters* contains many good ideas and has had a lot of hard work put into it, but they are wasted in this particular instance. Next month we'll be reviewing other – better – edsoft from the same software house. Used as a counting/arithmetic teaching aid, this example isn't too bad, especially if that's all you need. But for a fiver more you could get all this and more in *Fun School 4*, as reviewed in *STF* 31 – turn to page 74 if you missed it.

Contents: One single-sided disk; keyboard overlay and fitting guide; four page manual; boxed

● Why is a 50p the largest coin you can use? What happened to the £2 piece? Small details like this detract from the overall high quality of the package.

PRESENTATION	9
EASE OF USE	5
LONG TERM INTEREST	4
VALUE FOR MONEY	4
EDUCATIONAL VALUE	5
OVERALL	**52%**

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CONTACT: 0792 298283

Read and write right, right? Well, that's a pretty confusing play on words most five year olds wouldn't see if they fell over it. However, if you hide the title from your kids until they're old and wise enough to appreciate such subtle wit, the edsoft itself isn't bad.

There are two programs – *Fire Fight* and *Splashdown* – and they're both pretty similar in what they do. The main difference is that *Splashdown* enables up to four players to compete with each other, but in *Fire Fight* there's just you.

In both programs the general idea is to insert missing letters into words. Now you can, of course, make up this sort of game yourself with a common or garden word processor, as demonstrated in *STF* 32. However, where this package scores highly is that you can choose the letter groups you want your child to be tested on. For example, you could select the letters "SL" and "SM," or "CL" and "CR." This is a very sound educational principle, and puts this edsoft a notch above many other so-called reading aids.

In *Fire Fight* you have to stop a maiden being roasted alive by a raging inferno. Every time you select the right letters to insert at the beginning of a word, a fireman drops the letters in the right place and climbs up nearer to where the girl is standing. A bit sexist, perhaps, for modern taste, or a variation on an old theme – depending on how you look at it. Either way, the graphics and sound effects are good

● Aaaaagh!!! ! Surely not another clown???! Bright and bold graphics help to make *Money Matters* exciting and interesting to look at.

● A new twist to the idea of a piggy bank – get the sum correct and *you* get the money; if not, the *pig* gets it! Las Vegas – here we come!

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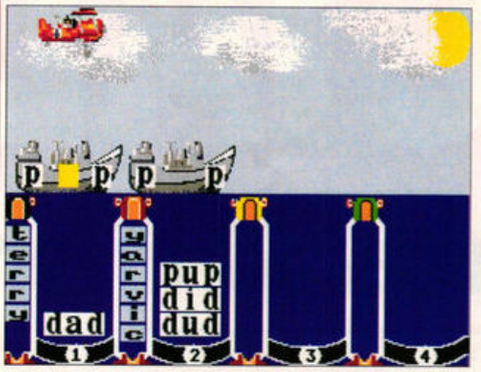
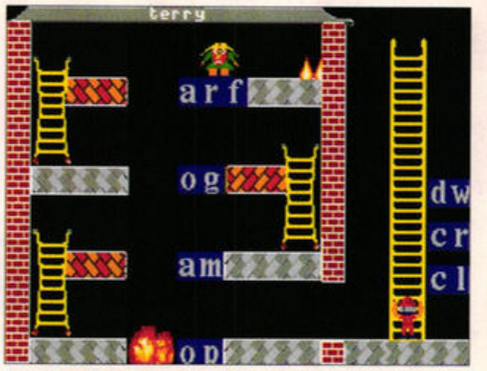


● ***Splashdown*** **is a really great game if you have a yearning to sink ships and as long as your first name is no more than six letters long, because if it is, there's no way it's going to fit!**



● **In** ***Fire Fight*** **there's a ladder leading nowhere, words going to blazes and a roasted damsel on your conscience if you fail – as you can see, a very realistic scenario! But it's a good piece of edsoft anyway.**

and initially provide a positive incentive to playing the game. Unfortunately, it's all a bit slow and tedious after a while, and you find yourself hopping about wishing the fireman would get a move on.

In *Splashdown* the aim is to sink as many ships as possible. It's strange to be rewarded with an exploding ship every time you get the right answer, but you soon get used to it. This game is very similar to the other one in some respects, but you get a bit more choice over whether the words are in groups or not, and over which position in the word the missing letter goes. Unfortunately, the words are no longer than three letters, even at the highest level, so its usefulness is somewhat limited, to say the least. But the graphics and sound effects are good.

You can't alter the letter combinations in either game, but then there are so many possibilities of game play – we estimated 40 – that maybe this doesn't matter. A score-keeping facility would also have been welcome. In overall terms, however, this package represents very good value for money, despite *Splashdown* being a bit of a let down, and could easily be used with older children who have got spelling difficulties.

Contents: two single-sided disks; four page manual; boxed

PRESENTATION	9
EASE OF USE	7
LONG TERM INTEREST	6
VALUE FOR MONEY	7
EDUCATIONAL VALUE	7
OVERALL	**73%**

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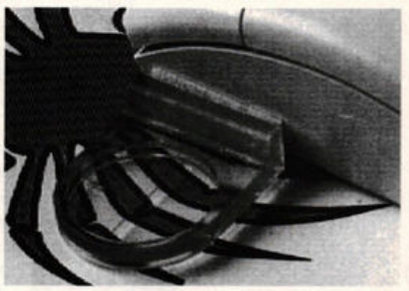

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To make sure you get the most out of *Sequencer One* we're offering special deals on other associated packages. For even more features, you can invest in Gajits' latest upgrade – *Sequencer One Plus*. Then there's the Sample Series, which gives you a set of samples you can load into *Sequencer One* (or *Sequencer One Plus*). The Hit Kit enables you to start writing your own professional drum tracks and bass lines.

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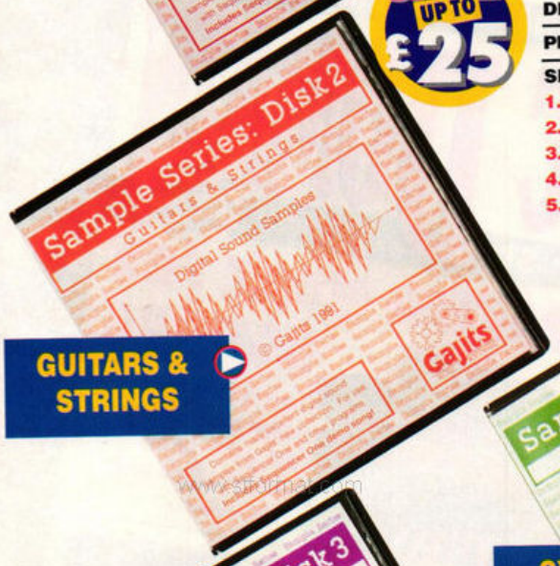

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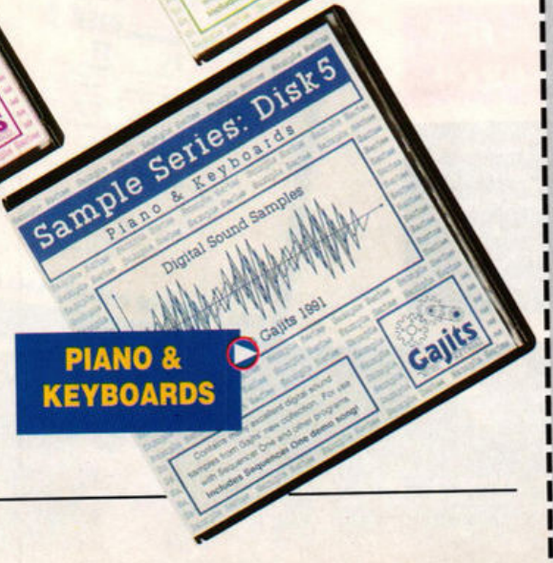

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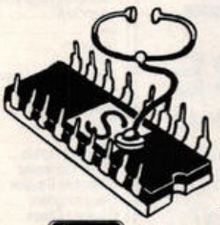

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Feedback

Welcome to Feedback, the section where the Editor gets his chance to answer your letters. This month, I've decided to make up Christian names for readers who are too ashamed to supply their own. Address your letters (Christian name included) to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. While you're at it, let me know what you think of our new ST Answers section

COULD THIS BE POSSIBLE?

A few days ago I decided to buy a game through mail order and I used your magazine to look for a company. I settled upon SC Marketing Ltd because their prices were in my range. However, when I looked down through their list I saw *Eye of the Beholder* and *Death Knights of Krynn*. Now, as far as I know, these games aren't out on the ST. Please could you tell me if they are or not? If they aren't, how come the company can advertise them? Also, I saw *Lemmings Construction Kit* advertised. Is this coming out, and if so, when? Finally, could you give me the name of the best modem I can get for around £50 – £100 and anywhere that sells them in Ireland?

Eoin Maguire, Co Dublin.

stf: *The advert you're referring to was one placed in both ST and Amiga (sic) magazines. Some of the games listed have only been released on the Amiga games machine. If you attempted to buy these particular games for your ST, SC Marketing would offer you a refund.*

We haven't heard anything about the Lemmings Construction Kit *since Christmas, so we contacted Psygnosis to find out what's happening with it. According to them, there are no plans as yet to release it for any machine.*

We use the Supra 2400 modem (☎ 081 566 6677) here but there are many others worth considering. In June, we're conducting a modem roundup and looking at the entire comms scene, so join us then for more information.

THE PLEB FROM OUTER SPACE

I really do have to laugh at your concern for the lack of "serious" software support. May I suggest that you should do more to promote this area? Any advertising manager worth his money will tell you that the purchase and use of an item is directly linked to that item's exposure in the press. So, if you want to see the ST as a games machine, you are doing the right thing. Your negative attitude to the "serious" user is why you don't get advertisers in that area and people don't buy the ST as a serious machine as much as they would otherwise. Sales are press generated. If not, why do people bother advertising or consider it worthwhile?

Look at any half decent PC mag and you will see many articles on "serious" software usage. Why? Because they would lose sales by *not* covering serious software and their staff are not all of the "games" fraternity. I suspect your staff are, because of the skimpy reviews you do and the fact that when you do graphics and programming tutorials, the content is of the "games" style. When are you going to review object orientated graphics packages?

Databases are another area you seem to ignore. If I were buying one, I'd dig out the spec for *Dbase 3+* and use that as my baseline for comparison. Why? Because it's an industry standard. Maybe it would cause your staff too much of a headache to do the same – if they were capable of understanding it!

All in all, you've got a good mag but it's wasted on brain-numbing material. Come on, buckle up, bin the games and wipe the hard drives of games. You do take the ST seriously, don't you?

Snuggles Chapman, Reading

stf: *Are you sure you've been reading* ST FORMAT? *Did you leave your white stick at home this morning? You're very good at hurling criticisms around but you do a bad job of supporting them, Snuggles. If I understand you correctly, you claim that* STF *is a games mag. Perhaps you would like to offer some justification for this. If you relegate regular reviews of things like hard drives, printers, music software, DTP programs and graphics to the category of games, then I agree with you. Perhaps you'd like us to abandon the games section altogether and stick to reviews of databases and spreadsheets.*

Your point about advertising is sheer crap. Why don't you try adding up the number of games and non-games adverts in this month's issue? Concerning my reviewers, I have a team of experts employed in writing the ST An-

YEP, THEY'RE SHORT BUT SWEET, ALL RIGHT

● **I like to play adventure games on and off the ST. I know a shop called Games Workshop and they sell a brilliant game called *Dark Future*. Could any computer programmers put it onto the ST?**

Gavin Hutchinson, Littleover, Derby

– Gremlin Graphics are currently converting the board game* Space Quest *to run on the ST. They may be interested in converting other adventure games provided the game would work successfully on the ST. Write to them at Gremlin Graphics, Carver House, Carver Street, Sheffield S1 4FS and suggest the idea.

● **I am very interested in the Commodore emulator but I can't find it, so could you please print in the next issue where I could get hold of it? If it is a Public Domain program then please print it, but don't forget to add what hardware you need for this emulator. I don't mind if it got 45% in issue 25 because I had a Commodore many years ago.**

Thomas Phillip, Germany

– I assume you're referring to the C64 emulator we reviewed back in issue 25. As we stated in the issue, it's available from all PD libraries – check our PD Listing on page 72 if you missed it. The ST Club (☎ 0602 410241) or South West Software Library should certainly be able to help you. Don't expect miracles, though – it's a pretty abysmal emulator. The only hardware you need is your ST – I assume you know what one of those is?

● **I'm sure we all agree *Microprose Golf* is one of the finest games around. You gave it 95% in issue 26, which was 3% more than the classic *Kick Off 2* and there were official *KO* competitions. I was wondering if there was any chance of a prize for a hole in one, which I achieved from 170 yards. *Challenge Tennis* is offering a badge for beating it, so would Microprose do such a thing for a hole in one? I would send my disk as proof if needed, too!**

Wing Chee Man, Aveley, Essex.

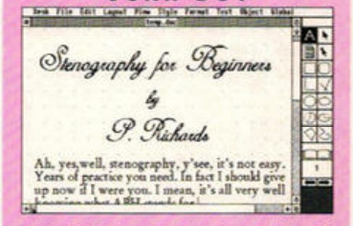
– You want a prize for that? Our games reviewer has achieved a hole in one "hundreds of times" and he can't even play golf! I bet you're the sort of person who demands a rise from the tooth fairy.

● **Please could you let me have the address of Activision?**

Richard Hull, Leicester.

– That's easy – Activision Europe, BP 40, 92101 Boulogne-Billancourt, France.

SCAN DO?



● **I've just bought *Pagestream 2* and I have been considering buying a scanner. There are plenty of black and white ones but is there a colour scanner?**

Nicholas Dawson, Long Eaton, Nottingham

– There's a proliferation of black and white scanners on the market but no ST colour scanners, I'm afraid. This is partly due to the expense. A colour scanner could cost upwards of £1,000 and still wouldn't produce the kind of quality you need. Why not use a black and white scanner and then import the picture into an art package and add some colour to it?

We have an in-depth look at desktop publishing coming in* ST FORMAT *very soon – watch for it.

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WHAT'S WRONG WITH THE COMPUTER INDUSTRY

For a long time, I have kept a lot of my views to myself, but the computer industry is getting itself into such a mess, it needs the cooperation of all involved to sort things out and get it back on the road.

Computer Exhibitions – I seriously question the lack of commitment to the computer industry from top publishers. The 1991 CES Show collapsed partly because of their lack of commitment. After the disastrous 1990 CES, many top publishers questioned the need for any kind of public entertainment exhibition at all. The publishers complained about the lack of business at these exhibitions and the difficult working conditions. However, the lack of business is entirely their own fault. When was the last time you were actually able to purchase software from the publishers' stands? When was the last time the stands were filled by computers as opposed to free play arcade machines? When was the last time they were staffed by people other than bimbos wearing next to nothing – not that I complain about that too much! – who don't even know how to switch a computer on? Naturally, the top brass are always at the exhibitions, but they spend their time in the bars!

Licences – Publishers are releasing more software licences for the ST. Unfortunately, we have already seen the 8-bit market destroyed by licences and it's only a matter of time before the same happens to the ST. On 8-bit machines original software doesn't sell as many as a licence. Publishers tend to argue that it's not economical to produce original games. It's worth remembering that the best selling games are not always the most popular ones.

Retailers – As in all industries, there is little room for the small independent retailers. They are increasingly finding it harder to compete against the multiples who purchase in bulk at huge discounts. Unfortunately, the same thing is happening within the computer industry and is something that could cause a lot of harm to the computer manufacturers. How many times have you walked into a multiple (like Dixons), asked them a question and then been given a load of garbage in reply?

Software prices – The average price for an ST game is now around the £26 mark, but too many publishers raise the price for their "big releases." For example, most Electronic Arts games cost £26, but if you want to purchase *Populous 2* then you have to find £30. Some firms (like Microprose) feel that £35 is right for their releases. As for utilities, a lot of these are above the £50 mark. I would argue that very few games are worth their retail price, but that is beside the point.

Most worrying is how quickly software prices have risen in the last ten years. Back in 1982, the average price of software for the latest machine (the ZX81 and Spectrum) was nearly £5. In 1992, the price of software for the ST is nearly £30. In the last ten years, the price of software has risen six-fold. If this trend is continued, games for the latest computer in the year 2000 could cost over £100.

The Public – The most important people within the computer industry are the ones who are treated the worst. This group of people have virtually no legal protection, no quality guarantee or controls, no governing or public body – and finally, this group of people are always made scapegoats for everything that happens. Who is this group? The Public!

If you purchase a game that is bugged to hell, what rights do you have? None. If you purchase a game that is such poor quality it makes noughts and crosses seem advanced, it's just your tough luck. In fact, according to Accolade, if your game loads, then you have been lucky. It is a sad fact that the Sale of Goods Act is virtually non-existent and unworkable when applied to computer software.

If people are still to be playing computer games in the 21st Century, then a link between the software publishers and the public must be set up. Perhaps the public could be given a voice in the industry body ELSPA? At the moment, buying software is very much a gamble, and, with the price of software rising and the lack of guarantees, this gap must be bridged.

Finally, I publicly challenge all the publishers, distributors and ELSPA to arrange a meeting where members of the public are given a chance to question the top people. Failure for such a meeting to take place will confirm to everyone that the publishers and distributors have no interest in the feelings and attitude of the public. I look forward to this taking place.

Philip Harman, Norwich

stf: I understand your bitterness, Phil. When MPH, your software company, went down it was a great loss to the ST scene, especially since you had some exciting projects in the pipeline which never came to fruition. Your criticisms seem to stem from your own bad experiences.

Shows are there to make money. It's in the publishers' interests to come up with shows that will attract people – either to promote forthcoming games (such as the CES) or to sell software (such as the Shopper Show). You get the customers you want by attending the right show.

I disagree that licences are the best-sellers. Historically, licences have sold well, but increasingly games players are realising that it takes much more than a great name to make a great game. In fact, it's often been the case that big licences equate to poor games since the budget has been spent on obtaining the licence rather than investing in a decent game design. Games like* Populous, Mega Lo Mania *and* Secret of Monkey Island *prove that original concepts can sell far better than a licence. Long may that continue.

There is no doubt that the cost of games has increased enormously, but the amount of work that goes into a game has increased enormously as well. There used to be a time when school kids could sit in their bedroom each night and turn out a chart-topping game. But things were easier for the 8-bits. Using the ST, it's possible to have realistic visuals and quality sound. Because it's possible, everyone quite naturally wants to see them and programmers want to use them. Big manuals also became important as the games become more detailed. The demand is there, and the only way to satisfy it is by bringing more people into a programming team and raising the costs. If people aren't prepared to pay the full price for games, they can always pick up versions on budget after a short wait. The games that aren't worth the money don't sell, thanks to the help of reviews like ours.

Utility software prices vary enormously but this is hardly surprising bearing in mind the relatively small market for utilities – an area which, you'll have to admit, Phil, is very well catered for by the PD.

I imagine it's possible that games could cost more than £100 a throw by the year 2000, but imagine the sort of games they'll be – virtual reality experiences with CD-quality sound and lasting gameplay. I'd pay it.

Your points about treatment of the public are more valid. It's a sad fact that people can spend £25 on an unplayable game and not be entitled to a refund. Some wholesalers offer refunds but the best way to guarantee you buy bug-free good games is to read reviews first. If you buy a camera, you don't take photos with it to see how it performs before you part with your cash. You read a review.

Many of the multiples couldn't give you much help buying a computer, but then they don't give you a lot of help in buying a video recorder either. Of course, that's the reason they can sell so much equipment at such good prices.

You seem to have adopted a "grass is always greener..." attitude. The public don't have enough rights but you can't shift the entire blame on the computer industry. Small claims procedures should be better publicised. It's too easy for companies to rip people off. These are problems which plague every industry. While it's certainly a good idea for ELSPA, the representatives of leisure software publishers, to do their best to improve the situation, remember they're not alone.

Does anyone have any other ideas or suggestions about what the leisure software industry can do to improve its image?

swers section. These people were chosen for their experience in "serious" ST applications and they're certainly not biased towards a particular PC database which seems to be occupying all your attention. Maybe you should consider a girlfriend instead.

The philosophy behind ST FORMAT *is that ST owners are interested in all aspects of ST computing. Someone who plays games doesn't do so exclusively – art packages, music programs and word processors are also well worth trying. By contrast, someone who uses an ST to write and print a fanzine can also have a lot of fun at the occasional shoot-'em-up or still get heavily addicted to games like* Secret of Monkey Island. *Maybe you're such a one-dimensional character that you can't enjoy anything beyond serious ST applications, but don't tar everyone with the same brush. The rest of us are normal healthy human beings with as much interest in an occasional blast of mutant aliens as in word processing. Have you considered a frontal lobotomy?*

NOT VERY PUBLIC SPIRITED

Why do PD libraries charge an average of £3.00 per disk? I've bought disks for as little as 50p, sometimes with labels supplied – I'm sure PD libraries can get them even cheaper. You can get disk labels, even good ones, for about 3p each. Ten disks would cost you £30, but PD libraries could buy the disks and send them out for under £6.00. PD software originates from the goodwill and hard work of programmers, who know they probably won't receive anything for the effort, but get a kick out of somebody else using their software. So why should the PD libraries benefit when the programmers do not? So, come on PD libraries, justify your costs.

Greg Russell, Gillingham, Kent

stf: *The overheads on PD libraries can be quite staggering. For a start, many PDLs give their catalogues away entirely free of charge. The ST Club produce a 48 page catalogue which they usually don't charge for. Besides the cost of a laser printer, paper and toner, there's also the cost of the printing involved, which can run into several thousands of pounds.*

To get anywhere, a PD library needs to advertise its assets in various magazines. Advertising space can sell for somewhere in the region of £1,000 per page and, to make any reasonable sales, you need to promote your disks.

Disk duplication bumps up the overheads still more. The big PD libraries certainly don't drag all the files from one disk to another using the standard ST file copying system. Then there's the cost of chasing new PD software in the first place. Using a modem, many PDLs call all around the globe trying to lay their hands on the latest software. In addition, there's also the very real problem of checking that PD stuff really is Public Domain, which involves contacting the programmer and confirming it. Martyn Dryden from the South West Software Library was distributing the

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Scrabble game STrabble until the owners of the Scrabble copyright took him to court – a very costly business.

You have a point about the profit margins increasing if ten disks are sold in one go, but how many people buy disks in this quantity? PD libraries also tend to offer discounts on bulk purchases for this very reason. And have you ever sent a jiffy bag containing ten disks through the post? Obviously not, because you couldn't do it for the cost of a first class stamp.

ST Club has just dropped the price if its PD disks to £1.45. If you think you can sell PD disks any cheaper, give it a try. You'd certainly corner the market.

CONFUSION ON TWO SIDES

My daughter has an STE with a single-sided drive and the thought of you not catering for her will leave me with no choice but to abandon your magazine and look elsewhere for disks. You say you cater for all types of machines – please do so by keeping the Cover Disk in the same format.

Wilhelm Frankenstein Doney, RFA Fort Grange

stf: *Any STFM sold in the last four years and every STE contains a double-sided drive as standard. Our new disk format only affects the pre-1989 STs and the vast majority of these have now been upgraded. There is no such thing as an STE with a single-sided drive, so your daughter won't have any trouble using the Cover Disk – why don't you try it and see?*

ST owners still using an internal single-sided disk can continue to use our Cover Disks provided they have an external double-sided disk drive.

COURTING THE LEGAL SYSTEM

From: Geoff Edwards, Clapham, Edwards and Turnbull Solicitors, Leeds:

May I correct a couple of points in your reply to Mr Bounsall (*STF* 32)?

There is no "small claims court" – there is a special "small claims" procedure in your local County Court for cases involving less than £1,000.

Disputed claims under this limit are automatically referred to "arbitration" rather than a full trial. The proceedings are private (no public audience) and informal (the degree of formal procedure being largely up to the individual District Judge hearing the case).

The main advantage for the consumer is that solicitors' costs are not normally recoverable in small claims hearings, so you are not likely to find yourself up against an experienced lawyer arguing your opponent's case.

You can start the proceedings in any County Court. It is wisest to first write a letter to the other side detailing your claim and threatening proceedings. Give them a time limit to respond. Keep several copies of the letter. If you do not get a satisfactory response, trot down to your local County Court and ask about issuing a "default summons." They will ask you for the "particulars of claim" – give them a couple of copies of the letter.

It is true that if your opponent is located in another area and files a defence in his local County Court, the matter will be transferred there. You can apply to that court (by letter) to send the case back. The Court will make the decision on the balance of inconvenience – that is, which venue is the least inconvenient for all parties – with any doubt being resolved in favour of the defendant (the side being sued).

If you do have to travel to a distant court to have your case heard and you win, you also recover witness expenses – your travelling costs, and the travelling costs and lost wages of any witnesses you needed to take with you.

Check whether you have a winnable

WITHOUT THE UTMOST STEALTH

I recently acquired an ST and a friend gave me a game he got free with the mouse he bought. It's called *Operation Stealth*, but unfortunately I have no instructions so I cannot complete the game. Can you let me have the address of Delphine Software?

Chris Bloom, East Sussex

– Why do I get the feeling there's something dodgy going on here? If your friend gave you the game, surely you can get the manual from him as well?* Operation Stealth *was written by French programming team Delphine Software, but was distributed in the UK by US Gold. Their address is Units 2/3, Holford Way, Holford, Birmingham B67AX. Your friend should have received the manual with his mouse. If he didn't, then I suggest you first visit the shop where you bought the mouse. It's unlikely that US Gold will sell you a manual without proof of purchase. By the way, copying someone else's game is called piracy and it's illegal..

● ***Operation Stealth*** **– new owner can't complete it without the manual. But why doesn't he have a manual?**

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GAMES

BG.01 **Monopoly;** Classic property game Plus: Chess, Backgammon, USA Football.
BG.02 **Haunted House;** Platform game, Plus Daleks, Aggravation, Warzone..
BG.14 **Invasion;** Graphic adventure. Plus: Cluedo style detective game.
BG.17* **Spooks;** Super Pac-Man version. Plus: Pipe Panic; arcade favourite
BG.18 **Megadroids;** Asteroids version. Plus: Hangman, Explode, Virus Killer.
BG.19 **Cards;** Cribbage, Poker Squares, Solitaire, Klondike, Blackjack...
BG.20 **Dungeon Master;** Maps of levels Plus: 40+ pages of hints, tips...
BG.27 **Strip Breakout;** Knock out bricks to reveal a naughty picture..
BG.34 **Assassin;** Graphic adventure.
BG.43 **Wizards Tower;** Superb Text and graphics adventure written with STAC.
BG.45* **Orbit II;** Great Arkanoid copy.
BG.47 **Vegas Gambler;** Roulette, Poker, Blackjack and Slot Machine!
BG.55* **Froggy;** Get the frog over the road game. Plus: Caves of Rigel; Maze game.
BG.56 **Cribbage, Checkers**; Yahtzee..
BG.57 **Dungeon Master** - NEW Dungeon
BG.58 **Soko;** 50 level puzzle game
BG.59 **Bubble Trouble;** smooth Pacman variation. Jumpster; Q-Bert style..
BG.62* **Millipede;** old arcade classic
BG.64* **STumped;** Cricket simulation
BG.66 **Mystic Well;** D.Master Style
BG.67 **Temon;** SEUCK arcade action.
BG.68 **Die Alien Blob;** SEUCK Shoot-Up
BG.69 **Trax Quiz;** Pub Trivia Style.
BG.70 **Hac-Man;** Great Pac-Man version!
BG.71 **Pac-Man;** Just like the original
BG.72 **Llamatron;** Jeff Minter classic.
BG.73 **Make a Break;** Pub Trivia game.
BG.74 **League Soccer;** Management
BG.75 **Bombed Out;** Original STOS game
BG.76 **Infiltration;** 3D adventure game
BG.77 **Alien Blockade;** Arcade puzzle
BG.78 **Pop Eyed;** Pop quiz for over 18!
BG.79 **Through the Looking Glass;** Text adventure featuring Alice. Excellent!
BG.80 **Skulldiggery;** Boulderdash copy. Plus: Blaster, Defender version!
BG.81 **Penguin;** Original puzzle game
BG.82 **Operation Crisslefridge;** Puzzle game! Plus: Sleuth, Cluedo style.
BG.83 **Hunt the Wumpus:** Classic Game.
BG.84 **Drop it on Em;** Bomber version.
MG.01 **BOLO;** Arkanoid variation, bat can move all over screen! (col/mono)
MG.04 **Bumper Jack;** STOS platform game.
MG.05 **Mars Maze;** STOS platform game.
MG.08* **Star Trek** - Next Generation

UTILITIES

BU.07 **ST Writer ELITE;** High Quality Word Processor. Fully documented! Faster than most commercial WP's
BU.29 **Label Printing;** Accessories...
BU.34 **B-Boot;** Boot from drive B... Plus other utilities.
BU.36 **Assistant Chef;** Recipe database.
BU.37 **Pools;** Expert results predictor
BU.39 **Fractal Zoom;** Comprehensive fractal generation program.
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BU.44 **IMG utilities;** Convert Degas, Neo, Tiny etc. to .IMG format!
BU.45 **Planetarium;** Astronomy program.
BU.46 **Mouse Pointer;** design your own pointer! 50 shapes included! etc..
BU.47 **Eplan;** CAD program for circuit design. Includes print program.
BU.49 **Typing Tutor;** Includes lessons on Home keys, numbers, capitals etc.
BU.50 **GEM Font Master;** super font editing program, use 3 resolutions!
BU.53 **Opus Spreadsheet** + charting program - Quality shareware! (D/S)
BU.54 **Amateur Radio;** Utilities Morse tutor, Grayline calculator etc.
BU.56 **Your second manual** to the Atari ST, invaluable reference book on disk.
BU.57 **ANI-ST** (formerly Aegis Animator costing £79.90!) + GFA Raytrace demo!
BU.58 **FSelect;** Good alternative file selector. Plus: Desk Manager.
BU.59 **ZX81 Emulator,** +38 programs uses original keyword entry system!
BU.60 **BBC Emulator,** + Apple Emulator, disk toolbox; useful disk utilities!
BU.61 **ZX81 Programs;** 100+ files, use with BU.59, 3D Defender, Pacman....
BU.64 **Fractal Landscape** Explorer, Mandlebrot Show, Spirograph.
BU.67 **Cardfile;** Good name and address database with search facility.
BU.68 **Magniwriter;** ST Writer but with large text! Ideal for small children or people with reduced eyesight.
BU.72 **STE Boot disk;** Enables STE to boot up in medium resolution! etc...
BU.73 **Noisetracker;** Version of Amiga PD music program + Sound modules.
BU.75 **Geneaology;** Trace family tree.
BU.77 **Art ST;** Simple Art program.
BU.78 **Easy Text;** Desktop Publisher!
BU.79 **Business Letters;** 100+ letters to use in your own word processor...
BU.80 **Mono Emulator;** Use mono progs. on your colour monitor!
BU.81 **Colour Emulator**; use colour programs on your mono monitor.
BU.82 **Colour Space;** Jeff Minter light show generator. Formerly commercial!
BU.83* **Typing Tutor;** STOS produced.
BU.84 **Mouse Tricks;** Accelerator etc. Plus disk manager. (accessories)
BU.85 **Shoot-Em-Up Builder Kit;** Create your own games with this STOS utility.
MU.05 **Sheet v2.0;** Spreadsheet with tutorial, Lotus Comp, 1280 x 280!
MU.07 **Gemini;** NeoDesk style desktop.
MU.12 **Hard Disk utilities;** Invaluable

EDUCATIONAL

BE.01 **Things to do with numbers;** full working demo! Plus: Kid Publisher...
BE.02 **Kidprogs;** Kids Graph, Kids Grid, Kids Music, Kids Piano, Kids Notes...
BE.03 **Kidprogs;** Kid Potato, Kids ABC, Kid Sketch, Kid Story....
BE.05 **Colourbook;** Fun for the younger child, an on screen colouring book!
BE.07 **Word Exact;** Word puzzle help Plus: Starchart; astronomy program.
BE.08* **Geography Quiz;** good educational game, plus Maths made easy...
BE.09* **Spelling made easy;** with speech.
BE.10 **Jigsaw;** uses any Degas picture!
BE.11 **KShapes and KShapes Plus;** great Fuzzy felt style fun for youngsters.
BE.12 **Shipwreck;** Answer sums in this fun game! + Guillotine Man; Hangman.
BE.13 **Wolf and 7 Kids;** Multi-choice graphic adventure. Race Cards; Answer Sums to race cars. Great!
BE.14 **Noahs Ark;** Simple anagrams...
BE.15 **Body Shop;** Learn Human Anatomy! Build a skeleton and assemble organs. Dot to Dot: Join the dots to discover hidden picture, or design your own!
BE.16 **Chunnel;** English/French and French/English Vocabulary text game.
BE.17 **Spanish Verb Tutor;** Very good. Plus English verb conjugation.
BE.18 **GCSE Maths;** Tutorial/Revision.
ME.02 **EZGrade;** Teachers grading prog. Molgraph demo; 3D molecular display.
ME.04 **Search;** Good historical study program created with STAC.
ME.05 **Play Spell;** 2 levels from this educational platform game. B.Spell; Spelling Game with digitised sounds.
ME.06 **Kid Publisher Professional!** Desktop publishing for youngsters! Plus: Super Kidgrid, Kid Painter....

CLIP ART

DC.01 **Small Symbols;** Seasonal, Flags, School, cars, Disney, creatures...
DC.02 **Titles;** Headings, Christmas, Easter, Halloween, Golf, Sports.....
DC.03 **Logos;** Trade marks, symbols, people, food, magazine titles...
DC.04 **Alphabets;** Christmas Symbols, lots of eyes, happy, sad, wierd...
DC.08 **Garfield,** Beano Dandy pictures, Picswitch enables easy view and print!
DC.09 **Viz Magazine;** comic pictures, plus culinery; utensils, food...
MC.01 **Boys and Girls;** Pictures of small children in various poses.
MC.04 **Illuminated letters;** Fancy A to Z. Plus; Funny pictures....

MUSIC

S0.01 **Midi Special;** Steinberg switch, 32 track sequencer, midi channel scope, hi-tech trivia...
S0.02 **Composer;** enter notes from Midi keyboards or computer; copy, transpose or output. Plus: Soundcomputer.
S0.03 **16 Voice Synthesiser;** multi voice record, filter of controllers, variable resolution metronome..
S0.04 **Chord Dictionary;** Features 2500 chords, 156 scales, 84 modes... excellent aid for guitar and piano!
S0.05 **Alchimie Jr;** Powerful Midi Sequencer many features! (mono) (D/S)

HELP!

DA.01 **Adventure Solutions; (66)** Including: Future Wars, Bards Tale, Indiana Jones, Zork 1, 2 and 3....
DA.02 **Adventure Solutions, (62)** Including; Leather Goddesses, Kult, Ultimas 1 to 5, Space Quests....
MA.01 **Dungeon Master Editor;** Demo allows editing of first 2 levels.
MA.02 **Bards Tale Solution;** Includes text files and maps of levels...

DEMOS

BD.26 **Snowman;** digitised animation!
BD.33 **STE demo;** see what your STE is capable of and be amazed.
BD.34 **What the Butler Saw;** End of the pier style fun. Slightly naughty.
BD.38 **ANI ST Animations;** Juggling Lamps and Trash Can demo. Needs BU.57.
BD.39 **Teenage Mutant Hero Turtles;** Good Turtles theme tune sample...
BD.40 **Space Station;** Cyber Studio produced animation. Excellent!
BD.41 **Monarch;** Impressive animation with excellent graphics and music.
BD.43 **Prisoner;** Theme music from the classic Patrick McGoohan series.
BD.44 **Acid Boss-Burn 2;** for all you acid freaks, good sounds and graphics.
BD.45 **Life's A Bitch by Lost Boys.**
MD.15 **Snowman;** digitised animation and music. Brilliant! (MB)
MD.21* **The Brilliant UNION** multi demo colour monitor and joystick required.
MD.22* **UNION Demo 2;** The Cuddly demo! lots of amazing animations.
MD.28 **Whataheck demo collection,** by the Carebears again, stunning!
MD.30 **Cyber Demos;** Buzy Bee, Saturday Morning Workout, Chasers...
MD.32 **STE Demo;** 400 colour version of Amiga BOING! Movie ST; Animation.
MD.35* **Aliens;** digitised sound and pictures from this Sci-Fi classic!
MD.38 **Probe;** Animation of voyager style space probe spinning in space.
MD.42 **When Harry Met Sally;** Funny bit from film where Sally demonstrates..
MD.43 **Star Trek;** Good sample of the opening sequence from the TV series.
MD.48e **Jungle demo;** Cartoon style film with sampled music and sound effects!
MD.47 **Police Squad;** Sampled opening sequence of this great series! (MB)
MD.50 **So Watt;** Care Bears do it again!
MD.51 **Dark Side of the Spoon;** Superb collection of stunning demos!
MD.52 **Robomix Demo;** Digitised film clips, - sampled speech, sound effects.
MD.53 **Chad Jackson;** Hear the drummer get wicked; sampled sound demo!
MD.54 **Full Metal Jacket;** I Wanna be your drill instructor - film music.
MD.55 **The Run;** Superb Car chase sequence ported from the Amiga.
MD.56 **Valley Girl;** Digitised sample of amusing Frank Zappa song.
MD.57 **INXS Demo;** Need you tonight!
MD.58* **Walker;** Classic Amiga animation featuring Star Wars Walker & computer.
MD.59* **Walker 2;** Amiga conversion, the Walker battles with a helicopter!
MD.60 **Skid Row by Alliance;** Superb

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case first. Most solicitors operate the Law Society "Fixed Interview Scheme" under which, for a fixed fee of £5, they discuss the matter with you and advise whether it is worth pursuing as a matter of law. Many solicitors do not even collect the fiver. Alternatively, most Citizen's Advice Bureaux have a legal advice evening at regular intervals which is attended by a solicitor who will give free advice.

Do not be put off by the talk of Courts and the legal jargon. The procedure is fairly simple. County Court staff are helpful and have a battery of leaflets which explain each stage.

stf: *Thanks very much for your letter. The legal system frightens many people to the point that they simply give up when they can't get the kind of service they should expect. Anything to encourage people to pursue their legal rights is certainly a good thing.*

REVIEWER GETS THE CHOP!

Ed Ricketts has obviously not played *Jimmy White's Whirlwind Snooker* or he would not have said in the Classic Games feature in *STF* 31 that the sound effects are no good. They are some of the best in any ST game. He also somehow managed to leave out *Captive* and *Legend of Faerghail* from the Adventure section.

Also, on page 18 of issue 31 you say that the Amiga is slower than the ST – not true. They share the same 8MHz processor but the Amiga has loads of auxiliary chips and co-processors to speed it up even more. And it only flickers in its full-colour, higher-than-ST-high-res if you've got a monitor which can't cope with the resolution.

(Griff?) Rhys Jones, Bedfordshire.

stf: *I asked Ed to comment on these points. His reply: "Yes, some of the sound effects in* Whirlwind Snooker *are very good, but how often do you hear snooker balls pop when they land in a pocket in real life? As for the adventure section, I doubtless left out many other people's favourite games, but with only space for five games this couldn't be helped. You can't please everyone..."*

That games machine is slower than the ST. STs run at the full clock rate of 8MHz, but the Amiga can only manage 7.2MHz. Even with its extra co-processors and suchlike, some games still turn out faster on the ST – like Jimmy White's Whirlwind Snooker.

As for your point about the resolutions, the Amiga can only run in its 640 x 256 or 640 x 512 (16 colour) mode with an expensive non-standard monitor which the majority of Amiga owners don't possess. On the ST, all three resolutions are available on one monitor if you simply use a mono emulator. After careful consideration, I decided not to put Ed on a donkey and banish him to Iraq – but it was a tough choice!

COPYING NIGHTMARE

Why do you tell your readers that to back up their Cover Disk they must do it the hard way – that is, copy every file individually? With the number of files on your Cover Disk, copying in this fashion might encourage new readers not to bother and use the Cover Disk whenever they wanted to use a program.

I don't want to be a smartass but you have a very good PD section and I recall that you mentioned *Fastcopy 3* from the ST Club in your opening pages. Why not tell readers that *Fastcopy* does the job quickly and efficently, formatting and writing to the destination disk in one operation, giving you a perfect copy of the Cover Disk. Or you could use the RAMdisk provided on Cover Disk 31. Do we really need the ST equivalent of a cold shower?

Johann Chapman, Dorset

stf: *It's always our aim to make certain that you don't lose any of the contents of our Cover Disk and to make the disk easier to use. As proof of this, we've now abandoned the dual format so that people aren't confused by the SIDE_2 folder on the disk.*

Because the Cover Disk is formatted in a special way to accommodate more information, you cannot use the ST's short-cut disk copying process – instead you need to copy each file in turn. The reason we don't recommend Fastcopy *for this purpose is because it can be used to copy games with an inadequate copy protection system – and we all know that piracy is illegal. However, we're in the process of commissioning a special copying program which can be used to copy the contents of the Cover Disk and nothing else.*

NOT SO USELESS FMs

From Neal O'nions, Compo Software, Huntingdon

M Radford (*STF* 31) should have no fear of the serious software houses deserting the STFM. Technically there is so little difference between the FM and E, so far as serious applications are concerned, that no software house would want to ignore those 500,000-plus FMs sold in the UK for many years to come. Remember the FM really isn't significantly different inside to a Mega, and there is no question of us giving up support for all those Megas either.

In fact, there are distinct advantages in having a regular FM – the fact that you can use the remarkable *Autoswitch Overscan* from System Solutions for one. Also, a number of turbo boards fit more easily or in some cases fit *only* in FMs and Megas. My firm Compo for one will certainly be supporting the FM for many years to come.

stf: *Glad to hear it, Neal. It's mainly the games publishers who develop for the STE because it's only these people who can make use of its extra features.*

TRANS-ATLANTIC ACCOUNTING

Can you give me the name and address of the people who are selling *Home Accounts 2*? Do you know if anyone is distributing it in Canada?

Brian Smith, Calgary, Canada

stf: *Digita are the publishers behind this FORMAT Gold winning accounting package. Give them a call on ☎ 0395 270273 or write to them at Digita, Black Horse House, Exmouth, Devon. EX8 1JL. They don't have any distributors operating in Canada.* ***stf***

● Don't miss next month's *STF* – it's yet another two-disk issue! Want to tell us what you think of these specials, or get something off your chest? Write to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW. Keep your letter brief and to the point.

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- *Graphics Resolution: 240×144dpi*
- *Epson and IBM Emulation*
- *Optional Auto Sheet Feeder Unit*
- *FREE Silica Printer Starter Kit*

RRP: £199
STARTER KIT £25
TOTAL RRP: £224
SAVING: £85
SILICA PRICE: £139
£139
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240 CPS 136 COLUMN

- *Seikosha SP-2415 - 9 pin - 136 col*
- *300cps SD, 240cps Draft, 50cps NLQ*
- *17.5K Printer Buffer + 5 Fonts*
- *Parallel and Serial Interfaces*
- *Graphics Resolution: 240×144dpi*
- *Epson and IBM Emulation*
- *Superior Paper Handling*
- *FREE Silica Printer Starter Kit*

RRP: £320
STARTER KIT £25
TOTAL RRP: £345
SAVING: £136
SILICA PRICE: £209
£209
+VAT=£245.58 ref: PRI 8215

24-PIN PRINTERS

240 CPS 80 COLUMN

- *Seikosha SL-92 - 24 pin - 80 col*
- *240cps Draft, 80cps LQ*
- *44K Printer Buffer + 2 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson Emulation*
- *Optional Font ROM - 7 Fonts*
- *FREE Silica Printer Starter Kit*

RRP: £335
STARTER KIT £25
TOTAL RRP: £360
SAVING: £171
SILICA PRICE: £189
£189
+VAT=£222.08 ref: PRI 8292

- *Includes Programmable ROM Card*

324 CPS 80 COLUMN

- *Seikosha SL-210 - 24 pin - 80 col*
- *324cps Draft, 108cps LQ*
- *5K Printer Buffer + 9 Fonts*
- *Parallel and Serial Interfaces*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
- *Optional Auto Sheet Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £399
STARTER KIT £25
TOTAL RRP: £424
SAVING: £255
SILICA PRICE: £369
£369
+VAT=£433.58 ref: PRI 8321

- *Handles 1+2 Multipart Forms*
- *Rechargeable Battery Pack Optional*

144 CPS 80 COLUMN

- *Seikosha LT-20 - 24 pin - 80 col*
- *180cps SD, 144cps Draft, 60cps LQ*
- *1K Printer Buffer + 9 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×180dpi*
- *IBM Emulation*
- *Built-in 50 Sheet Auto Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £299
STARTER KIT £25
TOTAL RRP: £324
SAVING: £75
SILICA PRICE: £249
£249
+VAT=£292.58 ref: PRI 8820

BUSINESS PRINTERS (WIDE-BODY)

- *Includes Programmable ROM Card*

277 CPS 136 COLUMN

- *Seikosha SL-230 - 24 pin - 136 col*
- *277cps Draft, 92cps LQ*
- *5K Printer Buffer + 9 Fonts*
- *Parallel and Serial Interfaces*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
- *Optional Auto Sheet Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £699
STARTER KIT £25
TOTAL RRP: £724
SAVING: £275
SILICA PRICE: £449
£449
+VAT=£527.58 ref: PRI 8423

462 CPS 136 COLUMN

- *Seikosha BP-5500 - 8 pin - 136 col*
- *462cps Draft, 106cps NLQ*
- *18K Printer Buffer*
- *Parallel and Serial Interfaces*
- *Graphics Resolution: 240×144dpi*
- *Epson and IBM Emulation*
- *Optional Auto Sheet Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £1299
STARTER KIT £25
TOTAL RRP: £1324
SAVING: £325
SILICA PRICE: £999
£999
+VAT=£1173.83 ref: PRI 8755

- *Low Form Tear-off*

520 CPS 136 COLUMN

- *Seikosha BP-5780 - 18 pin - 136 col*
- *780cps SD, 520cps Draft, 130cps NLQ*
- *20K Printer Buffer + 2 Fonts*
- *Parallel and Serial Interfaces*
- *Graphics Resolution: 240×240dpi*
- *Epson and IBM Emulation*
- *Handles 1+6 Multipart Forms*
- *FREE Silica Printer Starter Kit*

RRP: £1699
STARTER KIT £25
TOTAL RRP: £1724
SAVING: £325
SILICA PRICE: £1399
£1399
+VAT=£1643.83 ref: PRI 8760

800 CPS 136 COLUMN

- *Seikosha SBP-10 - 18 pin - 136 col*
- *800cps Draft, 200cps NLQ*
- *64K Printer Buffer + 2 Fonts*
- *Parallel and Serial Interfaces*
- *Graphics Resolution: 240×240dpi*
- *Epson and IBM Emulation*
- *Built-in Cut Sheet Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £2999
STARTER KIT £25
TOTAL RRP: £3024
SAVING: £525
SILICA PRICE: £2499
£2499
+VAT=£2936.33 ref: PRI 8810

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Every Seikosha printer from Silica, comes with the Silica Printer Starter Kit, worth £29.38 (£25 +VAT), completely FREE OF CHARGE. It includes all you need to get up and running with your new printer.

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- ***1.8 Metre Parallel Printer Cable***
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- ***5 Continuous Envelopes on Tractor Feed***

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Which computer(s), if any, do you own? 58D

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

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Imagine! A five pound note *free* with next month's issue! Yes, you can imagine whatever you like – this is the...

Twilight zone

Free fivers with next month's issue

Er, maybe not – but it made you read this, didn't it? Instead of free fivers, we're giving you something much better – an issue packed with unbeatable goodies! Now isn't that preferable?

Next month's cover feature is an in-depth guide to drawing. Bill Croan, one of our regular Gallery contributors, was recently approached by the team writing *Elivira 2* to design the graphics for that adventure game. In next month's issue he'll be using his vast knowledge of ST art packages to guide you through the complex process of creating pictures. He'll be looking at three different styles of picture and discussing such things as how to make faces and other human details appear realistic, how to select a colour palette and ways to vary the palette so you can create effects like a change from day to night.

If Atari keep their word, we'll have an ST Book for review. This new portable ST is set to revolutionise the music industry and keep the ST at the forefront of computer technology... Well, that's what they say in the press releases anyway.

Then there's our feature on retouching pictures. If you ever wanted to create startlingly realistic piccies, now's your chance. There's a variety of retouching packages available, all geared towards making the most of any image you've got. Next month we pick the best of the bunch and show you what you can do.

You may have noticed the start of a mini reviews section in this month's issue of *ST FORMAT*. Next month we're expanding this idea still further and giving over more space to reviews of the latest non-games software. We're also taking a look at *Le Rédacteur*, a brand new word processor from – yep, you guessed it – France.

On the games front we should get Ocean's *Epic* in for review. If you promise not to laugh, Microprose might even have *Grand Prix* for review. This pre-Christmas release has been delayed because the programmer's wife got run over by a bus (or something similar) – but she's better now. We'll also have another 15 pages of ST Answers tips and advice for you – provided we can find the room to cram it all in.

So there you have it. What better reason could you have to crawl out of bed on Thursday 9 April? Get down to your newsagent and make sure you don't miss your copy! Use the coupon below – or better still, turn to page 78 and subscribe.

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It's no surprise, but Britain's top ST magazine is regularly selling out – in some places, before you even get in the newsagent's door on the official on-sale date.

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Still no luck? Then call Kate Elston on ☎ 0225 442244, tell her which of Future's magazines you're after and where you've tried to get hold of it, and she'll sort it all out!

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HOW NOT TO BUY AN ST – NUMBER 6: THE HIGH STREET ELECTRICAL CHAIN STORE

The Assistant is reading a copy of Viz behind his desk. Enter the Customer.

Customer: Morning.

Assistant: Eh?

Customer: Good morning.

Assistant: Oh yeah. Mornin'.

Customer: Um, I'd like to buy an Atari ST, please.

Assistant: Ooh, no, sorry, we don't sell them, sir.

Customer: Er – but what's that over there? *(Points to the display of Discovery Xtra boxes in the window)*

Assistant: Ah, yes. Well, we do seem to have a few left. Just one, was it?

Customer: Yes. Could you tell me how much memory this model has, please? I don't know very much about computers.

Assistant: Oh, er, probably around 20. Or 30 at most. You won't need more than 15. Or 200. Oh hang on, it's written here. "512K." There you are – 512 and one K. You definitely don't need the K – that's just for the American market.

Customer: So could I run a program called *PageStream 2* on here?

Assistant: Ah, well, you'll need an extra power supply for that. And, um, one of these. *(Indicates small black box)*

Customer: What is it?

Assistant: Well, it, er, plugs into the side of ET...

Customer: ST.

Assistant: ST. That's what I said. You plug it in and it makes it much better.

Customer: How?

Assistant: Ah, now that's a bit technical, you see, sir. Basically it upgrades the, er, ROOM memory to bring it into line with EC standards.

Customer: So how much is that?

Assistant: £499.99, including VAT.

Customer: That's a bit steep, isn't it? Are you sure I need it?

Assistant: Oh yes. And this, too. *(Points to woolly hat)*

Customer: What? What on earth do I need that for?

Assistant: That's so you can plug your FT –

Customer: *ST*. It's an *ST*.

Assistant: – your ST into your television. Without this, you won't be able to play any games at all.

Customer: And that costs...?

Assistant: £29.99. It's on special this week.

Customer: Goodbye.

Assistant: Are you leaving?

Customer: Yep.

Assistant: Decided against the ST, eh?

Customer: No. I'm leaving because you don't have a clue what you're on about.

Assistant: You couldn't be more wrong. I've been trained, y'know... *(Trails away as customer storms out the door)* Good. It would have taken me ages to wrap that lot up.

(With apologies to Fry and Laurie)

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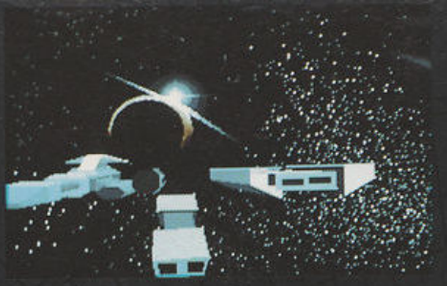

"Anyone who has been keeping an eye out for this will not be disappointed, and should await its release with bated breath...Epic is one of the best products I have ever played - the depth of gameplay and graphics are of a truly stunning standard."
GAMES X

EPIC

"Fast just isn't the word for this 3D. The image update is blistering!"
ACE

"The game's graphics and presentation are nothing short of stunning, and there's a great wad of playability in there too. Ocean have never had it so good!"
ST ACTION

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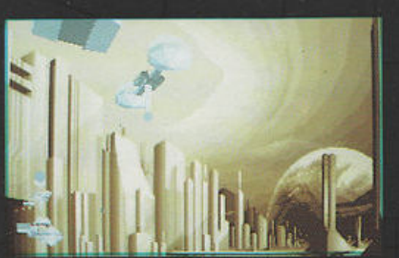

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