THE WORLD'S BIGGEST SELLING ST MAGAZINE

ISSUE 66 ■ JANUARY 1995 ■ £3.75

ST FORMAT

ST FIRST AID COURSE
Vital tips that could save your ST

FITTING A DESKTOPPER
Exhaustive step by step photoguide

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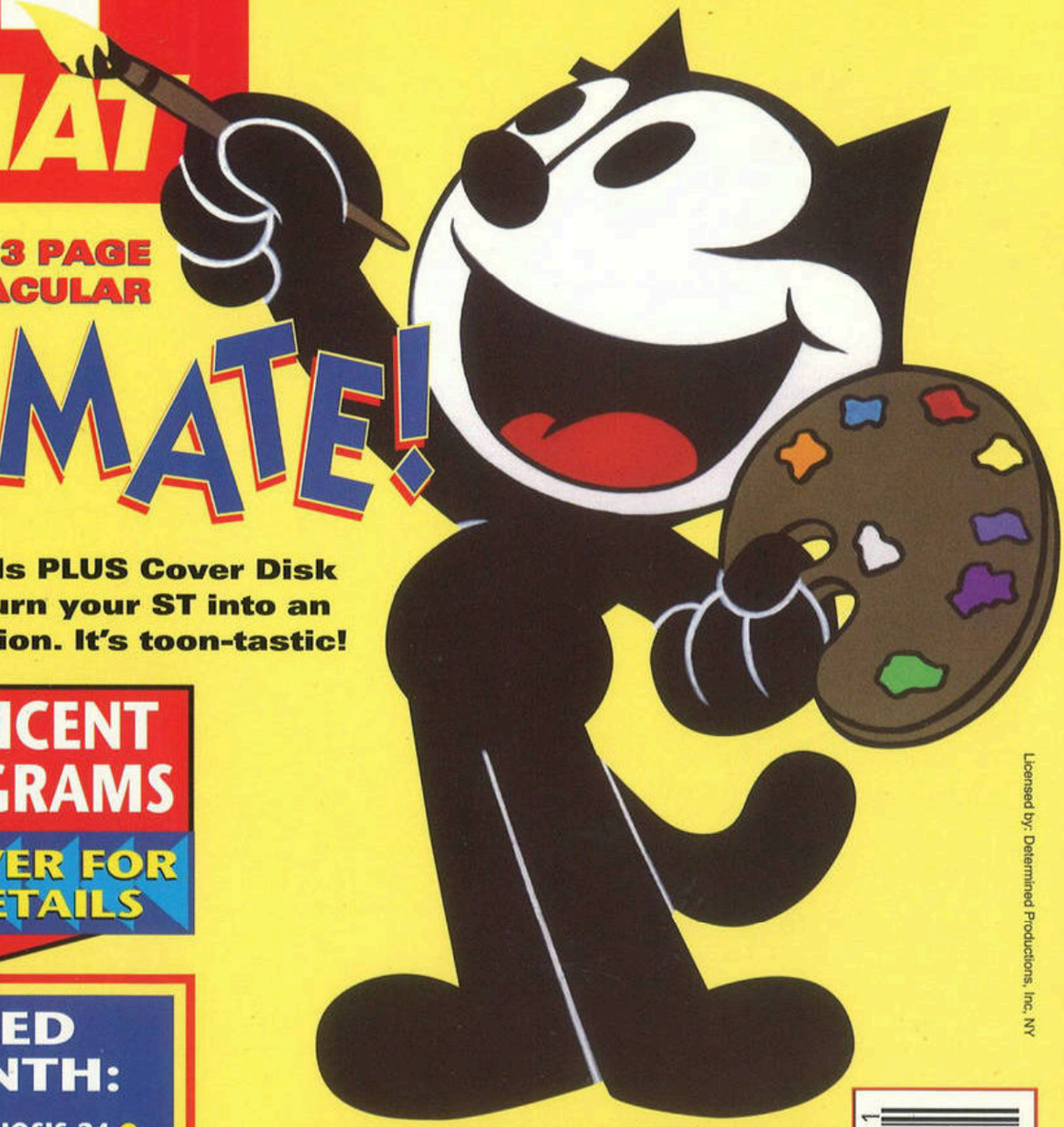
Seven pages of BASIC, PASCAL, 68000...



MASSIVE 13 PAGE SPECTACULAR

ANIMATE!

Top tips and tutorials PLUS Cover Disk software that will turn your ST into an animation workstation. It's toon-tastic!

9 MAGNIFICENT ST PROGRAMS

SEE BACK COVER FOR FULL DISK DETAILS

REVIEWED THIS MONTH:

ZERO-5 ● METAMORPHOSIS 24 ● VIEW 2 ● STELLAR MODULE COLLECTION 11 ● THEIR FINEST MISSIONS: BATTLE OF BRITAIN ● KOZMIC 4 ● X-DEBUG 1.01 ● SCOREWRITER ● ULTIMATE STE MEGADEMO ● ROUTE FINDER 2.0 ● VIOLENT DEATH ● FRANTICK ● CLUB CULTURE MIX PACK 2 ● ART FOR KIDS ● FLY OVER FANTASY ● AWARD MAKER PLUS ● ZUFFERS...

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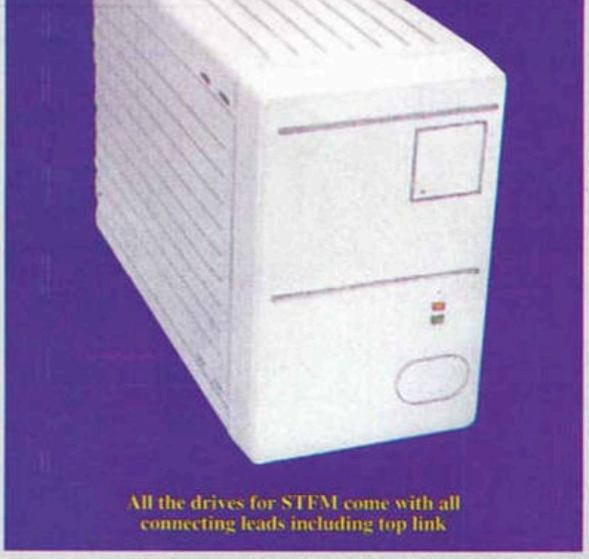

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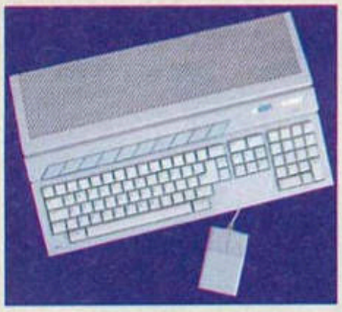

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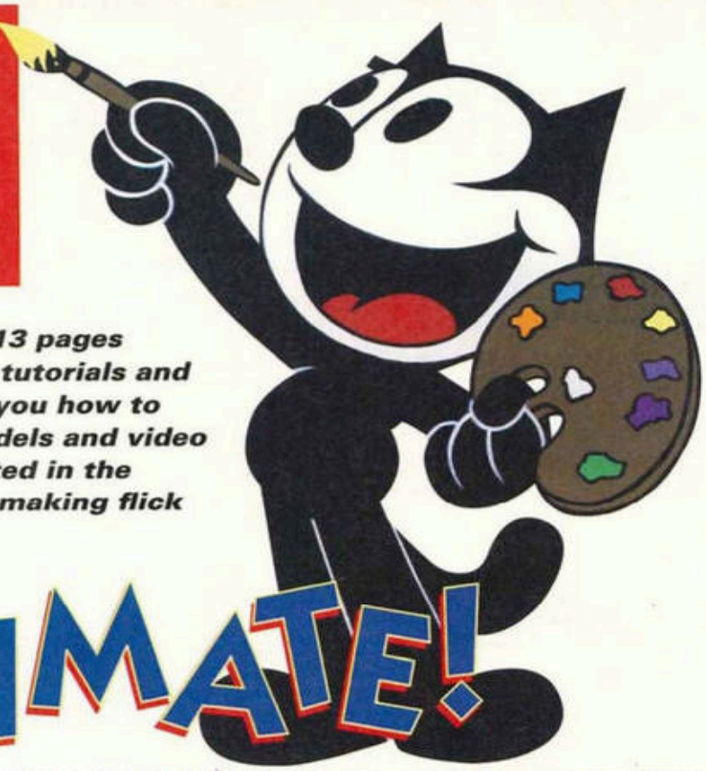
ST FORMAT

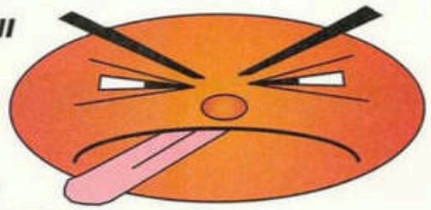


Get your ST animated! 13 pages crammed with top tips, tutorials and walkthroughs showing you how to create cartoons, 3D models and video animations. To get started in the world of desktop moviemaking flick straight to page 14.

ANIMATE!

ST First Aid

Your ST is delicate piece of high-tech kit and just one accident can spell disaster and big bills. Discover how to keep your ST healthy with our ST First Aid course, page 67.



Share and Enjoy

Software pirates are ripping off both shareware authors and you! Frank Charlton investigates the shocking extent of shareware theft and piracy on page 74. Read it and get all heated.

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83 WHAT A LONG STRANGE YEAR IT'S BEEN
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"The doctor will see you now." Clive Parker cures all your ST ills. The prescription's on page 50.

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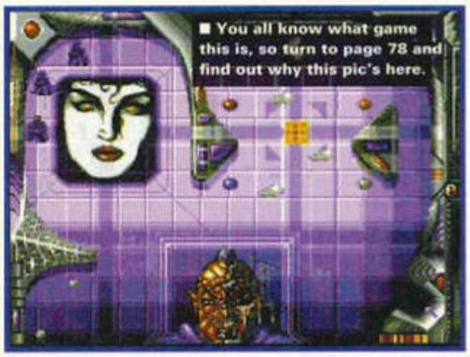

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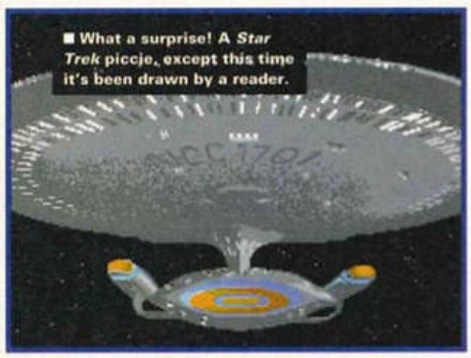
The end is nigh! About .23mm nigh to be precise *(what? – everyone else)*. Your last ST stop before the back cover. Fill up with all those odd ST thangs now.



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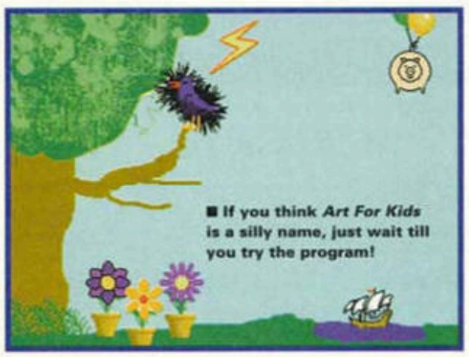

37 ART FOR KIDS
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48 ZERO-5
Simply stunning! A space opera with slick graphics, stunning 3D, brilliant effects and stacks of gameplay too. How impressive? That impressive.

COVER DISK 66

THIS MONTH...

STARDUST: Our playable demo of one level from Bloodhouse's stunning STE/ Falcon shoot-'em-up. **Size: 228K**

ENDURANCE: Virtual reality on your ST, whatever its memory and whatever its configuration. **Uncompressed size: 319K**

ROUTE FINDER 2.0: Plan those important car journeys so you never get lost again. **Uncompressed size: 299K**

CALENDAR V1: Do lots of silly and, yes, completely useless things with dates. **Uncompressed size: 250K**

WORDFIND: The wordsearch game that works on all STs, blitter or otherwise. High resolution, or use *Sebra* (see below). **Uncompressed size: 59K**

ST DISK CAT 5.2B: Read your disks and catalogue them automatically with this essential utility. **Uncompressed size: 182K**

ANIMATE 4: Load up your images and play animated sequences. With two example files. **Uncompressed size: 154K**

SEBRA V1.33: You'll need this to run *Wordfind* if you only have a colour monitor or TV. **Uncompressed Size: 24K**

DISK KIT: A Desk Accessory created for the Cover Disk by the inimitable Clive Parker. Manipulate your disks like never before. **Uncompressed size: 26K**

MENU: Even your granny could use this program, in between eating all the mince pies this Christmas. Then load up *Stardust* and watch her go! **Size: 10K**

BACKUP: Prevent tears this Yuletide by making sure your Cover Disk is securely backed up before use. **Size: 13K**

Paper controller Fiona 'Tinkerbell' Deane
The Lost Boys Simon Chittenden; Mark Glover; Jon Moore; Chris Stocker; Simon Windsor; Jason Titley; Ollie 'Jnr' Gibbs
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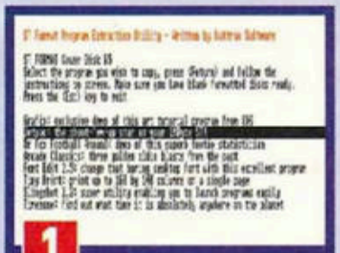
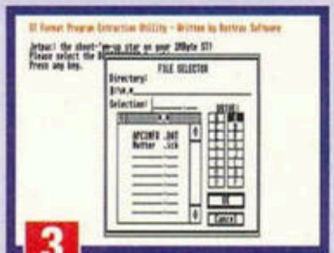
COVER DISK

GET STARTED WITH THE *ST FORMAT MENU* PROGRAM



1 Put the Cover Disk in drive A, and double-click on the STF 66.PRG icon. Once the *ST FORMAT* logo appears, press any key and you're faced with an Options screen not unlike this one.

2 Once you've made your selection, you're faced with your file selector. Select drive B (TOS 1.02 owners should click on A:\ and replace it by typing B:\ before clicking on the Close Box icon).



3 If you have a single drive you'll be asked to insert disk B (your blank disk) into Drive A. Do so, and once your file selector displays the information concerning Drive B, click on OK to proceed.

ENDURANCE

BY: Ozzy Omara
MACHINES: All STs (Falcon-compatible via *Backwards*)
MEMORY NEEDED: 512K
RESOLUTION: Low
UNCOMPRESSD SIZE: 319K
GET STARTED: Double-click on BRIEF for all the details you need. It's auto-booting so don't try to run *Endurance* from the Desktop after decompacting

***Endurance* scored a massive** 90% when it was reviewed back in issue 57. It's one of those virtual reality adventures, is written using Domark's *3D Construction Kit* and runs incredibly smoothly. It'll work on all STs, but has the added bonus of running faster on machines with more RAM, as well as the STE or Falcon. Falcon owners will need a copy of *Backwards* to run *Endurance*, which is available from all good PD libraries.

The aim of the game is simple: it's 2500AD and you're up for promotion. Sounds rather spiffing doesn't it? Unfortunately, the motto for the Galactic Federation is 'make the grade or die'. Your task in *Endurance* doesn't involve saving the universe or anything mundane like that. Oh no, there's a new Hyperspace Route going through your sector and unfortunately a few planets and moons have got in the way, including one that has been assigned to you for destruction. You must first find and disarm the Harpey Detonator, then deactivate the missiles from the planet's surface. Once done all you then need to do is get off the planet before it explodes and be home for tea time, or else there'll be hell to pay from your mum.

Claustrophobic?

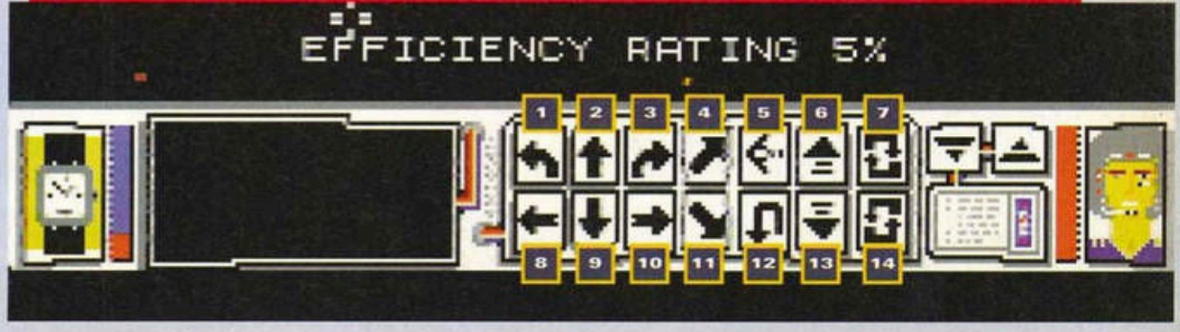
You start the game trapped inside what must be your quarters on the orbiting space station. First priority: get out of the room. You interact with your enviroment using the mouse and icons, which are displayed at the top and bottom of the

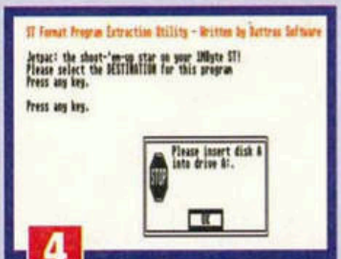
What does what?

You'd be forgiven for finding *Endurance* a little daunting at first. Have no fear! Here's the definitive *ST FORMAT* guide to what those icons mean and do. When rummaging through your rucksack looking for an object, use the movement controls to poke around inside before clicking on its associated triangle to highlight it ready for action.

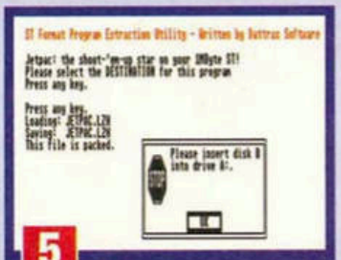
Moving around *Endurance*

1	Rotate your position left	6	Rise	11	Look downwards
2	Move ahead	7	Rotate your view anticlockwise	12	Turn around 180 degrees
3	Rotate your position right	8	Sidestep left	13	Drop
4	Look upwards	9	Move back	14	Rotate your view clockwise
5	Look ahead	10	Sidestep right		

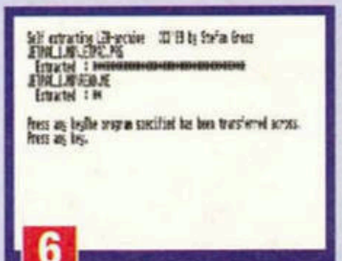




4 Once you've clicked on OK, you'll be faced with another dialog box telling you to insert disk A (your Cover Disk) into the disk drive. Do so before clicking on OK to start transferring the program.



5 The relevant files will be loaded into memory before you're told to insert disk B (your blank disk) into the disk drive. Do so, and click on OK to start saving the files to your blank disk.



6 If the file is compressed, you will be told that the files are unpacking (see above). Once done, you will be told of the successful file transfer and you are returned to the Menu screen. Press <Esc> to quit.

Don't forget

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

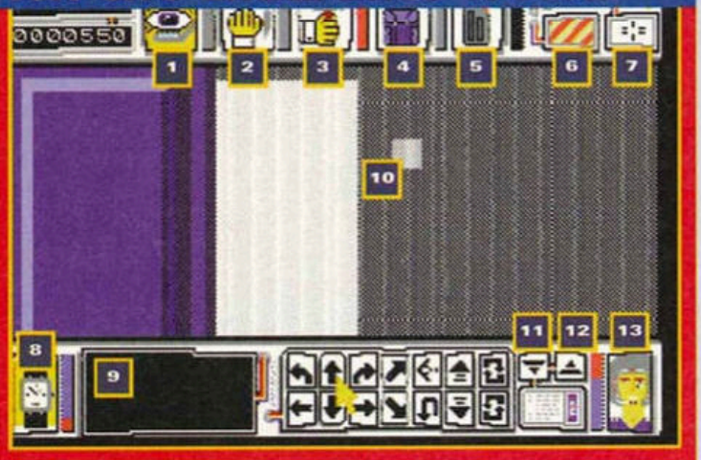
Make a backup using the *Backup* program on the Disk. NEVER ever run software directly from the Cover Disk except *Backup*.

Many Cover Disk programs are compressed to fit them on the Disk. Use the *Menu* program to copy and extract them to your blank disks. Step-by-step instructions are given just to the left.

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

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

Interacting with the *Endurance* world



1. Read or validate
2. Take objects for rucksack, take and eat food
3. Open doors, move or activate objects
4. Rucksack icon for using objects.
5. Ammo icon (for when you find the ammo)
6. Resets game (also <Esc>)
7. Switches Crosshairs on or off
8. Tells you how long you have left
9. Monitor: works with Eye icon
10. Your 3D view of *Endurance*.
11. Save file
12. Load file
13. Personnel icon: monitor health status and mapping

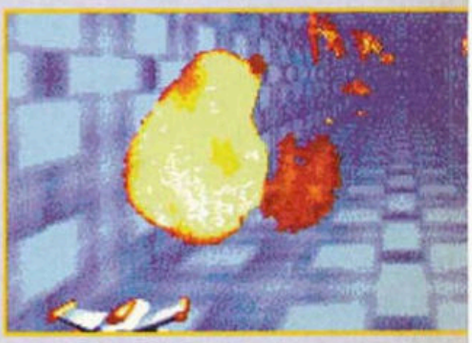
screen (see the panels above and to the left for more details). When you wish to pick up, move or just find out about an object, click on it with the right mouse button to achieve the desired effect. To succeed you're going to have to search the base extensively to solve all the puzzles before time runs out and you die. It's shareware, so if you like it you know the brief.

■ The first thing you need to do in *Endurance* is get out of your cabin. Here's a tip: think of the tooth fairy.

STARDUST

BY: Bloodhouse/Daze
MACHINES: STEs and Falcons
MEMORY NEEDED: 1MByte
RESOLUTION: Low
SIZE: 228K
GET STARTED: Double-click on TUNNEL.PRG

Ye gods! If *Stardust* is proof of what the STE is graphically capable of then someone should be taking software producers to court for criminally ignoring its talents. In this exclusive demo you get to play the tunnel sequence, one of the subgames from *Stardust* itself. Your fighter craft, bearing slightly more than a passing resemblance to a well-known ship from the *Star Wars* series, hurtles down a tunnel at incredible speeds, while aiming to avoid or destroy the various polygon-shaped hazards that are bearing down on you.



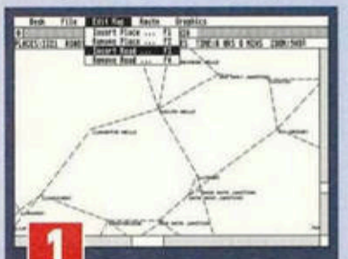
■ If you like the idea of hurtling at massive speed towards almost certain death then *Stardust* is for you...

It's not that easy, but because you have infinite lives you can marvel at all the explosions (largely the result of your spacecraft blowing up) and speed of it all. The graphics are arcade-quality and make a mockery of those who no longer see the STE as a serious games platform. So if you have an STE or Falcon you can laugh hysterically while you weave your joystick erratically, without consideration for your fellow man, reducing everything around you (including yourself) to atoms. *Stardust* costs £24.99, so if you like what you see call Daze on ☎ 0171 372 7435. Alternatively wait for the definitive *STF* review when the game gets its full release next month.

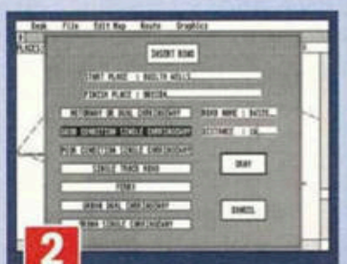
■ ...if you don't however, perhaps a nice cup of tea and early night would be more suited to your fragile disposition.

LOCAL TALK

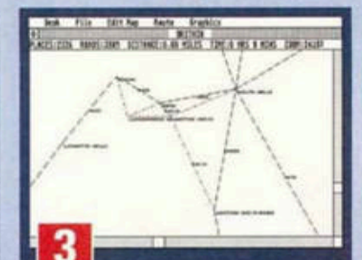
One of Route Finder's features enables you to improve the detail in areas of the map that you're particularly interested in. Wales, for example. Here's how to go about it.



1 Zoom into the part of the country where you wish to make your changes. To do this, you just hold down the left mouse button while dragging the mouse over the area that you're going to amend. You'll have to do this a couple of times to get to the desired magnification, but when you do you should see something rather like that shown here.



2 If you're inserting a place on a road between two others, you must remove the road between the two places first (press <F2>). Then click on the map where you want your new place to go. Once all its details have been entered you can then link it up to the other two places by inserting the details about the roads that connect it to other local places.



3 It's a fiddly process, so make sure you save it regularly (select 'Save' or 'Save as' from the File menu). Keep inserting places and roads as demonstrated in the second column and you'll soon have a network of roads like the one shown above. This is only half complete, but you can already see how detailed your map can look with a few additions.

ROUTE FINDER 2.0

BY: Brian Henderson
MACHINES: All STs, TTs, Falcons
MEMORY NEEDED: 1MByte
RESOLUTION: Medium/High
UNCOMPRESSED SIZE: 320K
GET STARTED: Double-click on FINDER20.PRG.

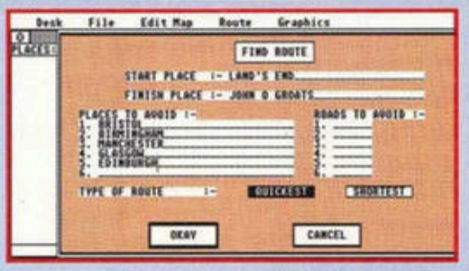
Scoring an impressive 86% in the PD section this month is *Route Finder 2.0*. If you're after a program that enables you to plan your road journeys in advance then this is the one for you.

Just enter the name of the places you're travelling between, select any roads or towns you'd rather avoid, and the program calculates the shortest or quickest route you can take, depending on your preference. It displays it as text or in the form of a graphical map highlighting the route you're to take. If the database doesn't include your obscure village you can even enter new places and roads with the minimum of fuss – see the walkthrough above.

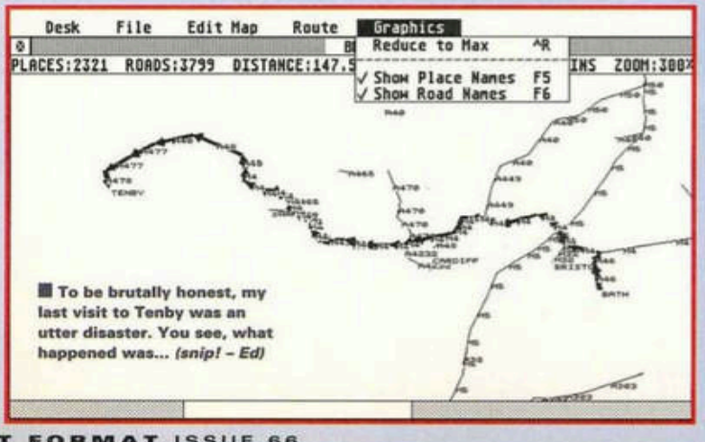
Wales... and sheep

And just what is the advantage of being able to add your own obscure villages? Take this example: the only way to get to Llanwrtyd Wells according to *Route Finder* is via Sennybridge and Llandovery, a distance of 31 miles. With the additions highlighted below you can get there in 25 miles. You've also tailored the programs to your individual local needs. Now all you need to do is spend a few sleepless weeks inserting every single milestone from your road atlas into the program and you've won the 'Sad Fool of 1994' Award, pipping Nick to the coveted title at the very death.

Registering costs just £10, and is well worth the expense. You will find the shareware restrictions (the highly annoying 15 second delay and limit of 200 miles on routes) lifted, plus you receive version 2.1 which has many new features, including a better defined graphical map, with the ability to zoom in and out of it to your heart's content. If you're particularly keen on zooming in and out of maps, that is.



■ **Unfortunately you can't find routes of anything greater than 200 miles in the shareware version of *Route Finder*, but if you register, however...**

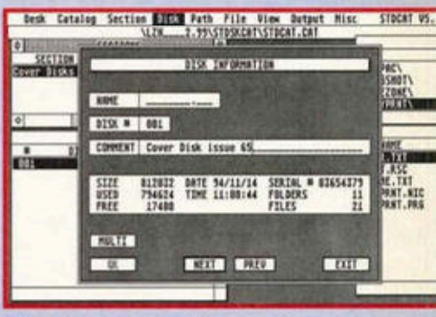


■ **To be brutally honest, my last visit to Tenby was an utter disaster. You see, what happened was... *(snip! – Ed)***

ST DISK CAT V5.2B

BY: Bob Silliker
MACHINES: All STs
MEMORY NEEDED: 512K
RESOLUTION: Medium/High
UNCOMPRESSED SIZE: 182K
GET STARTED: Double-click on STDCAT52.PRG after dearchiving the program using *Menu*.

Originally featured in issue 15, the latest version of the ultimate disk cataloguer is yours to try (it's shareware). Keeping tabs on all your disks has never been so easy – the program just reads each disk and catalogues it automatically. Read through STDCAT52.DOC for full details.



■ **Keeping tabs on what's on which Cover Disk is easier than it's ever been now that you've got *ST Disk Cat 5.2b* to handle it all for you. Super.**

Personal Pascal troubles?

Two months ago, on Cover Disk 64b to be precise, we gave away *Personal Pascal*. Now if you've been following our tutorial series, you may have experienced problems with the PASLIB file, which prevent you from compiling programs. To avoid this you need to format your *Personal Pascal* disk to 80 sectors and 10 tracks, because a normal 720K disk is not always big enough to decompact the files on to. You can use *DosAcc* from Cover Disk 64a to format your disk to the required size (select Extended Format) – that should solve the problem. Or, even easier, use *Disk Kit* (next page). Clever, eh?

ANIMATE 4

BY: Tom Hudson
MACHINES: All STs
MEMORY NEEDED: 512K
RESOLUTION: Low/Medium
UNCOMPRESSED SIZE: 154K
GET STARTED: Once decompacted, double-click on ANIMATE.PRG to run the program, then click on the .SEQ button when you reach the file selector to access the two sample files, BUZZBEE.SEQ and CUBE1.SEQ

■ **This, believe it or not, is a bee, and it's on this month's Cover Disk. So try not to get stung, okay?**

***Animate 4* is a file sequence** player that enables you to play SEQ and DI? files created using the *Cyber* family of programs (such as *Cyber Studio, Cyber Control* and *Cyber Paint).* Once you've got the program up and running, read our enormous animation feature beginning on page 14 before deciding that in fact you can do better. And if you can, why not send in your efforts to the Cover Disk address? You never know, we might just bung it on a future Disk!

WORDFIND

BY: Derek Johnston
MACHINES: All STs
MEMORY NEEDED: 512K
RESOLUTION: High
UNCOMPRESSED SIZE: 59K
GET STARTED: Once you've dearchived *Sebra* and *Wordfind* to your blank disk using *Menu*, re-boot your ST and double-click on WORDFIND.PRG (in the WORDFIND folder)

At last! A wordsearch program that runs on all STs, regardless of blitters or memory. Because it only runs in high resolution we've included *Sebra*, the monochrome emulator, to enable you to run it even if you have a colour display.

It's easy to use – just enter your words and the size of the grid and the program randomly places them for you. Then enter a string of text to fill up the other spaces and, before you know it, you have your own wordsearch. You can print it or solve it on screen – click on the letters of each word as it is highlighted to eliminate all the words until the puzzle is complete.

It's the kind of program that'll appeal to all the family. If you like it and fancy the possibility of a colour version – why don't you just go ahead and register for the measly sum of £5? Read WORDFIND.DOC for full details and instructions.

■ **You'll be glad to know that this particular wordsearch is not featured on the Disk. Someone sedate this person.**

DISK KIT

BY: Clive Parker
MACHINES: All STs
MEMORY NEEDED: 512K
RESOLUTION: Any
UNCOMPRESSED SIZE: 26K
GET STARTED: Select the program from *Menu* and it's dearchived on to the root directory of your blank disk. Re-boot with the disk in your drive and *Disk Kit* is installed. Now call it up from the 'Desk' menu whenever you need it

Exploring the dark past of the man known only as Clive Parker, we came across this little GEM of a Desk Accessory. While Clive recovers in hospital, you can call it up from within any GEM program and use it to format disks, call up the file selector, rename and delete files, and create folders. When formatting a disk, you can not only make it single or double-sided (like the standard 'Format' option from the Desktop), but format it to more than 80 tracks and nine sectors, enabling you to store more data on your disks. Thanks Clive.

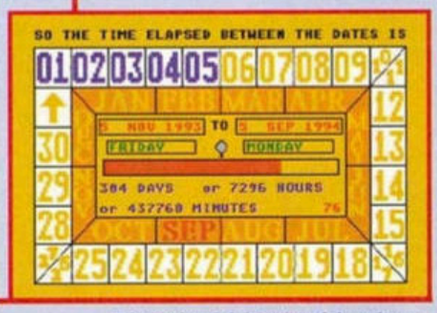
CALENDAR V1

BY: Andy Gray
MACHINES: All STs
MEMORY NEEDED: 512K (1MByte recommended)
RESOLUTION: Low
UNCOMPRESSED SIZE: 250K
GET STARTED: Double-click on CALDAR1.PRG.

This represents what Crimble presents are about – fun with just a smidgeon of practical use. It gives you information about dates – from what day of the week you were born through to how many shopping days are left until Easter. All you need to do is enter two dates – day, month and year – and the program not only tells you on which day both occurred, but also the elapsed time between the two dates, in days, hours and minutes.

For example, did you know that our Disk editor will be 8,060 days old on Christmas Day this year, which is 193,440 hours, or 11,606,400 minutes? Our wonderful production editor *(what me? – Jill)* was born on a Tuesday, while it's been a hard 1,065 days since Freddie Mercury left this planet for something even greater than the majesty of Queen.

So go on, bore your granny with countless facts based on dates, giving her the excuse to go on about the war years until she's red in the face. Then send £5 to the author (see the CALENDAR.TXT). Okay?



■ **It's colourful, it's cheerful, and you can use to it calculate things like the length of failed relationships.**

Problems?

If you can't load, copy or back up your Cover Disk then you may have a faulty disk. Send the disk and a padded self-addressed envelope to: *ST FORMAT* December Disk Returns, PO Box 21, Daventry, NN1 5BU. We pay the return postage for you.

PLEASE DON'T send faulty disks to our Bath or Somerton offices. We don't keep stocks of Cover Disks.

If you are having problems with a Cover Disk program, reread the instructions and any DOC files. If you still have problems, call the *ST FORMAT* Cover Disk Hotline on ☎ 01225 442244 on Wednesdays between 2pm and 6pm only.

Cover Disks are double-sided. If you have an old STFM and can't read the Cover Disk then you need to upgrade your ST to a double-sided drive.

If you have other hardware or software queries, contact the manufacturer or publisher. Or ring the official Atari Helpline on ☎ 0131 332 93233 between 6pm and 11pm Monday to Saturday and 8pm and 11pm on Sundays.

SEBRA V1.33

BY: Patrik Persson
MACHINES: All STs
MEMORY NEEDED: 512K
RESOLUTION: Low/Medium
UNCOMPRESSED SIZE: 24K
GET STARTED: *Menu* dearchives this into an Auto folder on your blank disk. Re-boot with the disk in Drive A, then install *Sebra* by merely pressing a key

***Sebra* enables you to run** monochrome-only programs on a colour display. And, surprise surprise, this month's Cover Disk *Wordfind* runs in high resolution only, so if you don't have a monochrome monitor, you can still play the game using this. What are you waiting for then? Get wordsearching (or something)!

BACKUP

BY: Brian Tilley
MACHINES: All STs
MEMORY NEEDED: 512K
RESOLUTION: Any
SIZE: 13K
GET STARTED: just opening up the BACKUP folder and double-click on CD_BACK.TOS

Why bother? Well, it can save you grief in the long run. You need a secure copy of the Cover Disk as an insurance policy if something goes wrong with your working copy. It can save you time and hassle having to return your messed up disks for replacement, and it gives us more time to work on bringing you the best ST magazine in the world. Of course, if your little darling (aged 37.5) opens his stocking and goes on to corrupt his Cover Disk before getting a chance to use any of it he's not going to be too happy, is he? And that could wreck 1995 for everyone. ***stf***

WE WANT YOUR PROGRAMS

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

Name _____

Address _____

_____

Daytime phone _____ Program title _____

_____ Total size in K _____

On a separate sheet, explain concisely what the program does and why you happen to think it's so brilliant.

Remember to: ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Keep a copy of your program, because contributions are non-returnable ■ Enclose an attractive bribe. A Queen CD perhaps ■ Not that it makes a difference

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 _____ Date _____

Merry Christmas from HiSoft

Silsoe Village Scene by Gordon Chambers, typeset by Leaside Graphics, Luton.

It's that time of year again, frosty mornings, roaring log fires, red noses ... and all those presents to buy.

We know how difficult Christmas buying decisions can be so, to make life just a little easier, we've come up with some splendid gifts for the Atari lover in your household, at bargain prices.

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PD WHILE YOU WAIT

BY SIMON FORRESTER

Datasoft PD have teamed up with the Aim Computers store in Edinburgh to bring you Britain's first in-store PD library. You'll now be able to view and test PD, and get a proper idea of exactly what you're ordering before you take it away with you. Historically, ordering PD software has always been a problem. Although most libraries are honest, clean and efficient, things always go wrong. You have to rely on the postal system, you have to trudge through disks full of tat to find the program you want, that sort of thing. But no more...

No more mail order nerves now that PD is available off the shelf.

No more ordering. No more waiting. No more mistakes, delays, corrupted disks, padding, postal charges, disappointment and no more secretly naff titles. Just a long trip to Edinburgh (unless you live there). Having said that, you can still order titles by mail – ring ☎ 0131 553 7997 for more details.

MAKING MUSIC

YAMAHA, MANUFACTURERS OF top-quality music equipment for, well, the planet really, have just announced the launch of the CBX-D5, a hard disk recorder compatible with most machines, although it's aimed largely at the Atari range.

The CBX works in the same way as a four-track recorder, and Yamaha claim that it offers CD-quality reproduction with a few extras. Using the CBX, you'll be able to mix your tracks quickly and easily, applying effects like reverb, delay and distortion without the data ever leaving the box.

Yamaha are particularly pleased with the CBX-D5 for lots of reasons. Unlike most other hard-disk recorders, the CBX is entirely stand-alone, simply using the ST for control purposes. The technical bits that do the hard work come with the CBX, taking the strain off the computer. Apart from increasing the CBX's performance, this also means that you can run it from just about any ST without any noticeable setbacks – an STFM user would get the same powerful results as a Falcon user.

Effectively, you'll be able to combine this little box with your ST and come up with a complete recording studio. You can do away with things like patch-leads, booths, desks because now your ST will be able to do it all.

Only that's a bit of a fib, really. Your ST still won't be able to walk to each mike in turn and monotonously state "1...2...testing...1..." into each just like they do at those 'gig' things. And at £1,599 the CBX ain't cheap.

But if you're seriously into your music and want more info on this new hard disk recorder then, give Yamaha a ring on ☎ 01908 366700. And they should be able to sort you out.

Trenton got all excited when he saw the Yamaha envelope. He thought it his chance to review a VMax, but it was all about the CBX and he's a worse musician than he is rider.

FALCON PINBALL

STOP PRESS: 16/32 Systems have released *Pinball Dreams* for the Falcon030. This computer pinball classic costs £24 and is available NOW! They've also secured the much delayed release of the *Llamazap*, again for £24 (or £40 with a Jaguar controller). The Falcon specific games *Steel Talons* and *Evolution Dino Dudes* are also available. For more details of these and 16/32's plans for 12 Falcon only games contact 16/32 on ☎ 01634 710788 or e-mail on nharlow@cix. More news next month.

VOICES IN MY HEAD

WE RECENTLY RECEIVED A COPY of *Voices*, a new and incredibly strange disk magazine aimed at absolutely anybody with a computer. Well, it's ST, PC, Amiga and Mac compatible, which just about covers everyone.

Dave Cobbledick, editor of this strange little tome, made the conscious decision to aim this away from the ST-only market. As he explains, "Whatever computer you own and whatever tasks you ask it to perform, if it gets you from A to B satisfactorily and the results given are what you desire then there is little more you can ask of it." Quite right too. Aiming a diskzine at the entire computing spectrum does suggest problems, which is why the disk is MS-DOS format – if you can read PC disks (and you can with an ST), you can read *Voices*. To make things even easier for you, a text-file viewer is supplied. Not that it's necessary but it's the thought that counts.

What makes *Voices* so abnormal, in case you were wondering, *(hadn't occurred to me, actually – Trent)* is that it really is a collection of voices – opinions, articles, monologues, ideas, anything really. It includes articles on everything from artificial intelligence to UFOs, which makes it worth reading for novelty value alone. Working in the world of computers, you see a lot of odd things, but this one really takes the biscuit. Dave's trawled through the Internet for the oddest imaginable concepts, and next month you get to add your own comments. You can get a copy from the Dunces Cap Software address listed above. It's worth a look for entertainment alone.

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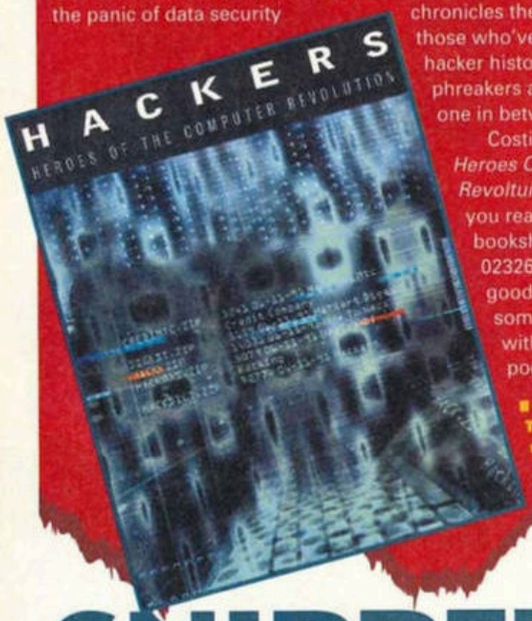
PENGUIN + AXE = ...

PENGUIN HAVE RELEASED A book by Steven Levy called *Hackers*, which should quickly re-install the panic of data security terror across the nation – cue scare stories on the Beeb about hackers and the Internet. The book chronicles the activities of all those who've earnt a place in hacker history, from hackers to phreakers and just about everyone in between.

Costing £6.99, *Hackers – Heroes Of The Computer Revoltuion* is available as you read this from all good bookshops (ISBN 0-14-023269-9). Seven quid is a good price to pay to adopt some new heroes, armed with only keyboards and pocket-protectors.



Hackers or heroes? The revenge of the nerd or the final recognition of computing as a legitimate hobby?

SNIPPETS

REPORTS OF THE DEATH OF Warpzone PDL have been greatly exaggerated – they do still exist and are still trading.

In our PD library survey (which appeared in *ST FORMAT* 64) their lack of response earned them a place in our In Memoriam panel, which wasn't right. They are still in business and can be contacted at: 53 Ropewalk, River Street, St Judes, Bristol, BS2 9EG or by phone on ☎ 0177 9412 021. Sorry about any confusion.

JAGUAR PRICES HAVE BEEN slashed at Silica shops to a mere £200! The new price of £199 marks a £30 saving from the official RRP and is achievable because of a flukey favourable movement in the Dollar/Pound exchange rate.

This price cut neatly parallels an surge in Jag sales: *Alien Vs Predator* and *Wolfenstein 3D* sold out within days. Silica have also launched a 12-page, 30-game Jaguar software catalogue. It's free and is available at any Silica branch or can be obtained by phoning ☎ 0181 3091111 and telling them who you are.

ALL DAVE COBBLEDICK BACK catalogue software, which was previously available through most PD libraries, will now only be available from Merlin, Floppyshop, Goodman, LAPD and MT PDL (see page 71 for contact details). The software, four compilation disks, is also set to become licenceware.

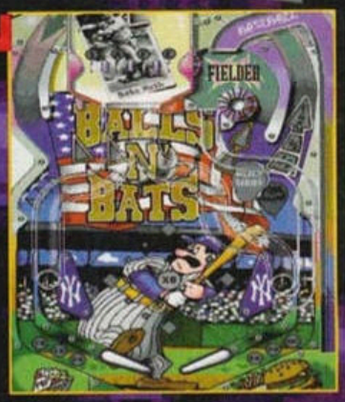
This move has been prompted by pitiful registration rates from the titles as shareware. All new Cobbledick releases will also be available as full commercial programs direct from Dunce's Cap Software at: 245 Rosalind, Street, Ashington, Northumberland NE63 9AZ. For more details on the shareware crisis see our Share and Enjoy feature, which starts on page 74 and for more details on Dave Cobbledick's games stay tuned for our rather spelndid interview with the man next issue. ***stf***

NEXT MONTH!

SKILL!

Your ST is just the beginning. A powerful, flexible tool, it isn't just a number crunching games machine but can help you with everything from conversational Portugese to passing your driving test. Find out what your ST can do for you in full next month! It could change your life (maybe).

OBSESSION

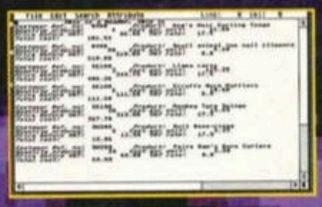


Not the poncey Calvin Klein aftershave but the gobsmackingly brilliant new pinball game from Unique Developments. *Starball* is the current kingpin but will the big *O* knock it from the top of the high-score table?

IT'S A LOTTERY

With National Lottery software on the Cover Disk *ST FORMAT* asks: "What would you do with £5million?" Dug Armstrong dreams of what you could do with a 14MByte Falcon and a wagonload of cash. It could after all be you!

DATA DAY



It's a battle royale between *Superbase Pro* and *Twist 2*. Which crunches numbers better? Which is quicker? Which is friendlier? Which offers the most features? If you want to know, you want to be reading *ST FORMAT*.

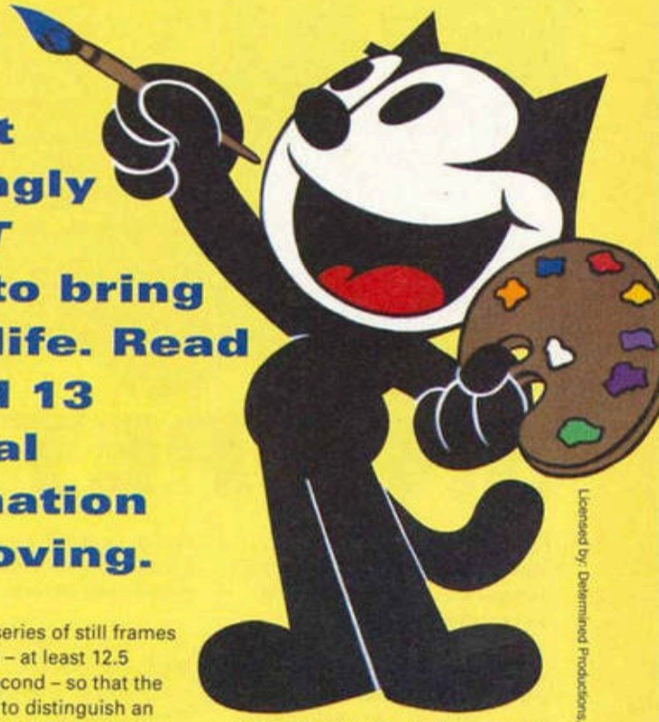
FEBRUARY ISSUE ON SALE

TUESDAY 10 JANUARY

1995!

ANIM

Animation is not only possible on your ST, it's great fun and surprisingly easy. *ST FORMAT* shows you how to bring your pictures to life. Read on and you'll find 13 pages of essential animation information to get your ST moving.

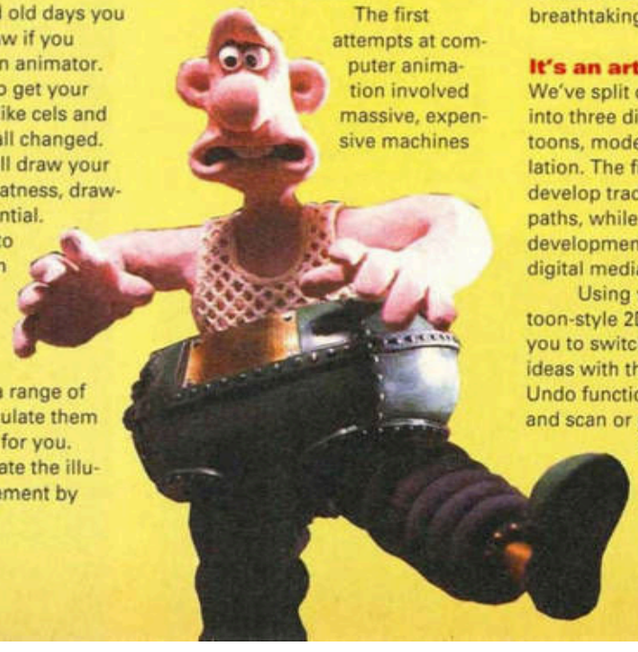


Licensed by: Determined Productions, Inc. NY

The Lion King, Deep Space Nine and *Forrest Gump*. Without computer animation none of them would have been possible. The digital revolution has given animators the power to create scenes beyond the wildest dreams of *Mortimer Mouse* or *Felix the Cat*. Whatever you want to animate it's going to be easier with a computer. With the right software, a little hard work and some imagination you can turn your ST into a studio for the creation of all manner of animated antics (sorry). You'll be amazed how easy it is.

Back in the bad old days you had to be able to draw if you wanted to become an animator. You had to be able to get your head around things like cels and inking. But that has all changed. Although you can still draw your way to animated greatness, drawing talent is not essential. You no longer have to deal with tedious pen and ink nonsense – and you don't need to be able to draw at all. Your ST can pull in images from a range of sources, or even calculate them from polygon points for you.

Animations create the illusion of smooth movement by displaying a series of still frames at high speed – at least 12.5 frames per second – so that the eye is unable to distinguish an individual frame. The traditional method is for the artist to hand craft each cel, then photograph and store it, for display when the whole sequence is completed – a slow, expensive and tedious process. But computers are good at tedious tasks. They can help you with the drawing process, store large amounts of data and display it all when complete. Computers and animations were made for each other.



The first attempts at computer animation involved massive, expensive machines (the fabled Cray super computers), and the results, while impressive, were still out of the reach of the would-be home animator. To craft just a few minutes of films like *The Last Starfighter* and *Tron* took months of rendering and modelling. But computer power and programming skills have pushed back the boundaries. Nowadays we accept films like *Forrest Gump, The Lion King* and *Star Trek VII* without batting an eyelid. We take breathtaking quality for granted.

It's an art

We've split computer animation into three different camps: cartoons, models and video manipulation. The first two follow and develop traditional animated paths, while the third is a new development made possible by digital media.

Using your ST to create cartoon-style 2D animation enables you to switch palettes, try out ideas with the safety net of an Undo function, save backgrounds, and scan or paste pictures from other documents. As well as saving time computers also give

ATE!

© Disney

2D cartoon animators greater scope and power. Computers made the stampede scene in *The Lion King* possible, for example – the use of Cut and Paste techniques saved the artists having to draw every wildebeest by hand*.

3D animated models were once the domain of *King Kong*, Ray Harryhausen's *Sinbad* and Gerry Anderson's *Thunderbirds*, all of which used real models that were sculpted and posed one frame at a time. But thanks to the miracle of 3D modelling technology entire scenes can now be modelled to look perfectly lifelike, using techniques like rendering. Once modelled the world can then be moved and viewed from any camera angle or perspective. Shots can be tried time and time again, without having to commit to film. In *Deep Space Nine*, for example, computer models replaced the more traditional 'Airfix' approach.

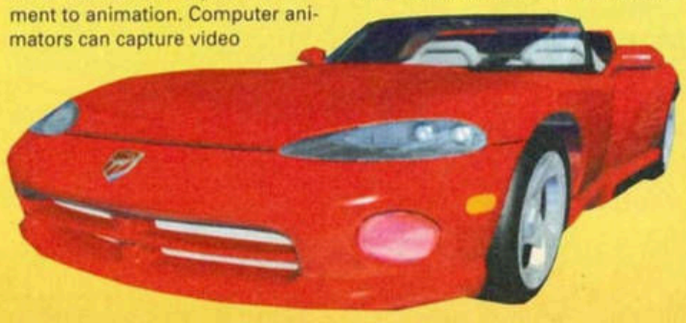
The digital domain has also introduced an entirely new element to animation. Computer animators can capture video images and mould them any way they like. *Zelig* and *Forrest Gump* used the technique to insert actors into classic newsreel footage. *Terminator 2* used it to retouch the 'real' models in the nuclear war scene. And it also gave us morphing, an effect that initially stunned the world but is now commonplace. And if you haven't seen *The Mask* or *Terminator 2* you should really stop reading now and go and get yourself a dose of 1990s culture. Right now. Immediately.

Let's get started!

You can join in the animation revolution. Using your ST you can create surprising results and we're here to show you how. Over the next ten pages the worlds of cartoon, 3D and video animation are explained, with examples and walkthroughs. It doesn't even matter if you can't draw!

Lights. Camera. Action!

***I know there was more to it than that, Mr Disney, it was a broad-brush example.**



MOVE IT!

2D Cartoons page 16

Find out how to make brilliant 2D cartoon animations on your ST. The best ways to make your 'toons walk, talk and smalk (?). Simon Forrester tells you all you need to know to start making your own cartoons.

3D models page 20

Sculpt your own world, raytrace it, and bring it to life. Ed Ricketts shows you how to get started in the world of model animations. The software, the system requirements, the file formats, the lot...

Video manipulation page 24

Make brilliant morphs, digitised delights and all manner of other video fun. Nick Peers reveals the secrets of video animation. Find out how to make *The Wrong Trousers 2* or *Terminator 3* on your ST.

Review: Metamorphosis 24 page 28

Turn that picture into... well, just about anything. The latest video gimmickry comes to town with 16/32's new morphing package.

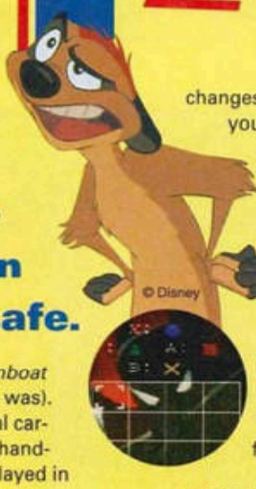
Animation extras page 30

All the other bits 'n' pieces. Like how the *Prince of Persia* animation works and some of our favourite animated game introductions. All in a massive compendium-type package. Y'know, just to get you really inspired...

FUJI RDP

Cartoon ANIM

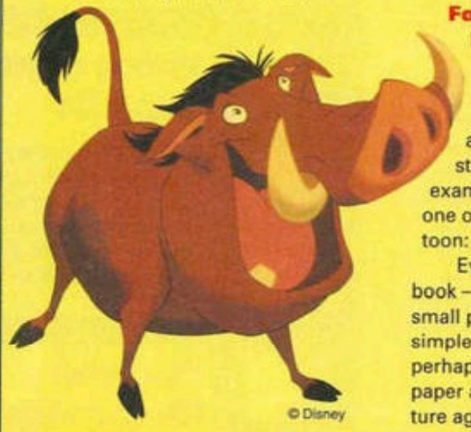
Simon Forrester shows you how to create your own indestructible little cartoon characters. Then is crushed by a falling safe.



Before you get into the complicated processes of things like 3D modelling, rotoscoping, digitising and fast data, you need to understand what animation is, and how to use it fully. The obvious place to start is the most widely known type of animation – cartoons.

By cartoon, we mean anything that gives the illusion of movement using a series of drawn frames, from the latest *Tiny Toon* adventures (top Babs action), through *Felix the Cat*, right back to *Steamboat Willie* (dross that it was). These are all typical cartoons – a series of hand-drawn frames displayed in quick succession.

You can also find cartoon animations in computer games. For example, *The Secret of Monkey Island* was basically one huge cartoon – complete with loads of classic daft gags – and featured animated asides as well as the core cartoon game.



Forget brains. Forget beauty. Thumbs rule

As with all things computery, the clever techniques you see on screen are based on earlier, stone-age methods. For example, let's take a look at one of the earliest forms of cartoon: the flickbook.

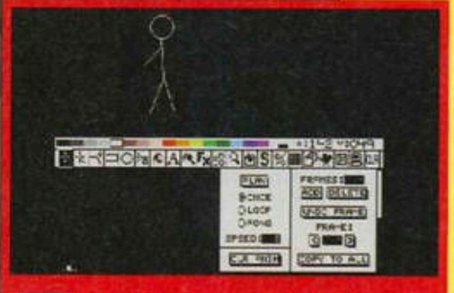
Everybody's made a flickbook – they're easy. Just take a small piece of paper and draw a simple picture on it, a stick man perhaps. Take another piece of paper and draw the same picture again, making minor changes. Keep adding pages until you have around 20 frames, staple the pieces together to make a little book. Hold it by the staple and flick through the pages quickly with your other hand, and you'll see your animation working. As each new and slightly different frame flicks past the eye in quick succession, the pictures merge to form fairly smooth movement.

Enter the computer

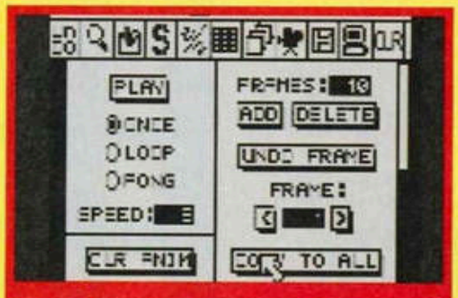
But how does creating flickbooks from paper and ink help you create animations using your ST? Well, animation on computer is exactly the same as animation on paper, but easier. Given the right software your ST can store the frames either as separate images or as a series of frames, enable you to make minor changes to each image with ease, and when your

■ It's a tradition. Whenever we cover *DPaint*, the gorilla gets coverage.

ANIMATING WITH DELUXE PAINT, IN A FEW SIMPLE STEPS



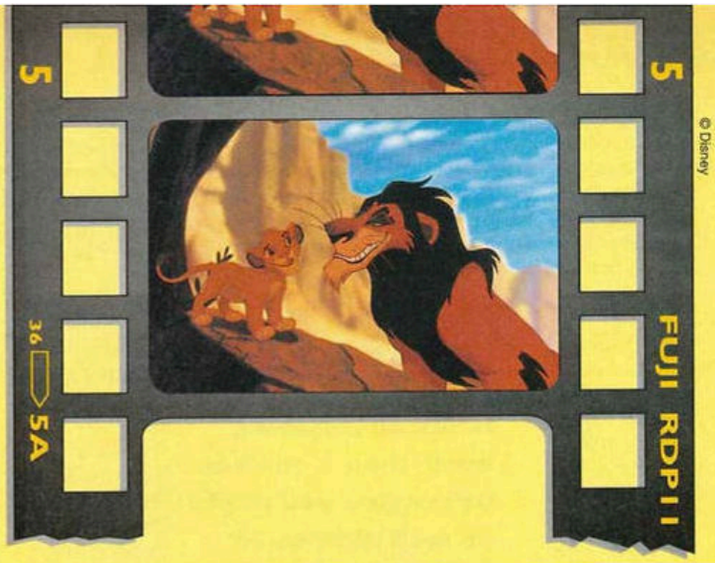
1 First off, draw a stick bloke. You're going to animate his left arm, so don't bother drawing that part yet. After all, you don't want to have to rub it out on every subsequent frame (this picture will be copied, you see).



2 Call up the animation panel. To create frames, click the Add button, until you have ten. Move between frames using the arrows in the box, but first, click the Copy to All button to copy your bloke to the other frames.

3 Still on frame one, draw in little blokey's arm at its starting position, which in this example is down by his little stick body. You could animate more than just an arm, but we won't bother for now – keep things simple 'n' that.

ATE!



AN EYE FOR DETAIL

Creating smooth-looking animations involves tricking the human eye. Human eyes have what we call persistence of vision. Any image you see remains imprinted on the retina for a fraction of a second, until another image replaces it. Close your eyes and you can briefly see light shadows of what you were looking at beforehand.

Cartoon animations use this by leaving one image on the retina and displaying another on screen, so the eye doesn't see a flick so much as the gradual fade from the first image to the second as it dies on the retina, replaced by the new picture. This means that you can rely on the eye to smooth out the flickers and the mind to fill in the gaps. But how big can those gaps be? Well, as a general rule, you should try to get as many frames of animation into one second as you can. More than 25 and you're just being silly, but anything under five or ten will be too slow and flickery. Disney hover at around 13 frames per second, and if it's good enough for *Snow White*, it's good enough for us.

series of images is complete you can animate them – display them in quick succession.

But what's the right software? There's a round-up of art packages over the page, but a good place to start is with *Deluxe Paint*, which is available from EA (☎ 01753 549442) for £59.99. Not only is it a powerful all-round art package, but it has a specialised animation feature to make your life easier.

There's a control panel, represented by a cine camera, that enables you to edit not just a single screen, but also a series of frames, on which you can draw your gradually changing images. You can then use the same feature to display these frames in fast succession, performing the computerised equivalent of a flick through your computerised images. Follow the walkthrough over the page.

CREATING YOUR OWN ANIMATIONS

1. Your pictures

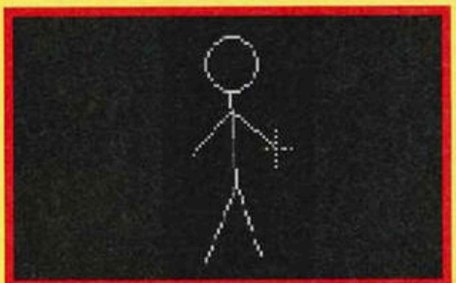
You will, of course, need to draw your original images. You can either draw them frame by frame in your chosen art package, or, using *DPaint*, draw one frame and copy it to the others, changing things as you go. There are a couple of other ways to get hold of good illustrations to work with. If you have a scanner you can draw the original frames on paper or even create non-glued montages, á là *Monty Python*. Or you could use a Ripper cart to rip sprites out of games – and there are always plenty of graphics to work with in any game. Just hand over £15 to Power Computing ☎ 01234 273000 and you can rip graphics out of just about any piece of software you own (see above picture). But a little stick bloke will do to start with, while you get the hang of the techniques of animation.

■ **Iiiiit's a hand scanner. It fits in your hand, and it scans. A hand scanner.**

■ **A grab from *Rugby League Manager*. Now you've seen this before, but imagine if you had a Ripper cartridge. The possibilities for those arms are just endless.**

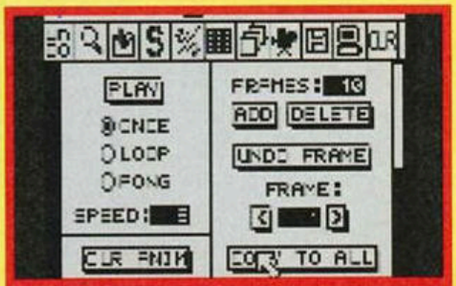
2. Order

Of course, you have to worry about the order your pictures come in, and how they all fall together. Obviously you have to make sure they're all in correct sequence. You should also make sure each picture isn't too different from another. Nothing should vanish or appear or change drastically from frame to frame; things should simply move. If you have a background on one frame, you'll need a background on all the others. If you have a ball



4 **Advancing to the next frame (see step 2), add an arm to the second bloke, this time in a slightly higher position. Make sure the change isn't too large, though, or you'll create a flickery, unwatchable animation.**

5 **Keep adding the arm to each of the frames, changing position each time until eventually, on the last frame, he's full into the two-fingered gesture. You could have a more polite stick man, but that'd be no fun.**



6 **Go to the animation control panel and click Play. Change the frame rate using the control provided, as well as whether the animation runs once, loops, or bounces from one to ten and back, continuing until you stop it.**

bouncing across the screen, for example, the ball must feature in several frames and move approximately one ball's width (or half, even) each frame. It can't just disappear suddenly, and it'll look silly hanging in the air forever.

3. Just do it

Finally, take an art package and animate your work. There's a full example of how to do this using *DPaint* below.

But it's all to easy to say "Just do it". What you budding, inexperienced cartoonists (or animators, if you wear suits) want are a few hints and tips, and perhaps a tutorial or two. Well, firstly, when it comes to actually drawing your little characters you want them to move in a vaguely realistic manner, which can be surprisingly difficult to achieve. There's an art tutorial that might help you, called...

Grafix

If you take a look at last month's Cover disk, you'll find a demo of an absolutely brilliant little program called *Grafix*. It's an art tutorial that takes you through the techniques you need to create decent proportioned artwork, and gives useful hints on actually animating things like people walking (viewed from different angles) and head movements. Just take a look at the strip of pics from it to the right to see what we mean, and watch out for a review of the full program soon.

Portrayal techniques

As well as the techniques *Grafix* teaches you for 'realistically' representing character movement, there are also a few classic techniques used by animators to portray what they can't actually draw.

"Your cartoon isn't supposed to be taken as anything other than a cartoon. Otherwise you might as well digitise it"

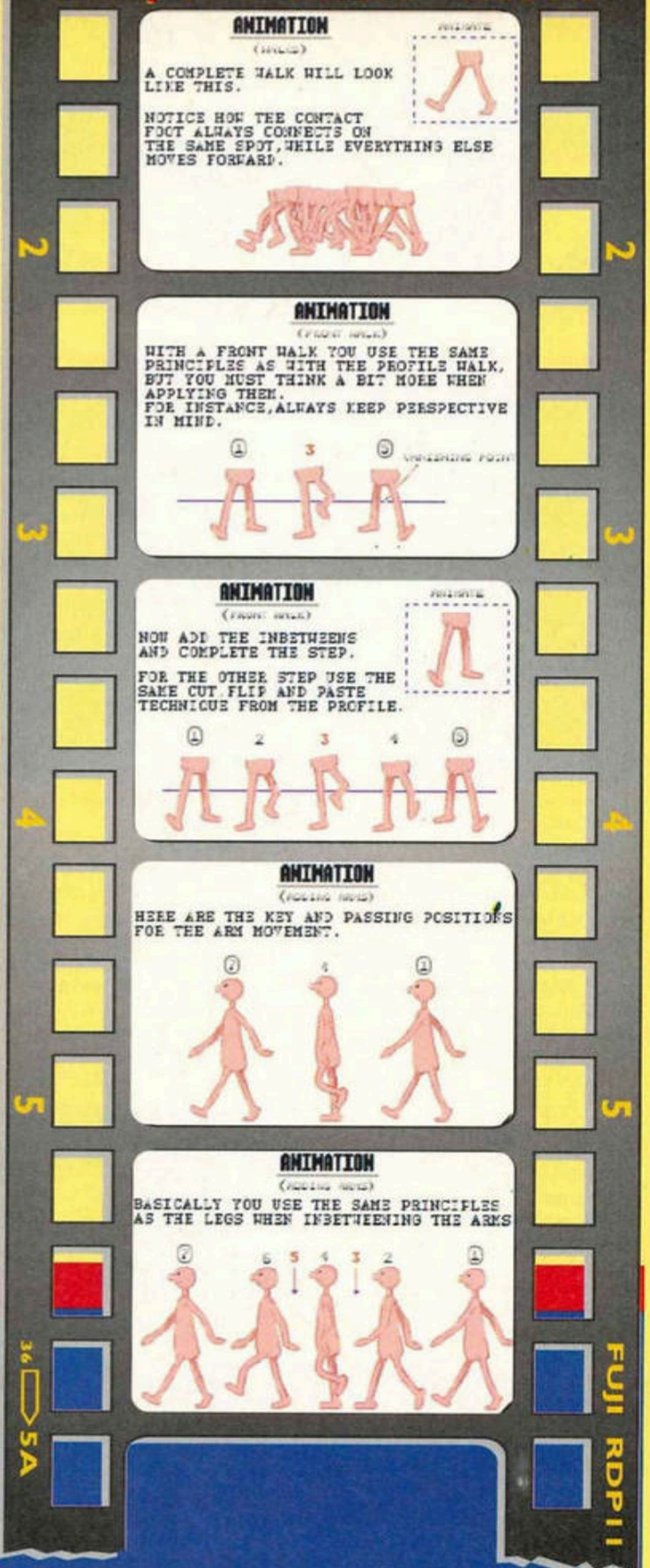
Speed lines. You can only move things so fast in animation. Move an object too far between frames and it looks glitchy. Speed lines work by extending the object across the entire distance it's travelled, making it look less like a flick and more like a blur.

Stretch. In cartoons objects stretch when they move. This doesn't mean everything is elastic all of the time, but if something is falling quickly it elongates. Remember, cartoons aren't supposed to be realistic.

Eyes. Never ever try to draw either hands or eyes in your cartoons to any degree of realism. Hands should have no more than three fingers, and eyes should have no more than two colours, one of which should be white (the other should really be black).

Exaggeration. Your cartoon isn't supposed to be taken as anything other than a cartoon. Otherwise you might as well simply digitise it all, as Nick describes on page 24. So exaggerate – give people silly eyes, big noses, crap legs and strange hairdos. Like Simon, only possibly slightly smaller.

Handy *Grafix* extracts – read on.



SHOPPING TIME

If you want to produce you own cartoon animations, there's lots of software that will help you no end in your journey through the world of the wild and wacky...

Scanners

Gasteiner produce a hand scanner called the Alfa Scan Plus, which costs £119. If you have a Falcon the colour version is £399. Get in touch with Gasteiner on ☎ 0181 345 6000. Or there's the Power Computing Power Scanner, at 400dpi, for £99 (☎01234 273000). Or, to be really thorough about it, there's the ZYDEC scanner, also 400dpi from Ladbroke ☎ 01772 203166.

Art packages

There's no point thinking up wonderful, innovative, funny cartoon ideas then being unable to draw them because the art package you're using is so atrocious. There are lots of great art packages out there, including *Deluxe Paint*, which is £59.99 from Electronic Arts ☎ 01753 549442. It doesn't veer out of low resolution mode, but *DPaint* has all the normal features you'd use in the process of creating pictures on your machine, as well as an animation feature. Or you could try *Pixart*, which is £34.95 from FaST Club ☎ 0115 945 5250, or *True Paint*, £39.95 from HiSoft ☎ 01525 718181.

If you're looking for something cheaper, get yourself a copy of *Crack Art* from any good PD library (see page 71 for a list of phone numbers). It won't have the kind of animation features found in packages like *Deluxe Paint* but at the price it's excellent value for money. And if you're easily amused, like we are round here, you should really give *Art for Kids* (reviewed on page 37) a try, if only for fun.

File sequence players

The only other thing you'll need is *Animate* from Goodman PDL (it's PD) to turn any sequence of pics into a moving image. There are others, but this one's great.

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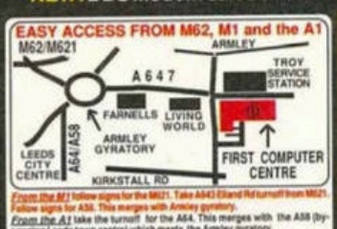

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3D Modelling ANIM

What's behind *The Mask*? Just what makes *Jurassic Park's* raptors rapturous? What put the *Deep* into *Deep Space Nine*? 3D rendering, of course. Blast from the past Ed Ricketts puts it all into perspective (ahem).

You know where you are with a cliché, so let's start with one: 3D computer animation has revolutionised the way special effects are developed for film. Stuff like *Terminator 2*, *The Mask* and of course *Jurassic Park* just wouldn't be possible without the wonders of a Silicon Graphics machine, a fleet of animators and months of rendering time. But we're getting ahead of ourselves – tell us about the old days, Grandad.

As recently as ten years ago, everything was done by hand. Models were physically built and then altered very slightly frame by frame to simulate the illusion of real movement – even the *Star Wars* films used this method. 25 frames per second of film equals 1,500 frames per minute equals a lot of dull work for the animators, and even then the animated object looks jerky and – well, they look obviously animated.

Nowadays all the models exist only in the innards of a computer. Once a model is built in a CAD package and assigned various textures to make it look realistic, it can be manipulated in any number of ways. All the tedious calculation of movement is handed over to the computer: you tell it where the object starts moving, where it stops, and what it does in between. Said mega-machine then goes away, has a bit of think and churns out the required frames automatically. Honestly, animators don't know they're born today.

"Once an object is built it can blown up, stretched, squashed, and the result is always smooth yet almost photorealistic"

The advantages are enormous. Once an object is built, it can be lit in any number of ways, viewed from any angle without the need for rebuilding, blown up, stretched, squashed, whatever, and the end result is always perfectly smooth yet almost photorealistic. Easy, huh? Er, sort of...

Go on then, explain it

Okey-dokey. Most 3D objects built on a computer are composed of vertices (points in space) connected by straight edges, which together form faces. Thus they don't actually have curved edges – the illusion of curvature is provided by the rendering routines, of which more later. Obviously you don't build objects by defining every single point and then connecting them to every single edge manually (unless you're a startlingly tedious person). Most CAD software can instantly generate geometric primitives like cubes and spheres, which can be altered and joined to make the finished objects. Other more sophisticated methods of building are available, but a) they're dull and b) there isn't space to describe them.

Right, so you've got a 3D object made up of lines and points (commonly known as a wireframe model, because, um, it looks like a wire frame). The next job is to assign pictures or textures to collections of faces so that they appear to be solid objects. This is a complex art, and again we could rattle on about it for ages, but

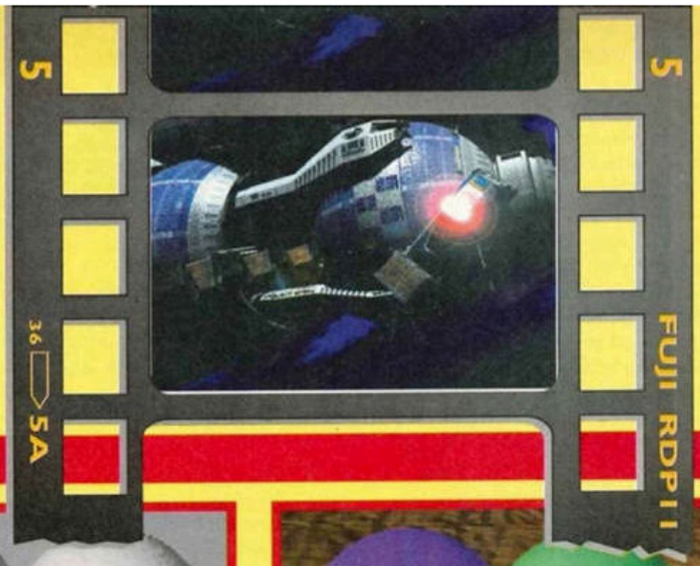
LET'S START A MOVEMENT

1 This intro from a game demonstrates that animation needn't be complicated, despite the enormous amount of info we've thrown at you. A couple of ships fly past a planet...

2 ...and towards a space station sort of thingy. The ships are simply moving in a straight line – dead easy to set up in, say, *Xenomorf 2*, using tweening.

3 The space station then starts to flip towards the viewer. Again, this is just a matter of rotating the object on the spot, letting your ST work out the frames.

ATE!



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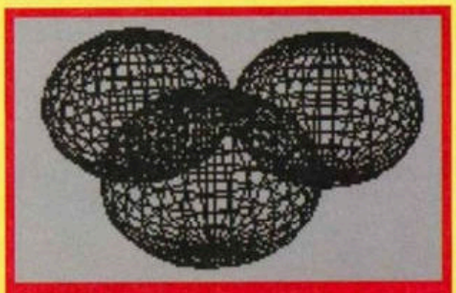
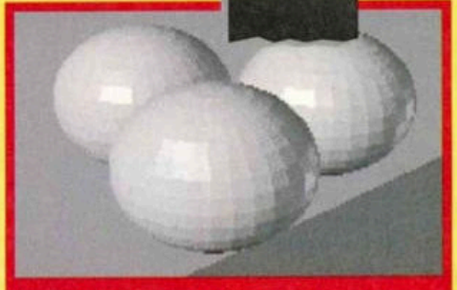


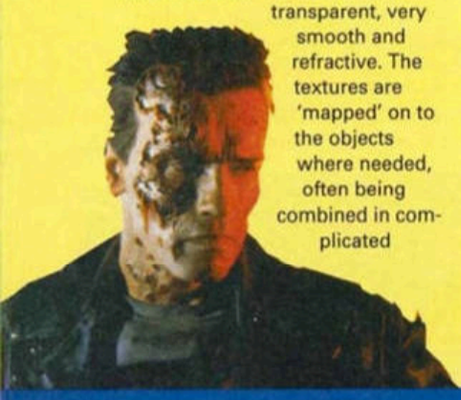
1 For test renders you can use wireframe objects like these balls on a table done in *POV*. They don't show much detail but they're quick for checking positioning and the like. Note you can't see the table at all.



2 Next step up is doing the flat shading, which is fine for angular objects but (as you can see with these balls) doesn't do a lot for supposedly curved surfaces. Which leads us rather neatly on to...

3 ...for a decently realistic effect, you need to add Phong shading to smooth the curves, shadows, colours and textures. Reflectivity's been added too. Not quite the most exciting scene, but it shows the rendering basics.

briefly: every texture is defined by its basic colour or pattern and its degree of shininess, reflectivity, refraction, bumpiness, opacity, and many other variables. Nearly all real-world surfaces can be created by combining these attributes in subtle ways. A glass texture, for instance, is almost completely transparent, very smooth and refractive. The textures are 'mapped' on to the objects where needed, often being combined in complicated ways to give the right effect. For wood, you might use a scanned bitmap of real wood, combined with a bump map and shininess.



With the models looking dead smart, it only remains to move them into the right places in the 3D world, light them, and then render them. It's the lighting and rendering stages that really provide the realism. Lighting in particular is crucial. Because in the computer's world there's no natural light at all, you have to provide sufficient to make the scene look natural while still highlighting the objects the way you want. You can use omni lights (even texture over the whole scene), spotlights, point lights (which radiate in all directions), projection lights, and others.

Finally, the scene is rendered. Rendering is the process by which the computer, whether it's a £50,000 Silicon Graphics machine or your ST, calculates how all the surfaces look, where the reflections are, how large shadows should be, that sort of thing. There are usually various levels of rendering sophistication, which take increasingly longer to produce a finished picture. At the lowest, objects are displayed as simple wireframes, followed by flat shading which shows the facets of the objects clearly. Unless you need this sort of mechanical look, a more advanced rendering algorithm must be used. Gouraud shading and Phong shading (named after their inventors, since you asked) provide excellent results, smoothing out edges so they appear rounded and applying realistic highlights. Antialiasing is also used to remove the 'jaggies' from the straight edges, which otherwise tend to make the scene look obviously computer-generated. At the highest end there's raytracing, which meticulously calculates the path of each ray of light that hits the objects. This provides photorealistic pics but takes absolutely ages, even on machines costing many thousands of pounds.

Once your scene is built it's a matter of moments to move the camera to a different position, or alter the lights, or change an object, and then re-render. The computer does all the dull calculating stuff for you. Yup, they may not be much cop at getting horribly drunk or driving a Golf GTi, but computers really are much, *much* better than you at computing. Surprising, that.

4 Finally, the name of the game is revealed. With simple linear movement, rotation and camera panning, an interesting animation is produced. Try it – you'll like it. (Cheesy grin.)

FIVE TIPS TO RENDERING HEAVEN

1 Make a sketch on paper showing roughly what the initial scene should look like and how the objects are moving. Yes, this sounds horribly low-tech, but it helps you later when you've forgotten which bit was supposed to go where.

2 Keep things simple at first. Compose your scene with primitives such as spheres and cubes, and use them to arrange the scene and figure out movement. Then, when the motion's right, you can do the final everything-included rendering.

3 To keep your animations at a reasonable size, try not to move large objects too much (especially when they're close to the camera). Wanging an Imperial Destroyer around eats up disk space in the final animation.

4 Consider how detailed your objects need to be. If something's way off in the distance, it won't need to be that detailed. You can save time, effort and frustration.

5 Pay attention to lighting. Most beginners throw in masses of bright lights which completely wash out the scene and make it look unrealistic. A few carefully-placed spotlights should do the trick.

6 Ignore the sixth tip.

What about animation?

That's a piece of pi – er, cake, too. Any decent 3D animation package has the ability to 'tween', that is, work out the frames for the movement of objects, given a start and end position. You set up the first frame with the objects in their starting positions and the end frame with them in their final positions, specify the number of frames they should take to move, and your ST works out the in-between bits, moving the objects smoothly and realistically along their paths. If the object needs to rotate, or squash, or stretch, or whatever, you simply assign another keyframe somewhere in the sequence with this transformation applied. In this way complicated movements can be created with little effort on your part.

One thing to note. Although your initial scene may be complex and therefore use up loads of memory, the animation won't be nearly as big. After all, each frame is simply a 2D bitmap picture of the state of the objects at that point in time – it doesn't actually store the objects themselves. Also, most animation formats (particularly FLI) use a great deal of compression, storing only the changes between each frame rather than an entire picture. So if an object doesn't move over the course of 20 frames, the animator uses the data from the first frame for all 20.

It's always worthwhile checking and even editing the animation in another package. No 3D renderer is perfect and you might want to clean up some rough edges by hand, or possibly add further effects that aren't possible with the renderer (such as speed blurs). Some packages can also compress the animation even further – lengthy process but worth it.

Do it yourself...

These days there are plenty of good 3D renderers around for the ST. Old-timers will remember *Cyber Sculpt* and *Cyber Render* (look out for them in Reader Ads) a comprehensive modeller and renderer respectively. *Sculpt* is still the standard for creating 3D objects, though it's not that easy to use, and *Render* can produce stunning animations. Both will run on a bog-standard 1MByte ST.

"Once your scene is built it's a matter of moments to move the camera, alter the lights or change an object"

Better by far is *Xenomorf 2* (£129 from 16/32 Systems ☎ 01634 710788). This beast of a package has a full graphical front end for arranging scenes, although you still need *Cyber Sculpt* to create the objects. Multiple light sources, animated textures, 24-bit output, shadows, tweening – it's all there and fairly simple to use. Any ST with more than 1MByte will do, but you'll need a TT or Falcon to make the most of 24-bit stuff.

Raystart (£59 from 16/32 Systems) is something of a mixture. Unlike *Xenomorf 2*, it includes a full 3D modelling section to create objects, which are fed to the raytracing part, which produces excellent results in a relatively short time. However, the manual's awful and the program has far fewer features than *Xenomorf 2*. *Raystart* runs on any ST in any resolution.

There's also quite a bit of PD software, much of which has featured on past Cover Disks. First there was *Persistence of Vision* which scored a Gold-winning 90% in issue 48 and featured on Cover Disk 49. Despite a fiddly command line interface, it was popular enough to justify a *POV 2*.

Other raytracing software includes *Pearle* (Cover Disk 33) and *Volume* (Cover Disk 34). And *Ram World* isn't strictly a raytracing package, but enables you to create your own 3D worlds to explore, and scored 64% back in issue 38. See page 85 for back issues.

FOR THE SLIGHTLY MORE ADVANCED...

Yes, it's a cliché to mention Jurassic Park, but so far it's the finest example of just how realistic film-quality 3D animation can be. In some scenes (like the raptor stampede, for instance), the effects are so good you wouldn't even realise they were computer-generated... which is the whole point, really.

■ A splendid raptor from *Jurassic Park*. This beastie was created on a Silicon Graphics machine and makes heavy use of bump mapping for the leathery hide look. Very nice.

■ Although raytracing can be slow and complicated, nothing beats it for realism. This spark plug, created in *POV*, shows what can be done with some effort.

■ The T1000 walking from the fire in *Terminator 2*. A real actor performed the movement, which was used for the animators to copy as they built the highly-reflective droid.

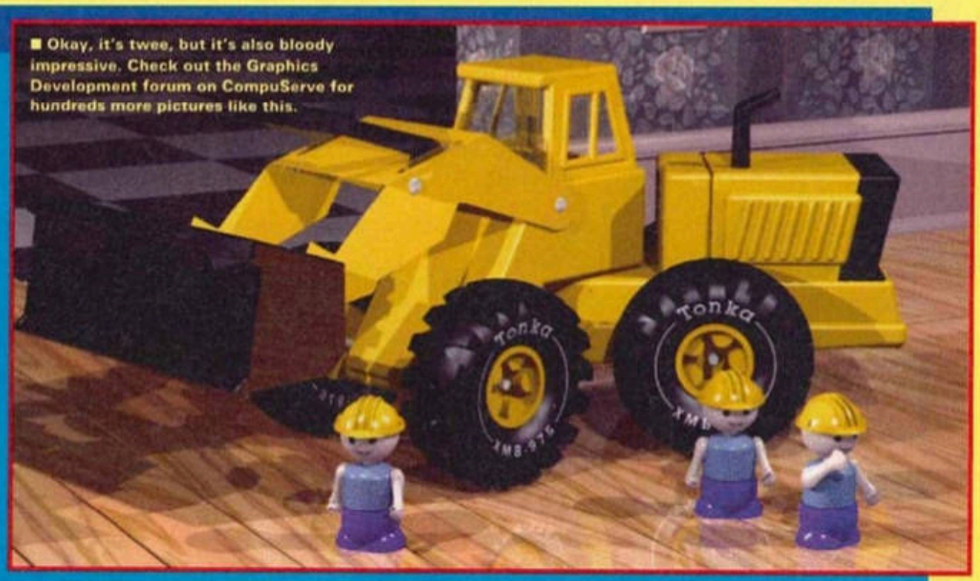
■ Texture mapping (wrapping pictures or patterns around an object) is the easiest way to give your models detail without actually needing to build it in. These are some of *POV*'s defaults.

PERSISTENCE OF VISION

No doubt about it, raytracing is the way to go if you want spectacularly realistic pictures. But, and this is something of a Bernard Manning-sized but, you have to be prepared to put in a lot of effort. The best raytracer on the ST (and indeed on any other platform) is undoubtedly *Persistence of Vision 2*, or *POV 2* as it's known down the pub. Plus, it's free from any good PD library. Completely. No money to pay. Zilch.

***POV 2* isn't exactly the most user-friendly program you'll ever use. There's no graphical interface at all, so you have to build all your scenes by defining them in a script file. This is fed to *POV*, which crunches away for a bit and then spits out your picture. That's fine for simple stuff like spheres, but when you start trying to build a 1/25th scale model of the Taj Mahal, things get a little complicated. The glorious picture in your head rarely matches the mess of shapes and colours *POV* cruelly throws back at you. A head for maths and plenty of spare time are prerequisites.**

Nevertheless *POV 2* is capable of amazing results given time. It's provided with umpteen sample files and studying these should help enormously with your own efforts. There are also squillions of source files on CompuServe and other BBSs, along with some truly amazing pictures. Seek it out, master it, and be the scourge of your enemies (possibly).



■ Okay, it's twee, but it's also bloody impressive. Check out the Graphics Development forum on CompuServe for hundreds more pictures like this.

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Video ANIMA

Nick Peers loudly told anyone who'd listen that he and his ST were taking over production of the latest Hollywood blockbuster...

You might think that movie-making is an expensive option, what with the cost of cameras, editing equipment, stars, location shots and the like. But we're going to show you how to produce your blockbuster on a shoestring budget with your ST as the central figure. You can shoot your movie in your backyard, then, armed with this invaluable tips, turn it into the film everyone will be talking about for the next decade. Erm, maybe.

Over the next few pages, you'll find out how your ST can do all your editing and special video effects for you (it can even transport your leading man to the moon. No, it can). In fact, the only limit, apart from memory and disk space, is your imagination. Oh, and the-footage at your disposal. We're not going to concentrate on the actual filming, here, so don't get ready for "Action", but be prepared to wade in with your ST on the sound of "Cut, that's a print!"

"Scroll through your grabs, cutting and pasting as required, and before you know it you're editing your own movie"

Editing your movie

How can your ST be used to good effect in creating cinematic masterpieces? Well, you obviously need the raw data first (see the next page), and there's all manner of wonderful things you can do to it, as long as you have a digitiser like Videomaster or VIDI-12-ST.

One obvious advantage a digitiser has over video is its superlative editing techniques. You can scroll through your grabs a frame at a time, cutting and pasting as required, and before you know it, you're in the process of editing your own movie. Your ST is the only viable and cheap enough way you're likely to find to edit footage effectively.

Video Effects

There are several special effects you can perform using video. One of the earliest was to create the illusion that people were somewhere they weren't. In early *Tarzan* films this was achieved by having the star stand in front of a huge screen displaying the backdrop (a cliff face perhaps). Not convincing.

The technique improved, however, so that in 1979 the posters for *Superman* proclaimed "You'll believe a man can fly!" By 1994 cinema goers were shaking their heads to remind themselves that Tom Hanks, as *Forrest Gump*, was not really there shaking the hand of John F Kennedy, but was in fact cleverly superimposed on to a piece of old news footage.

Your ST can do this, too. Once you've got your two pictures you can import them into an art

■ Save yourself loads of memory by reusing sequences and reversing them. With Videomaster, it's easy using the powerful software provided.

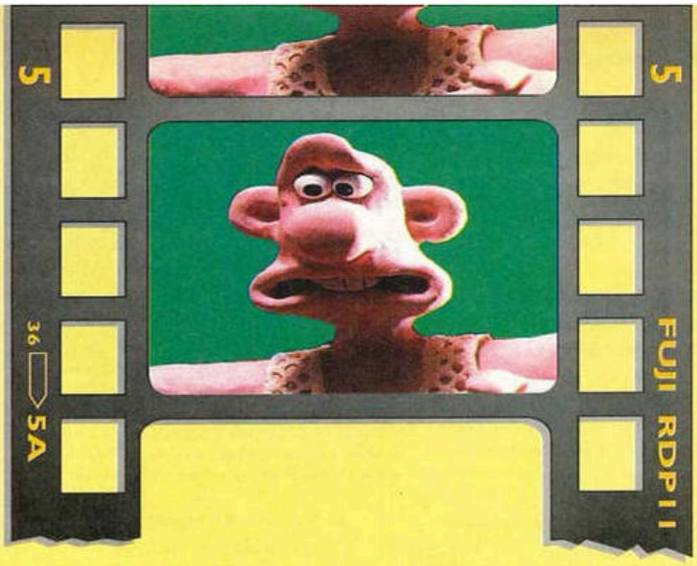
SUPERIMPOSITION

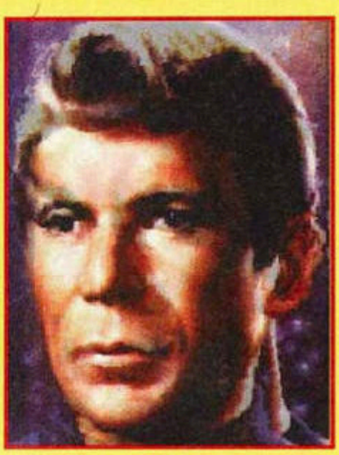
1 You first need your background image. Here, we've grabbed a scenic still of Mount Everest. Note the fact that it's in monochrome to ensure that there's no clash of palette with the foreground character.

2 Next, we need our character. And guess what! It's a picture of me. All ready to bounce along the foot of Everest (don't ask why, please). Clothed in, er, a nice black sweatshirt and waterproof specs. Or something.

3 Next, using your art program (in this case, *Degas Elite*), first cut and then resize the foreground picture, so that it's not going to overwhelm the background. There is a loss of quality, but this isn't Hollywood y'know.

ATE!





■ Morphing enables you to merge one object into another. Here, Kirk would have looked like had he been a Vulcan. Beats his human incarnation, anyway.

package and, using its Block functions, superimpose one picture on to another. Well, it's one way to achieve your mum's dream of meeting Cliff. Animating such a sequence is tricky, but if you've got the patience you could do it: see the walkthrough below for details.

Morph...

...is the name of a Plasticine character created by Tony Hart, and illustrates another video effect that's easy to perform on your ST (stop-motion – see below). It's also the name of an increasingly realistic video technique which transforms one object into another through a sequence of animations. It has been seen to good effect in *Terminator 2* and *The Mask* as well as *Star Trek: Deep Space Nine.*

There is software available that enables you to morph one image into another. The majority of these work by creating 'inbetween' images that are stored to disk as separate pictures. You can then watch the morph in action using a slide-show program or another animation player. Look at that picture of Spock and Kirk combined for an idea of what can be achieved.

Stop, now go

Stop motion is one of the most powerful video animation techniques you can use with your ST. The theory behind stop-motion filming is the same as cartoon animation: each frame is set up and grabbed individually, and then run in a sequence to simulate animation. Stop-motion photography involves animating real 3D objects rather than drawings, which eliminates the need for drawing anything (although modelling is a skill you might consider). Requirements include a camcorder, your models (or a huge lump of Plasticine), admirable patience and huge amounts of memory if your animation is to be ultrasmooth. We would have given it a shot, but Trent refused to let us approach the plastic Godzilla that stands on top of his Mac as our possible star.

All together now

But don't limit yourself to just one of the above video effects. Why not combine them all to produce the ultimate five-minute movie? You could begin with a live action sequence, with your star running towards his spacecraft as he's swiftly pursued. Then cut to a stop-motion sequence where you see his craft take off and escape into space (perhaps even using a superimposed effect). Finish with a morphing technique that sees your character reverting from human to alien form, then tack on an end credits sequence if you're really pleased with your efforts. Turn over the page to find out how.

WHERE DO I GO FOR THE PICCIES?

Film, following in the footsteps of photography, is based on light. As video cassettes prove, this light can be stored as electronic information. Because your ST and Falcon also deal in electronic information, the two are compatible – a good thing or else this feature would have ended here.

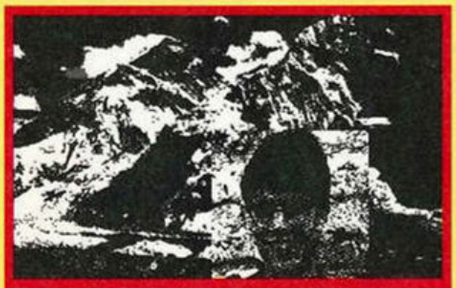
You can get still and moving pictures from a variety of sources. Photos can be obtained in one of two ways. The easiest is by transferring them on to Kodak PhotoCD, which stores them electronically in such a way as to be easily interfaced to your ST via a CD-ROM drive. The second way is to convert them for use on your ST is via a scanning device.

An easier method of obtaining footage, especially for use in animation, is to grab directly from video sources such as TV or camcorder. This method not only provides you with your drawings, but your basic animation too. For this, you need a video digitiser, such as Videomaster or VIDI-12-ST. Although the results are not quite TV quality (they're monochrome for a start, unless you grab them a frame at a time using a perfect freeze-frame video), you'll be surprised at how well defined they are, even with Videomaster's quarter-screen size.

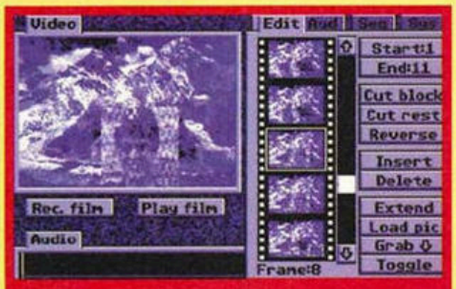
Memory and disk space are also restrictions you must consider. VIDI-12-ST, which grabs full-size screens at 8 frames per second, needs 4MBytes of RAM to score 70 frames (less than ten seconds of continuous footage). Videomaster is less restrictive, because it grabs quarter-screen size chunks, which means that you only need 1MByte of RAM to store the same length of footage.

A hard drive is also a definite must if you want to save out the footage and create massive sequences, and see the next page for some general hints and tips for making the most of what memory you have.

4 Having saved your background picture as frame 1 (which you've done, of course), paste your foreground picture in the appropriate place on the screen. Save this picture as frame 2 before reloading frame 1 into memory.



5 Next, repeat the pasting process, this time remembering to paste the character in a slightly different position to create the illusion of animation. Aim for about 20 frames (if you have 1MByte of RAM, that is).



6 To display your animations, you need a slide show program that loads the pictures in all at once. Try using the Videomaster software (Cover Disk 59) and load in the pictures a frame at a time using the editing screen.

HINT 'N' TIPS

When it comes to creating your own video animations, there are a few things you should probably bear in mind.

■ The picture has been changed by giving it sharper shades of black and white. We've also erased a lot of the extra background data.

Memory

Remember your machine's limitations. Even with a 14MByte Falcon and 209MByte hard drive you're still going to run out of memory and disk space quickly. Here are some essential tips to make the most of what you have:

1. When editing your footage remove as many of the 'inbetween' shots as possible. Try going down to about six fps. While some smoothness is sacrificed, the memory you save will be there for other sequences.
2. Reuse the footage as often as you can (play it backwards, for example). If you're animating a bird flapping its wings it's as effective and much less memory hungry to just store the footage for the wings flapping one way, then reverse the sequence to complete the effect.
3. Avoid long-winded footage that does little except use up vast quantities of memory space. Keep your sequences short and sharp.
4. Pad out your footage by using lots of stills or by reusing sequences. If you're creating a music video using your favourite band, for example, try repeating a sequence of the lead guitarist thrashing away in the background. Brian May, for instance.

Morphing

Morphing is difficult to achieve using digitised images because, unlike drawings, there is so much more extraneous data (such as backgrounds) which can confuse the program and create problems.

1. Keep the start and end images as similar as possible. So don't try to morph a photo of your hamster into a gorilla – it won't work. It helps if the two pics use the same colour palette, composed of stronger, more contrasting shades of grey. To do this, grab your two images using a high contrast level.
2. It's an advantage if the two images (for example, two faces) are similar sizes and face the same way. If one wears glasses, so should the other.
3. Try to define as many points of change on the two pictures as you can (use the smallest grid size in *Morph* to improve your results).
4. To improve the smoothness of the morphing process, create as many frames of animation as memory or software permits.

■ We gave away *Morph* on Cover Disk 59, and it has almost as many features as *Metamorphosis* (on page 29).

COPYRIGHT, EH?

There's no restriction on what material you use if you keep it to a strictly personal use. Start distributing it, even for free, and you'll be breaching various copyright laws. So while it's fine to show your mum and little sister what you've done with your favourite rock group, don't copy the footage on to blank disks to give to your friends. If you want to create footage to distribute in any form whatsoever your best bet is to get a video camera and create your own original footage that won't lead to troubles over copyright and possible prosecution. *Star Trek* is out, as is *Tarquin's Dodgy Space Movie* that cost £10 to make, sadly.

■ Don't forget, copyright laws prohibit you from distributing any digitised animation that you create using copyright material. Such as videos of your favourite rock group.

WHAT DO YOU NEED?

Video animation is much more hardware orientated than other two types. That's because we video peeps can't be bothered to draw *(can't draw, you mean – Andy the art ed)*. It's just too much effort.

Videos

You need a video source from which to grab your animation sequences. The one you're most likely to have is a VCR – they start from as little as £150. If you're after one that enables you to grab perfect still frames then you need a VCR with a freeze-frame facility (£300 upwards).

If you want to use your own original footage, you'll need a video camera. These can start from as little as £100 for a second-hand black-and-white closed circuit camera (as used in shops), which is perfect for your ST because it can't grab moving frames in colour anyway.

Digitisers

There are two currently available for the ST. Videomaster from Microdeal (94%, £99.95) enables you to grab quarter-screen-sized moving images, but also supports sound. VIDI-12-ST (80%, £54.99 from First Computer Centre ☎ 0113 2319444) is more memory hungry, but does enable you to grab full-screen moving images.

We've also been reporting on a cheaper digitiser called the DV3 that's under development (see issues 59 and 64). It will cost around £40 and will enable you to grab still images in monochrome, even if your video doesn't have a perfect freeze-frame facility. Stay tuned for future developments!

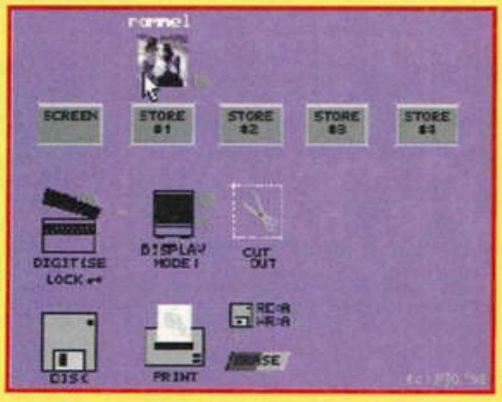
Software

There's plenty of software available to enable you to get the most from your movies. Obviously, all the digitisers come with their own built-in software for grabbing and editing footage, but there are a few other programs that can make your video productions even more impressive.

Art packages: We featured a big round-up of art programs in issue 61, and Simon's listed a few good 'uns on page 18, and they're invaluable for pruning your frames to achieve the desired effect. You can use them to develop your sequences to meet your exacting requirements – add elements or strip them away for example. Why not use them to recolour your images even? Give that photo of your best mate a green tinge to give him the alien look.

Morphers: We gave away *Morph* on Cover Disk 59, which can be used to create basic morphs between two pictures. The software isn't really suited to morphing two digitised pictures however, as I found to my cost when I tried to turn myself into Superman. We've also reviewed a new morphing package this issue *(Metamorphosis 24* – see page 29) which is far superior to Morph, but then for £80 what do you expect? It only works with TIFF images, which means that your pictures grabbed from Videomaster (which are Degas-compatible) will need converting using a program like *GEM-View*.

Video titling: Computers can be used at the most basic level to add footage to your holiday movies by creating credit lists. There are two types of software you can use, the first of which involves creating attractive sequences upon which you can display who's who in your films. Several are in the public domain: *Creative Titler* (1 MByte), for example. For a more professional look you might like to use a genlock device, which enables you to overlay your credits on top of your actual video. There is currently only one genlock for the ST, the Hama Trilock Genlock, £324.99 from the First Computer Centre, which scored 85% in issue 59. Its use isn't just limited to adding a credits sequence – you could use it to label certain parts of the footage (the spot where your dad later fell into the sea off-camera, perhaps?).



■ The DV3 video digitising package could well be the answer for those of you working on a shoestring video budget. But what's the question?

If you're interested in learning more about editing and video animation, turn to page 85 to order your copy of issue 59 where we not only gave away the Videomaster software on the Cover Disk, but featured a four page tutorial on how to use the software constructively.

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AWESOME SOFTWARE

SOFTWARE UPDATE
AS OF MID-NOVEMBER '94

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Brutal Sports Football - JGS 1532	NOV '94	£54
Chequered Flag - JGS 1761	6/12	£54
Iron Soldier - JGS 4011	14/12	£54
Bubsy the Bobcat - JGS 1581	22/12	£49
Kasumi Ninja - JGS 4502	31/12	£59
Air Car Wars - JGS 0671	DEC '94	TBC
Cannon Fodder - JGS1704	DEC '94	£39
Double Dragon - JGS 2181	DEC '94	TBC
Flashback - JGS 2971	DEC '94	TBC
Pinball Fantasies - JGS 5931	DEC '94	TBC
Rayman - JGS 6691	DEC '94	TBC
Sensible Soccer - JGS 7011	DEC '94	TBC
Syndicate - JGS 7301	DEC '94	TBC
Theme Park - JGS 7501	DEC '94	TBC
Tiny Toon Adventures - JGS 7592	DEC '94	£49
Zool 2 - JGS 93122	DEC '94	£54
Rise of the Robots - JGS 6942	FEB '95	£49
Creature Shock - JGS 1602	EARLY '95	£39
Demolition Man - JGS 2142	EARLY '95	£39
Hardball III - JGS 3841	EARLY '95	TBC
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Metamorphosis 24

Giggling with genius insanity, Simon told his Falcon to morph him into a talented, gorgeous writer. Then, disgruntled, he sat down to write this review instead.

You're watching a wonderfully written, tensely directed thriller, and you spot the final sequence coming up. It's all or nothing. This could turn out to be one of the all-time epics of cinematographic history, or a dull pile of old nob. And just when you're right on the edge of your seat, wondering if you'll ever breathe again, they use some cheap morphing effect.

When the idea originally made its way on to our screens, notably (well you couldn't miss it could you?) in *Terminator 2*, everyone agreed that morphing was one of the most realistic special effects ever. It really did look as if it was possible. But ever since that fateful day we've been bombarded with cheap excuses for plot developments, 'brilliantly original' ad campaigns, tatty rock videos and any other visual 'treats' that can find an excuse to use the system. And since you own an ST, it's possible for you to create your own effects along the same lines. *Metamorphosis 24* is the package that gives you that ability, although obviously without the resolution or speed you'd get from the kind of graphics workstation they used for *Terminator 2*.

"It's fun for the first five minutes, but dull after that. It morphs, but do you really want to?"

Built for idiots

The first thing you notice about *Metamorphosis 24* is that it's laid out with simplicity in mind. Using a GEM-style interface, you can load up your start and target pictures in windows, the status and information window sitting neatly out of the way. All other pictures that you create from the menu options appear in boxes of their own. Slowly.

That's right – a morpher like this isn't just a picture creator, it's a set of complex mathematical algorithms employed to do something that's incredibly difficult for a computer. For speed reasons, a separate version of the software has been provided to run on the Falcon 030 and TT, making use of the maths co-processor to try to speed the process up a little.

The package works on two levels. First of all, it can calculate a mix picture, working with two images to create a third. For instance, with the demonstration images provided you could create a picture that was half Kirk and half Spock (50 per cent), or Kirk with just a slight hint of Spock (10 per cent).

■ The images can be of absolutely anything, but try and make them vaguely similar.

■ These are examples of the files that the program saves to disk, whereas the pic below shows the poor quality of their screen representations. Shame. Anyway, who needs Industrial Light and Magic?

Moving pictures

Its second ability is to calculate animations, saving frames, which are then used create a full morph sequence, to disk. This however takes an ice age. If you don't mind leaving your machine on overnight you can create some impressive animations, but don't expect to sit and watch while it works them out. A separate program has been provided for viewing these files, enabling you to view the files in sequence as a movie, and you could patch something up to get these frames on to video (you can use a composite output to video using the player, or turn to page 24 for more advanced results).

So do you have any use for a morphing package? If so, do you have any use for a package with more facilities than *Morph* (on issue 59's Cover Disk)? If so, *Metamorphosis 24* gives you a few extra options. It's fun for the first five minutes, but dull after that, serving no real purpose except for brief entertainment. It morphs, but do you really want to? ***stf***

How does it do that, then?

When it's morphing one person into another, how is your ST supposed to tell a nose from an ear, to say nothing of dealing with everything else from cars through wild animals all the way to text (now there's an idea)? Well, you're given the chance to plot nodes and lines on to your picture, dictating which parts go where. For instance, in our Kirk/Spock example, a diamond has been plotted around the mouth on both pictures, so the program knows exactly which bit to change and which bit to keep roughly the same. You do this for things like hairlines, eyes and nose too. Dead easy.

Also needed

One of the first things you can do with *Metamorphosis 24* is test the package out on the images provided with it. However, there's only so much you can do with 400 pictures of Kirk in various stages of Vulcan transformation. Here at *ST FORMAT*, we have picture files coming out of our ears, because we use them in other aspects of magazine production. You, however, may be stuck for pictures to use. This means either finding yourself a digitiser or using pictures you already have. Or you even could use images from the PD CD reviewed on page 39 of this very ish...

Metamorphosis 24

£80 16/32 Systems
☎ 01634 710788

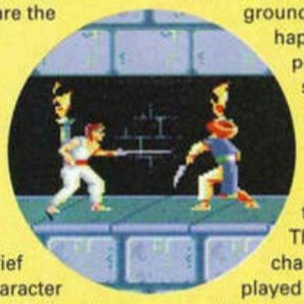
Highs
- It does everything a morphing package should do...

Lows
- ...slowly
- Not many extra features for the price

70%

So just how does Prince of Persia work?

We've told you how to produce great-looking animations using a number of different techniques, but these are strictly non-interactive affairs. How do programmers animate characters in games without knowing what you'll do next? Well, the principals are the same, but the game has to wait for your joystick movements before it decides which frame to call up next.



The first step is for the artists to draw the characters. They examine the brief (to see what each character has to be able to do) then break down all their movements into individual frames. These are drawn against a neutral colour that isn't used in either the game's backgrounds or the characters themselves. These frames are drawn on an evenly spaced grid, one frame to each rectangle of the grid.

The top left corner of each rectangle has a reference number. These rectangles form the frames from which the animation is built. The program is 'told' which frames follow which, so that when you move the joystick it knows which three sequential frames make the character stand, jump and land.

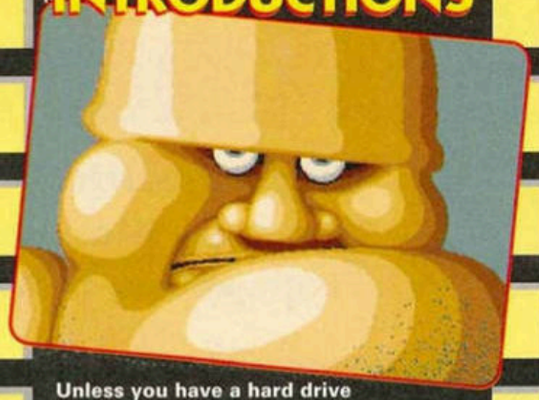
Suppose the character is standing still and about to start walking to the left. While the current frame (the one you're watching on screen) is drawn, the computer reads the joystick port. The animation routine is examined and the correct 'rectangle' for walking left is called from the grid via its reference number.

This frame is then placed on to the background graphics in RAM – all while the screen you're currently watching is still being drawn. But if the character was slapped straight on top of the background graphics there would obviously be a huge rectangle around him, which would ruin the effect. To stop this, the neutral colour is masked out, and the character simply stamped on to the background graphics. This happens just as the display of the current screen finishes, and the new screen – composed of background graphics and stuck-on character – is displayed. This means that a character can be displayed anywhere, on top of any background graphic and you can still see between their arms and legs. It also means that they are smoothly animated without relying too much on a preset series of animations.

There's no need to draw the character facing both left and right – your ST takes one frame and flips it vertically. Similarly the transitional frames between crouching and standing can also be used when the character lands, or when he crumples in a death animation.

Prince of Persia is the classic animated game, and introduces a heightened element of predetermined animation into the affair. Rather than the character turning instantly or stopping on a sixpence on your instruction, the programmers forced a level of real-world physics into the equation. If the Prince is running, he has to slide to a stop. The second the joystick goes into the stop position after a run, the next few frames (covering the slide, the gentle halt and that famous body wobble) are chosen by the program and he slides to a halt. And wobbles. Simple and highly effective. ***stf***

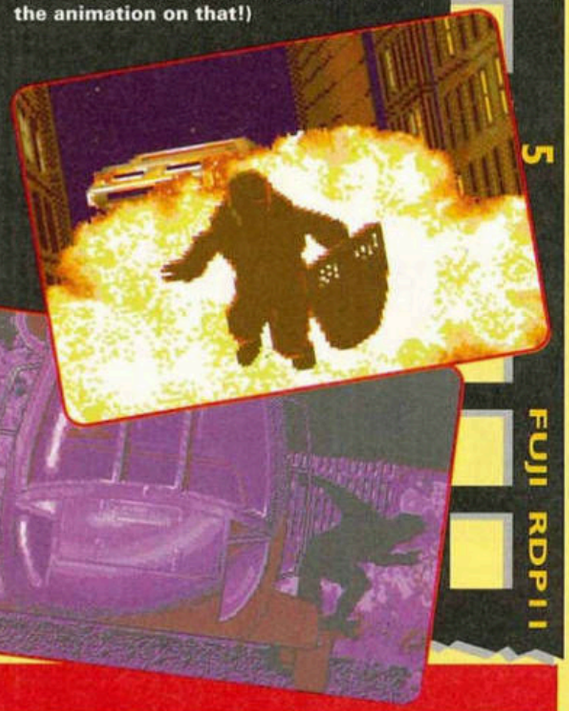
GREAT GAME INTRODUCTIONS



Unless you have a hard drive the size of Kent you're not going to be knocking up *The Lion King 2* on your ST. But to give you an idea of the kind of thing you can achieve (or be 'inspired by'), go through your games back catalogue and take a peek at the intros. You know, the bits you always skip. These not only set the tone of the game (and often stand in for the gameplay) but also make great screenshots, and might inspire you in creating your own animations. Here's our top ten:

1) **Chuck Rock**
2) **Thunderhawk**
3) **Lemmings**
4) **Predator 2**
5) **Populous 2**
6) **Robinson's Requiem (Falcon)**
7) **Epic**
8) **Killing Game Show**
9) **Frontier: Elite 2**
10) **Dragon's Lair et al**

(So *Dragon's Lair* was virtually all intro, but forget the gameplay, just look at the animation on that!)



IT'S ON THE DISK!

So you've read the feature, made the flickbook, had the idea and want to get started? You need *Animate 4*. This file sequence player enables you to play all those SEQ and DI? files you've knocked up in *Cyber Studio*, *Cyber Control* and *Cyber Paint*. Follow the instructions on how to decompact *Animate 4* from the Cover Disk (page 6), then double-click on ANIMATE.PRG to run the program. Once it's booted up click on the SEQ button which will take you to a file selector that enables you to access the two example files (BUZZBEE.SEQ and CUBE1.SEQ). Watch them and go "Ahhhhhh, isn't that pretty?"

Then get your *Cyber* goodies out and start creating. If you haven't got the *Cyber* Suite, don't panic. 16/32 Systems are selling *Cyber Paint v2* and *Cyber Control* for £25 each and *Cyber Studio* for £15. Just ive them a call on ☎ 01634 710788 and they'll get you animated!

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Club : Sponsorship, Ground improvements, View opponent, Finances

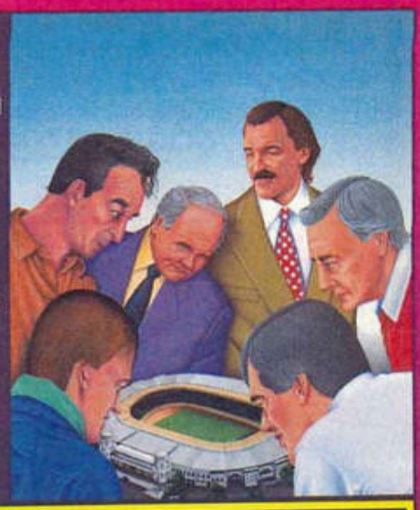
The Match : Real time scoreboard reporting goals & injuries yellow/red cards, Sound effects, Interventions permitted at any time to change tactics, formations and make subs. Physical graphical penalty participation (optional). Over 80 different referees.

Other : Fast load/save, Printer access, 20 Options to set various game preferences, Instruction book, Easy to play, Technical support.

Plus : Over 100 other meticulous refinements impossible to list here.

Editor: Allows you to amend various items in saved games. £12 Extra

Scottish : Dedicated version full details upon request.



STABLE MASTERS VERSION 2

This game has been designed to be as close to real racing as possible. Five years of development by a clever racing expert has led to the second revision of this Flat Horse Racing Simulation.

Up to 4 players can participate as Owner Trainers with the primary objective of becoming the top rated trainer, in respect of prize money won, at the end of each racing season (March to November). There are up to 35 other intelligently controlled computer trainers to compete against and compare your personal performance. To achieve this aim you must discover a potential champion and train them so that they become capable of competing well and winning any of the 47 big prize money races (Handicap and Group), eg. The Derby

To give you an idea of the tools provided in this game to assist you reaching your objective we have listed the main features below:-

- 250 horses each with over 60 independent variables.
- 26 different race courses (2 all weather), real life characteristics mirroring the diversity of racecourses in the UK (descriptions provided).
- Formbook and Win Summary Cards cover the previous 200 races.
- Animated race display or just the result. View Declaration List for races.
- 20 Jockeys who vary in ability and booking fees, Orders & Feedback.
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- Racecards similar to racing press. Real life. Handicaps & Race Types.
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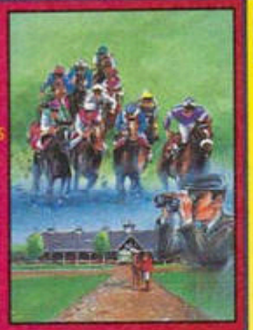

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Open National Tipping Competition : Organised by Racecall, Tote regulated, this program achieved joint second. This led to a serious approach from a well known national book maker. Rejected in favour of supporting the public.

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User Friendly : No racing knowledge required, easy to use, full tutorial book plus full time technical support.

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CU AMIGA MARCH 1994

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"Oracle is stunningly accurate"

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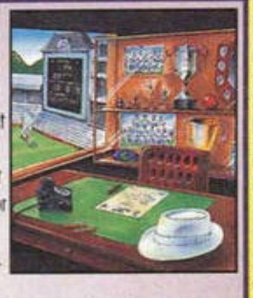
CRICKET MASTERS

This is a purely managerial cricket manager game that concentrates on strategy and includes plenty of relevant statistics. The game has been designed and developed by a true fan of the sport. It replicates everything that a real manager has to contend with and it's a totally unique production that all Cricket fans should experience.

A summary of the main features is shown below:-

- AXA EQUITY & LAW 18 league county teams, 50 overs per game.
- 4 Cup competitions including Benson & Hedges, Nat West.
- 20 different match umpires with accurate names and strictness.
- Accurate player details Surname, height and age.
- 27 different player attributes. Most skills have a direct impact on the effectiveness of each individuals actions during a simulated match.
- Easy player selection. All game text is clearly presented.
- Batting and bowling averages. Top batting and bowling tables.
- 3 Different training intensities to boost batting, bowling or fielding.
- Weather, pitch and light often make an impact on ground condition.
- Full match highlights let you watch the action ball by ball with full graphics and/or realistic sampled sound effects for significant events (Fours, Umpire decisions, etc.). Interventions are permitted at any time to change batting tactics or fielding placings.
- 3 Batting/Bowling classifications.
- 15 different field placings.
- Full scorecard results with best batting and bowling figures.
- Other staff (Physio, Groundkeeper, Scout) can be hired and fired .
- Annual league fixtures listing. Current week and last league results.
- View current cup competition draws and historic records.
- Real time transfer market. Player contract and wage negotiations.
- Sponsors, Finances, Poor ground fines, Manager rating.
- 15 Options to alter game prefs., Load & Save game, Printer access.
- Full instruction book with plenty of examples. Plus Many More.



WORLD CUP CRICKET MASTERS

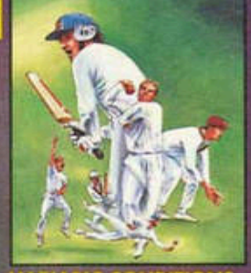
A fantastic graphical and/or tactical representation of Cricket that has been completely written by a traditional fan. You can physically participate with batting and/or bowling or leave it to the computer to automatically handle. See full feature list below :-

PLAYER VARIETY
- Rated on 8 adjustable factors.
- Left and right handed players.
- Range of batting types.
- Editor to amend game stats.
- Bowler types include seam, swing, change and both types of spin with 8 speed levels.

GAME OPTIONS
- 1 Day limited overs or test.
- White or coloured clothing.
- Three Cricket grounds.
- Load/Save game. Skill levels.
- Computer/Human players.

FRIENDLY CONTROLS
- Icon driven with point & click.
- Large 3D scrolling screen covering the entire playing area.
- Mouse controls bowler's line, length, direction field settings.
- Joystick control of batsman's attack level, strokes and running between wickets.

STATISTICS
- Scorecard & bowling analysis.
- Weather and ground reports
- Wagon Wheel
- Manhattan Chart.



VARIABLE CONDITIONS
- Surface and pace of pitch
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					STABLE MASTERS V2		24.95	
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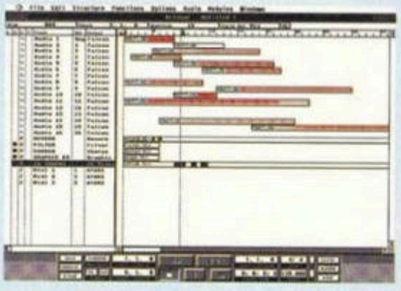

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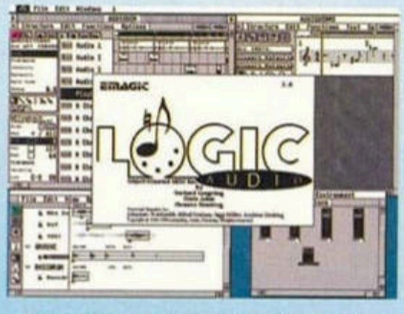

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System Solutions Company of the Year 1994

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Best Software Upgrade 1993 & 94 - ST Review.

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MagiC is a full TOS replacement; a very fast disk filing system; has accelerated serial, midi and printing routines; and is, of course, a true pre-emptive multitasking system. **MagiC Desk**, a replacement Desktop and a powerful command shell are included. **MagiC** runs on all ST, Mega and TT computers with 512Kb, but 2Mb is recommended for a useful working system.

The Falcon version is expected later this year.

"It's like running an accelerator and getting the multitasking thrown in for free."
ST User, February 1994

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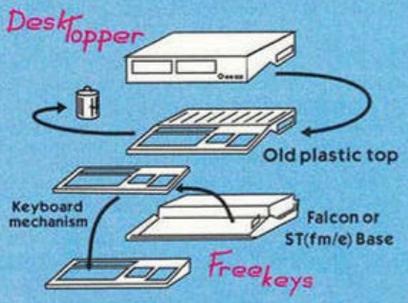
No space for accelerators, TOS boards, hard disks, graphic cards and PC emulators? Convert your Atari into a desktop computer with more space. Simply replace your plastic top with the DeskTopper and fit your keyboard into FreeKeys (or replace with a PC Keyboard using AT-Key). For more information, ask for the DeskTopper leaflet.



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ATARI WORKSHOP Happy New Year to all our customers

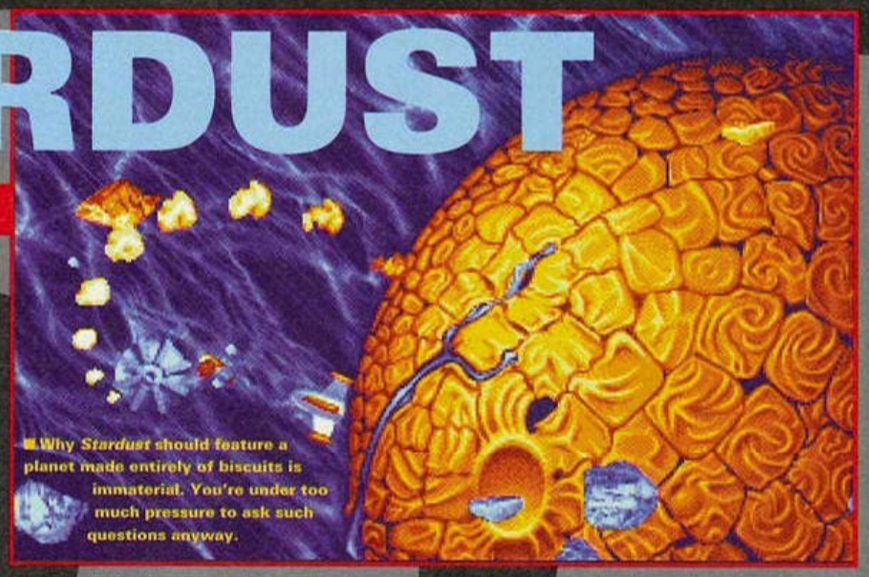
THE '95 PERCENTERS

Things are looking good for STE and Falcon games. To prove it, three games, already 95 per cent complete and due out in early '95, show off just what they're capable of.

STARDUST

PREVIEW

BY: BLOODHOUSE
DISTRIBUTED BY: DAZE MARKETING
MACHINES: 1MBYTE STE, FALCON
PRICE: £25.99
RELEASE DATE: IMMINENT



■ Why *Stardust* should feature a planet made entirely of biscuits is immaterial. You're under too much pressure to ask such questions anyway.

By now you've probably seen and played the Cover Disk demo of *Stardust*, the new shoot-'em-up from Bloodhouse of Finland. The game itself is an *Asteroids* clone with the graphics updated to take into account the wondrous nature of the STE's artistic capabilities. As with *Team* and *Obsession*, Bloodhouse's new game shows off just what the STE is capable of, and leaves you wondering why software producers just haven't managed to get their acts together before now. It's mainly the independents like Bloodhouse that are showing a keen awareness of the machine they're developing for and making the most of its enhanced abilities.

Stardust was a fast and ferocious shoot-'em-up on the Amiga, and even

OBSESSION

PREVIEW

BY: UNIQUE DEVELOPMENTS SWEDEN (UDS)
DISTRIBUTORS:
MERLIN ☎ 01453 882793,
JCA EUROPE ☎ 01734 452416
MACHINES: 1MBYTE STE, TT, FALCON
PRICE: £24.95
RELEASE DATE: IMMINENT

When we first previewed *Obsession* back in issue 64, none of the missions had been added to the one table we played. More recently, UDS gave *ST FORMAT* an exclusive sneak preview of how the game is shaping up near to its completion, and it's looking damn good.

The three tables we've seen are Desert Run, Balls & Bats and Aquatic Adventure. Each comes with its own impressive soundtrack, and Balls & Bats even features crystal clear sampled speech.

Obsessed?

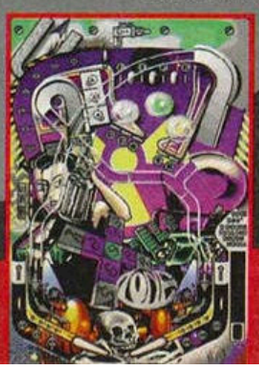
The bonuses and gameplay are based around the theme of the particular table you're playing. On Desert Run, for example, you have to travel between Paris and Dakkar. Each stage is completed by lighting up all the lamps to spell 'pitstop', but to do that you need to fill your car up with gas, and before you can do that you have to collect money (in the form of Kronor). If that's not enough, there are also countless bonuses to collect.

The Balls & Bats table is where pinball meets baseball, your aim being to win the World Series. Aquatic Adventure, on the other hand, takes you under the sea in search of treasure (your obstacles including ferocious sharks and evil Captains). The final table, which we saw in the original preview is X-ile, and is set in the aftermath of a nuclear holocaust.

Looking good?

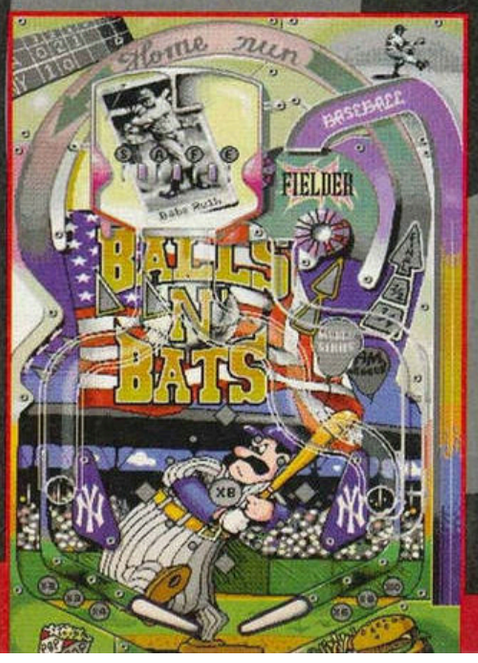
It sure is. The STE's enhanced capabilities have been put to good use; the tables are superbly detailed with lots of colour on screen. The animation and scrolling is super-smooth and, as with *Team*, overscan has been used to remove all those annoying borders and give up to 40 per cent extra screen space.

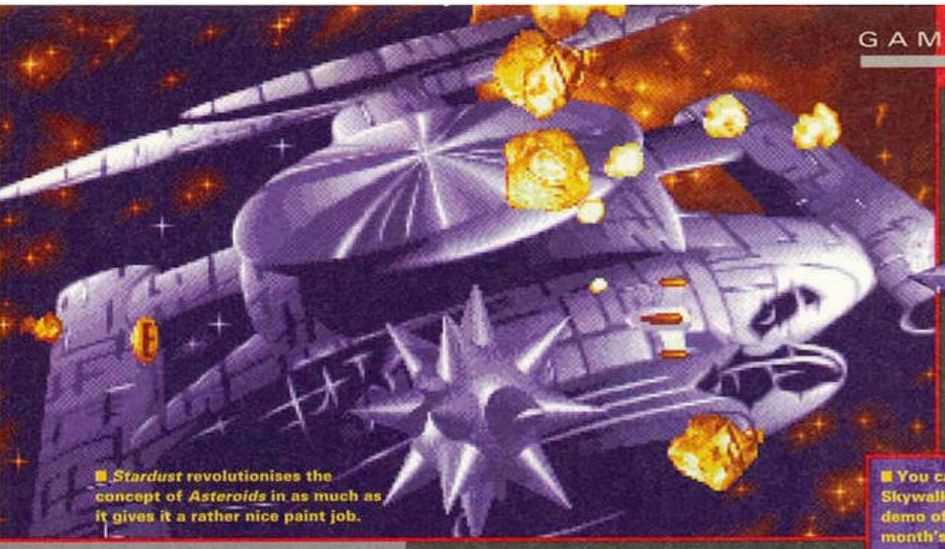
The soundtrack is superb, and varies with each table. The Balls & Bats table features sampled speech of the highest quality, while the spot effects come across clearly and are easily distinguishable from the background tune. And the whole game is incredibly addictive. Just wait for the definitive review when it appears soon in *ST FORMAT* – *Obsession* looks like it's going to be well worth the long wait.



■ When you're living on the edge in a dark, dangerous post-atomic world, why not have a quiet game of *Obsession* to get away from it all? *(He's not been well – Trent)*

■ The Balls & Bats table manages to combine pinball with baseball for what must surely be the first (and possibly the last) time in world history.





■ *Stardust* revolutionises the concept of *Asteroids* in as much as it gives it a rather nice paint job.

■ You can even mimic Luke Skywalker with our exclusive demo of *Stardust* on this month's Cover Disk.

scored 89% from Jon Nash in his review for *Amiga Power*. Once you've played our exclusive demo of one of the game's sub-levels you'll realise that the speed and smoothness of the Amiga version has been achieved on the STE too, using its blitter chip, hardware scrolling, 4096 colour palette and the rest.

What can you say?

Well, what *can* you say about a game that's *Asteroids* but with superlative graphics? Apart, from the 3D sections that is. But in fact the programmers have obviously thought this through already and added a few extra aspects to the gameplay. For example, there are now different kinds of boulders, some of which are easier to destroy than others.

From the second level on, the blighters have added monsters, obviously to remind you that in real life this much excitement is usually muted by a real feeling of fear. Oh, and there's lots of power-ups too. Play the demo and if the full game turns out to be as good as it looks, buy the game. Daze are on ☎ 0171 372 7435.

TEAM

PREVIEW

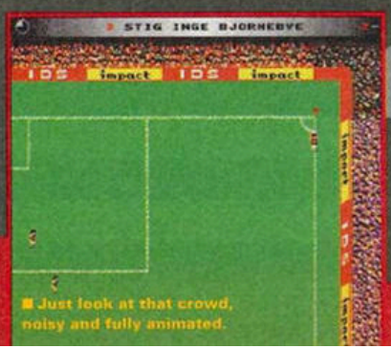
BY: IMPACT SOFTWARE
MACHINES: 1MBYTE STE, TT, FALCON
PRICE: £24.95
RELEASE DATE: EARLY JANUARY (STE)

Team is yet another game that aims to demonstrate just how criminally underused the STE has been used as a development machine. We featured an exclusive interview with the game's programmer, Ralph Lovesy, in last month's issue, where he rigorously demonstrated just how the game was going to use the STE's enhanced specs.

But *Team* is, first and foremost, a soccer game in the mould of *Kick Off* and *Sensible Soccer*. We've been flagging its technical specifications, such as its use of the blitter, overscan mode and 50KHz sound, but what does it all mean? Does it lead to the ultimate STE football game, or a complete turkey? You'll have to wait for the definitive *ST FORMAT* review of the full game to ascertain that, but in the meantime get all excited over the options *Team* promises.

Team Talk

Team is one or two player, with computer opponents of varying strengths depending on the team. The basic mechanics of the game are all there, including a realistic 3D environment which means that, unlike *Kick Off* and *Sensible Soccer*, you can't run through players, the corner flags or even the goal. So it's one thing chasing a player on the ball, but it's going to be something else dispossessing him of it.



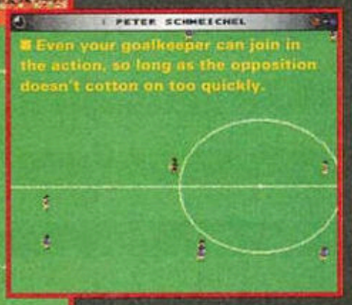
■ Just look at that crowd, noisy and fully animated.

Tackling from behind may seem like a valid option, but the game has been programmed with fully animated referees and linesmen, complete with red and yellow cards. The latest rules are all incorporated, including the backpass and offside rules, so watch out – a dodgy tackle could have disastrous consequences.

Managerial decisions

Just like *Sensible Soccer* and *Kick Off*, there are loads of options, enabling you to configure the game exactly to your personal requirements. The game comes complete with all the teams from the latest World Cup and English Premier League, and data disks will soon be available for other teams to be incorporated. Or you can create your own, complete with home and away strips, player colours and attributes. So look out for a Birmingham City XI soon.

■ Unlike *Sensible Soccer* and *Kick Off*, a one-on-one with the goalkeeper can easily lead to a goal in *Team*.



■ Even your goalkeeper can join in the action, so long as the opposition doesn't cotton on too quickly.

You can compete in a completely user-defined league or cup competition, selecting whether extra time, replays, penalty shoot-outs or even away goals play a part. You can select your team to play any number of tactics and make up to five substitutions during the match (including your goalkeeper if need be).

Bruce Groobelaar

There's plenty of room for inspiration in *Team*. Because of the realistic environment you could be cruising to a 1-0 victory when a speculative lob into your area cannons into your own net off the back of your defender. Even the goalkeeper is able to run halfway down the pitch (especially if he's just received a backpass) and score a spectacular solo effort. Then again, he might just get dispossessed outside his own area, and suddenly you're another goal down. Tsk.

The real test of *Team's* unpredictability, of course, is whether you can go 4-1 up with just 25 minutes remaining and still lose 6-4. But enough about Birmingham City's last season (they're doing much better this year anyway), contact Impact on ☎ 01280 850450 for the latest news.

View 2

Desktops. Hundreds of files sitting around, giving no clue as to what they contain. Is it a picture file or a text file? There's no way of knowing. At least, there wasn't, until now.

As an ST user, you're used to dealing with a wide variety of files. But when you're manipulating these files through folders examining them becomes a hassle – you have to laboriously load up your whichever package they were created in every time.

FaST Club have come up with *View 2*, which helps with general file dealings. It opens just about every different type of file you use from day to day, so you don't have to mess about with something as bulky as an art package just to check what's sitting in a PI2 file.

The manual gives you some idea of how powerful and versatile this package is before you've even loaded it up, skipping through text viewers, picture display utilities, digitised sound-files and animation-files as the four main types of files you can manipulate with ease. And the features don't stop there.

Nail files

To be effective *View 2* has to know just about every text format, every picture format, every sample style, and every animation system. Start throwing text-files at the package and you soon realise that it handles most formats. But then most text formats are fundamentally identical, consisting of long stings of ASCII characters. *View 2* handles TXT, ASC, DOC and 1ST formats, and if you have a text-file that doesn't fit one of those standards then you're weird.

Picture formats are a different thing entirely. If you've ever spent an afternoon trying to process one picture you'll know picture formats are truly frustrating territory. No problem. *View 2* deals with PI1-3, PC1-3, TNY, TN1-3, NEO, DOO, ART, SPU, SPC and SPS. ST owners can also use the package to view STE pictures (something you couldn't normally do). And it deals with SEQ and DLT animation files happily, even if you don't have enough memory.

The interfaces for viewing all these file types perform with far more grace than GEM could ever imagine

The sample viewer (or should that be listener) follows suit, dealing with a wide range of sound formats; AVR, WAV, SND, SPL and SAM files coast through your speakers at the click of a button.

The interfaces for viewing all these file types perform with far more grace than GEM could ever imagine. A text-file viewer that enables you to scroll backwards, flick pages and get to the end of a file without accidentally closing it? The other viewers work in the same way – not too complicated, just friendly and flexible.

Something-else files

The success of *View 2* depends on other factors apart from its flexibility. Its front end and ease of use are also vital. But this is where it blows the competition clean away: it has no front end at all, and if you have a hard drive it doesn't even take up any memory. The system works by patching GEM, so that when you double-click a file that isn't an application *View 2* boots up and displays the file, whichever format it's in, vanishing again when you've finished. It just tacks itself on to your desktop system. If you don't have a hard drive, *View 2* loads itself into memory at start-up and stays there, taking up a piffling 48K.

Rockford files

And then there are things like archive files. Archivers, although in practice an excellent idea, traditionally don't work. They're the kind of files that everybody seems to have a deep understanding of except you – no matter who you are. If you acted on our advice last month and took a stroll down the infobahn, you should now have a hard drive stuffed with LZH and ARC files, only half of which are ever likely to surrender their contents. The others will just crash or refuse to work. This isn't a fault with either archive systems, it's just the way computers work. They're complicated things and given half the chance they always go wrong.

View 2 can't guarantee the success of file transfer over a dodgy telephone line, but it can make damned sure that if a file's usable, you'll be able to extract what you want from it quickly and easily. *View 2* doesn't actually contain the necessary extraction code, but it calls up the appropriate extraction program (that you already own, hopefully) and tells it to get on with the job.

Chemical phials

What you have here is a program that kills one of the bigger problems with GEM. Instead of staring at icons and file names, unable to even guess at their contents, you can access any file type your ST throws at you. The closest thing to *View 2* so far is *GEM-View*, but *View 2* really can handle just about everything. Having failed to find any real fault with it I'll be making great use of it from now on. ***stf***

SIMON FORRESTER

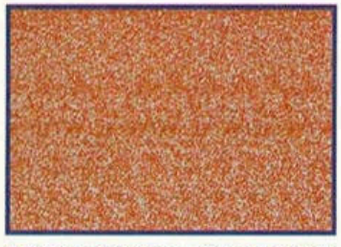
View 2

£14.95 FaST Club 0115 945 5250

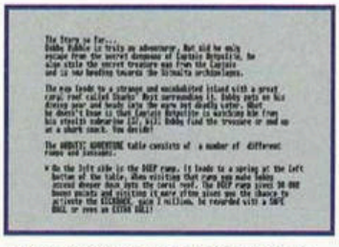
Highs
- Copes with just about anything
- Quickly accessible from your ST desktop
- Compatible with everything

Lows
- It doesn't work with IMG files
- Then again, nothing else does

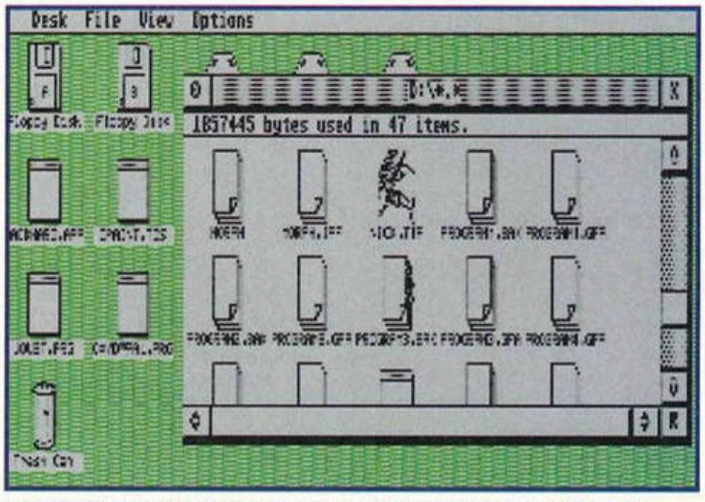
90%



■ **This is a stereogram, although I didn't know that until I'd double-clicked on it and *View 2* displayed it.**



■ **Alternatively, you can display text-files and use *View 2's* advanced display features to scroll gaily through them.**



■ **Now just look at that. How are you supposed to know what any of these files might contain? Eight letters and a suffix doesn't exactly give a full description of what's in a file. System extensions are cool – huh ahuh huh huh. *(Yyyeesss – Trent)***

Art For Kids

It's an art package aimed at the chunk of the human race who're without the intelligence or awareness to get bored or realise they can't actually draw. One for Simon, then...

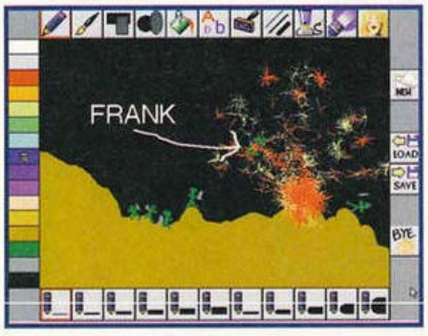
When I was little, I adamantly avoided anything that referred to me as a 'kid'. *Art For Kids* manages to get off on the wrong foot with its target audience straight away, then. At least, until the so-called target audience loads it up.

The package opens with a fanfare (first thing on a Monday morning too) and cheery balloons flying about the shop. From then on, things are really quite simple: a large blank screen bordered by tools, colours, palettes and options. The first thing that's apparent is that *A4K* works in exactly the same way as every other decent art package, ever – it uses tools. Which means that immediately after loading *A4K* and enduring the bright, cheerful welcome, you can begin to draw immediately. Then stop in surprise.

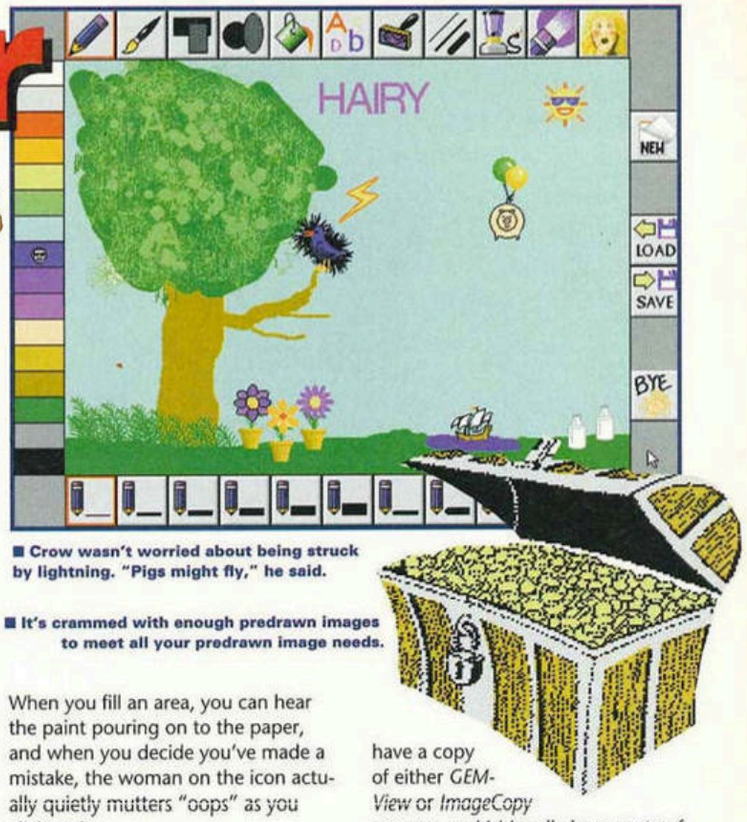
You'd really expect a package called *Art For Kids* to be a normal art package but much lower quality and and with a quarter of the features. *Art For Kids*, however, scares the hell out of your average half-dozed reviewer.

Bells and whistles

Everything has a sound effect. Clicking a key creates a beep, but that's dull. When you use the pen, you can hear it scratching on the paper, and when you use a stretch line, you actually hear it stretch. The sparkly brushes crackle as you use them, and the odd, geometric effects make alien noises as they go about their odd, alien business.



■ Although it's an art package, this is also capable of political cartoons, kids.



■ Crow wasn't worried about being struck by lightning. "Pigs might fly," he said.

■ It's crammed with enough predrawn images to meet all your predrawn image needs.

When you fill an area, you can hear the paint pouring on to the paper, and when you decide you've made a mistake, the woman on the icon actually quietly mutters "oops" as you click on her.

I can't draw!

That's the other problem with kids – most of them can't draw. Now most of them probably can't draw to a level that they're quite happy with. The remainder, who can't draw even to their own satisfaction, are only going to find your average art package depressing. Tony Barker, author of *A4K*, obviously recognises this problem. There are a number of predrawn images that can be called up and worked with, as well as some component picture elements that can be stamped on to the kid's own drawings (leaves, balloons, trees, castles, flowers, and many others). Even the most incompetent, oafish, uncoordinated rug rat can use Fuzzy Felt to some degree.

But it's an art package, isn't it?

Well yes, and no. For an art package, it's a bad one – there's no Cut and Paste, no Copy, no Zoom, no Box effects (things like axis flipping can only be performed on the whole screen) and no comprehensive colour tools. Instead, there's a series of brushes to work in one of the 16 carefully-picked colours, pens, erasers, and fills. Oh, and the special effects. For special effects, they're not that useful, but they're a lot of fun – inversing, random patterns, checkering, patterning and many others can all work wonders on even the most boring image.

There's no Print option, either – but then, anyone with a printer will have a copy of either *GEM-View* or *ImageCopy* anyway, and it'd really be a waste of time you bothering to use any other (or so Goodman International say, and I'm inclined to agree).

But despite this lack of conventional features, the whole thing, works excellently for kids. They don't want stippling effects, palette switching, graduated tints, anti-aliasing and a hundred other dull, pointless features; they want some bright, cheery paints, some simple but effective brushes, and entertainment, as well as a little help with their work. If you have a child between four and ten and they want to have fun on your ST, then you have a choice. You can either slap their wrists firmly and look down your nose at them, muttering something about "it's not a toy, you know" and have them grow up odd, or you can splash out £24.95 and have a normal, happy child that Santa Claus would approve of. **stf**

SIMON FORRESTER

EDUTAINMENT

Yeah, yeah, it's one of those horrible, '90s phrases, but the educational qualities of a package like this have to be considered. Sure, it is only an art package for doodling, but things like doodling are encouraged in schools at an early age, despite the sheer volume of paint kids swallow daily.

If you have a young child, or you're working with SLD or MLD children, you'll find a package like this no end of help. For an art package it's novel in that the software actually makes noises corresponding to what's happening on screen. This may just sound like a gimmick, but in teaching children textiles and the way materials interact with each other it should be an invaluable learning tool, drawing real parallels with physical drawing tools.

Children love to paint, and they love to have fun. Teaching them art with the aid of a piece of software that can keep a jaded writer *(and a production editor – Jill) (and an editor – Trent)* engrossed for a morning just trying out the different sound effects has to be a Good Thing. The more fun 'the kids' are having, the more they'll relax and learn.

Art For Kids

£24.95 Goodman Int'l
☎ 01782 335650
1MByte STE minimum
Falcon and TT versions supplied

Highs
- Massively entertaining
- Easy to use
- Full of ready-to-use drawings

Lows
- Hugely unpowerful
- But I doubt little Johnny'll care

90%

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• ***Brand New! DA's Layout TC (True Colour)***		
Price to be announced		
• ***Janus ST Emulator for PC***		**£299.00**
Hardware 68000 Processor 16Mhz		
Tabby Graphics Tablet & Quill	~~£79.94~~	**£69.99**
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Epson GT-8000 Parallel + SCSI I/f	~~£1,268.00~~	**1,199.00**
Inc. GT-Look:II & DA's Picture Photo Retouching Software		
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Memory Expansion Board (4Mb or 14Mb)		

DA's Vector Pro
ST Format Gold Award 90%
"A richly featured GEM-Based program which offers impressive graphic design facilities..."

DA's Picture
ST Format Gold Award 91%
"DA's Picture is flexible, very powerful and for the most part, mercifully easy to use."

Chagall
ST Format Gold Award 94%
"Chagall is fast, powerful and generates brilliant results."

Quill
STF Rating 84%
"A new easy to use freehand drawing program that's as versatile as pen and ink...absolutely brilliant."

InShape
STF Rating 85%
"InShape is designed to perfection...and is, without doubt, the best 3D modeller and animation program we've seen yet for the Falcon."

Digit Sound Tracker
ST Format Gold Award 91%
"Digit is a polished piece of software...capable of bringing the musician out in almost anyone."

Music Mon 2
STF Rating 79%
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500MBytes of German PD and shareware for the ST, all on one CD. Can you handle it?

■ The citadel loomed out at him from the screen. "Dodgy brickwork," Tarquin said, "and where's the atmosphere?"

STE Power CD Volume 1

Where do you start with a CD like this? Tip number one: get a working knowledge of German, or alternatively a copy of a German-English translation program (look in the public sector) with German-English dictionary. Oh, and a CD-ROM drive would be more than handy (if you don't have one you can use a PC that has a CD-ROM drive to access the files, then copy them over).

These minor quibbles aside, the *STE Power CD Volume 1* cannot be disputed in terms of value for money. 500MBytes of PD and shareware programs for your ST would cost either hundreds of pounds in blank disks, or hundreds of pounds in phone bills downloading the equivalent amount from a BBS. If that wasn't enough, the fact that this is a CD packed with German software inevitably means that there are programs and data on it that you wouldn't otherwise be able to get easily over here. However, while 500MBytes may sound great in numerical terms, the phrase "quantity rather than quality" does tend to pop up in your mind.

split between various program types. You'd be right in being suspicious of the large number of picture files enclosed, because they take up a huge chunk of the 500MBytes. However, the pictures are professionally drawn and, being GIFs and TIFFs, they have plenty of colours that even STE owners may get to see. Graphics aside, there are 120 MOD tunes created using *Tracker* programs (but they are, as ever, dance orientated).

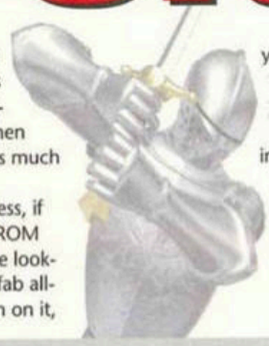
And then there's the 'real' stuff: demos of commercial software, games, utilities, applications, Falcon-specific software and the like. About 50 per cent of the programs featured seem familiar, but there are plenty of others included that have probably never seen the light of day in this country before. One possible quibble is that the CD tries to be "all things to all men", so if you're only interested in one aspect of your ST (such as desktop publishing, or music) then you won't get as much from it.

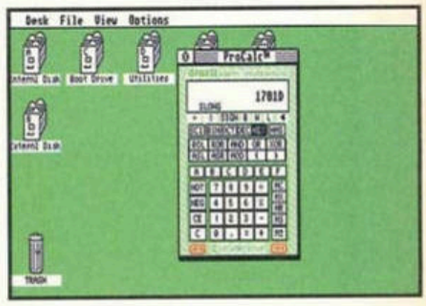
Nevertheless, if you have a CD-ROM drive, and you're looking for a rather fab all-round CD to run on it, you don't need to look much further than the *Power CD*. Unless you're a mad xenophobe of course. The convenience of having everything supplied on one CD shouldn't be overlooked, and you never know – it may open up new areas of ST use that you've never thought of before for you to explore. **stf**

NICK PEERS

CD or not CD?

You can see by examining the boxout just how the *Power CD's* contents are





■ All sorts of useful programs are on the *Power CD*, such as *Procalc*. You'd be hard pushed to find nothing of value.

THE FULL LISTING

It would be all too easy to turn a review of a CD like this into a glorified list. Instead, here's a brief run-down of some of the ST and Falcon software that's featured on the CD:

Games

Comparatively few (50, in fact) games are featured on the disk. None seems to be particularly familiar, but the few that do stand out are German. While you may have problems deciphering the German, you're unlikely to have come across most of these beforehand. All sorts of games are catered for, from adventures to arcade via strategy games.

Demos

Plenty of German commercial software is featured here, only a few of which are well-known on these shores: *True Paint*, *Edhak 3*, *Studio Photo*, and *That's Address 2*. Of the others, most appear to be exclusive to continental Europe, so this CD provides your best hope of trying out software unlikely to be directly released into the UK.

Applications/Utilities

We'd be here all night trying to list this lot. Just regard yourself as picky if you couldn't find at least five programs you need among the mass of copiers, RAMdisks, replacement file selectors, memos and even astrology programs on offer. There are literally hundreds available.

Falcon

There are over 100 programs for the Falcon, including demos of commercial products (such as *Screenblaster*, which scored 85% last month), more frivolous demos, utilities (including three versions of *Backwards*), music and loads of graphic viewers.

Others

As mentioned in the main body text, there are also more than a few graphics and music files for the art-critic-cum-musicians among you.

£25 for a wad of programs that would cost you anything up to £500 separately. The words 'bargain' and 'veritable', not necessarily in that order, spring to mind.

STE Power CD Volume 1

£24.99 COMPO Software
☎ 01487 773582

Highs
- £25 for 500MBytes? Beat that for value!
- Lovely pictures

Lows
- It's in German
- Too many pictures

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GAMES

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G.352 JEWEL BUGGY: Arcade diamond mining game (S/W)
G.333 SUPER PSYCHO KART: High speed platform game to rescue piglets (1mb S/W)
G.316 HMEC 2: The ultimate Pac-man? (1mb STE or Falcon)
G.286 ROCKFALL - SPECIAL EDITION: Tunnelling/diamond collecting puzzle game.
G.281 PSYCHO PIG: Platform shoot'em up with Rambo-esque pig. (2 disks £3.00 S/W)
G.279 OPERATION GARFIELD: Frantic 'Operation Wolf' type shoot'em up action. (STE)
G.268 MEGALINE: 1mb Tron' light cycles game for 1 - 4 players (STE only)
G.250 CYBERNETICS: Good, challenging 'Defender' type arcade game.
G. 80 TETRIS & PILE UP: Two very good versions of the 'Tetris' arcade game.
G.171 HACMAN II: 1 megabyte version of Pacman, 100 new levels!
G.221 GRAV 2: Follow up to highly praised 'oids' type rotate and thrust arcade game.
G.110 LLAMATRON: 100 levels of fast arcade action with wicked sound X (S/W)
G.150 COLUMNS: An impressive relative of the Tetris tumbling block game (1mb)
G.201 BLATT: Tetris style three in a row, falling blocks with many added features

FANTASY/ROLE PLAY

G.351 TOWERS: First-person view role playing fantasy adventure game (2 disks) £3.00
G.308 WALLS OF ILLUSION: The ultimate Dungeonmaster clone...but it's in German. A knowledge of the language is a distinct advantage but not compulsory
G.343 BLUDGEON: Solo fantasy adventure using the Blugeon combat system (S/W)
G.288 DARKLYTE: 'Space Crusade' type droids wargame.
G.262 ALIENS! Space Marines v. Aliens strategy combat game.
G.115 MYSTIC WELL: Complete 'Dungeonmaster' style adventure game.

PUZZLE

G.315 SKULLS: Addictive up to date reworking of landmines/Minefield (1mb STE)
G.306 LOGIC PROBLEMS II: Three more logic problems from Ben Weston.
G.310 DOMINOES: Playable demo version of a domino playing program.
G.311 JIGSAW: A computerised jigsaw puzzle. (1mb)
G.280 COLOUR CLASH: Adventure/Maze game with puzzles by Animalsoft. (S/W)
G.269 QUIZMASTER: Multi-choice answer general knowledge quiz. (STE only)

ADVENTURES

G.356 ENDURANCE: A futuristic 'virtual reality' adventure.
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18 Phone for list of games

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X-Debug

The Black Scorpions' new machine code debugger may be incredibly complicated, but we've got the experts in to make this review sound vaguely knowledgable and clever.

Okay – let's get one thing clear from the start. Machine code is not something you learn. Machine code is something you become, in a Zen kind of way. There are universities packed with eager beavers trying to gain ultimate power and wisdom, and they're missing the point entirely. Machine code is something that happens to you. Imagine a version of *Crossroads* (the film, idiot) with a boy who can play a mean assembler, if you like.

Probably the scariest task you can ever attempt is to interpret someone else's code. Your code may look very neat and structured when it's in your assembler, but it looks completely alien to everyone else, and as soon as it leaves your assembler it loses all notes, layout, and form. It becomes spaghetti.

But sometimes you've just got to get in there. You may need to work out how a particular trick works, or you may even be debugging some of your own code. Whatever you're doing, you'll need a powerful utility to give you every advantage in your quest. The Black Scorpions (sounds like a bad rock band) reckon *X-Debug* is the utility to help you.

X-Debug is, yes, a debugger. This means that once you've turned your assembly listing into a machine code program, you can use *X-Debug* to go through those numbers, work out what they mean, work out how they all fit together, and work out where they go wrong. That's the idiot explanation. Now to concentrate on this review of a powerful debugger.

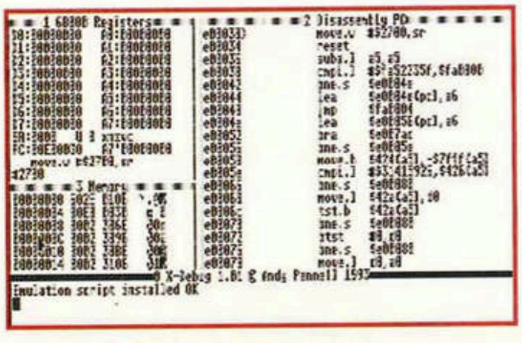
■ Not only can you get things like register breakpoints but you can disassemble from that point. Schmart.

Debugge... No, I can't

That's right – *X-Debug* is a powerful package. It comprises a full disassembler, a full monitor, as well as a comprehensive breakpoint feature. The software takes the form of a full-screen set of windows, which happily lend themselves to its many applications.

"A powerful package that carries out most of the tasks you'd ask of it in the course of a coding session"

The first and most obvious thing *X-Debug* does is disassemble. Working with quick, efficient and well-presented lists of disassembled code, *X-Debug* casts other disassemblers in shadow. Not only does it deal with a wide range of breakpoint structures, but it can intelligently handle conditional and trap comments. In short, it fills in all the gaps, from floating-point reference to backward working, without creating any extra hassle for the user (that's you).



■ Watch out for Black Scorpion's *BSS Debug*, a forthcoming contender. A comparative review in 1995, methinks.

The real joy of this package is the fact that it works with a source-level debugger, meaning that you don't have to wait until your program is a string of unintelligible numbers before you can rip it to pieces. If you're using *Lattice C*, *HiSoft Basic* and the like you can get at your work using *X-Debug* as well, which, considering the kind of editing and testing features supplied by some compilers, is most definitely a godsend.

And, of course, there're the normal monitor functions, enabling you not only to watch over your running software, keeping an eye on registers, memory locations, program counters, buffers and the like, but also to slow it down or stop it, turn it around and see exactly what's going on.

Oh, Debugge... no, no

The first possible problem you encounter with *X-Debug* is the user interface. It casts aside the GEM system and goes for a totally new, home-made interface consisting of information windows and a command line. That's right – you type your commands in. Don't you remember things like that? There's a reason for this: programmers don't want to use menus, they don't want to slide windows about, and they most definitely don't want those horrible dialog boxes. Programmers can nearly all type quickly and accurately, and you can say in one command what it takes four or five mouse clicks, window swaps, keypresses, accidental window closures and seven retries to put across with a GEM interface.

■ As you can see, the CLI interface is indeed an extensive one.

This is not a pretty program, but then the job it does isn't pretty. This is a package that's based on the same philosophy as *Protext*. Although it may not look like the best thing ever, the prettiness is exchanged for raw power. If you use *Protext* and don't mind a reduction in friendliness, you're going to get on just fine with *X-Debug*.

Having said that, the manual is pitched in a slightly different direction. The ins and outs of machine code and the relative merits of debugging it are ignored totally (quite right, too) in favour of *X-Debug* details. There is an extensive tutorial section, taking you through use of the package from step one. This is handy because there a lot of commands to learn, and if someone offers you help, you don't refuse.

X-Debug is a powerful package, carrying out most of the tasks you'd ask of it in the course of a coding session. If the authors were going in for 'incredible' as opposed to 'damned good', they'd have included a few extra options like a condensed memory map or a graphic viewer (for viewing chunks of memory as a graphic), but those kind of features are only needed once in a lifetime, so you can write your own. For now, rest safe in the knowledge that if you do write a condensed memory map utility, *X-Debug* will be an invaluable development tool. ***stf***

SIMON FORRESTER

X-Debug 1.01

£24.95 FaST Club
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Highs
- Comprehensive
- Flexible
- No nonsense CLI

Lows
- A little daunting at first
- A few too many CLI commands

83%

PUBLIC SECTOR

He's back and he's mad. As Godzilla goes on the rampage, Nick 'Godzookie' Peers scours the public domain scene for more bargains.

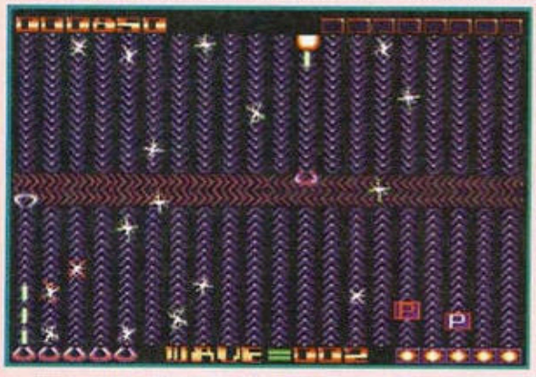
GAMES

FRANTICK

GOODMAN PDL
DISK GD2357 (TWO DISKS)

Frantick is the latest release from Davie Munsie, the celebrated American programmer whose previous credits include *Kid Kong*, and *Kaboom!* It's a shoot-'em-up with a difference, in that your character remains in the centre of the screen blasting at aliens that attack from both above and below. *Frantick* runs on any Atari ST, TT and Falcon and boasts improved features depending on the power of your machine, which means that STE owners get a slightly better game than their STFM counterparts, including compatibility with the Jaguar Powerpad controller.

The program is so large that it's best run from a hard drive to speed up the disk accesses. It's touted as preview-ware, which means that you only get one life per game and play is restricted to the first 20 levels in easy mode. This, if anything, makes the game less playable, because you tend to die quite quickly, and must then sit through a sequence of disk accesses before you get another go.



■ Mean Machine Trent gets blown away, while Cowardly Custard Nick hides in the corner.

Frantick itself certainly lives up to its name, and it causes no end of 'psycho looks' from those of us who've played it so far *(I think what Nick means is that he twitches a lot when playing it – Trent)*.

■ *Frantick* on the Falcon. Spot the differences, if you can.

It's a highly playable little game, in a mindlessly violent sort of way, although it's hard to see how such a simple concept manages to takes up so much disk space (even without any samples loaded the game still requires 670K of disk space). It doesn't quite work as preview-ware. Because of the amount of time you wait between games you need more than one life, which is yet another extremely good reason for registering.

***STF* RATING: 73%**

VIOLENT DEATH

TRANSPARENT DREAMS
DISK GAM 01

Written by Colin Watt in *STOS*, *Violent Death* is a *Scramble* clone, nothing more, nothing less. For those of you who don't know what *Scramble* is, like Jill, it's a horizontally scrolling shoot-'em-up, in which you fly through a cavern, bombing gun emplacements and blasting aliens and, oh everything. Two players can play at once and the controls are via the joystick, the only vaguely challenging bit being moving up or down while pressing <Fire> to launch a bomb. And the caverns can be agonisingly small at times. But it does provide a challenge, and two players should have fun combining their skills instead of competing for a change. Love 'n' peace.

Smoothly scrolling, if a little functional in the graphics department, *Stellar Death* is a mildly enjoyable blast and once again shows that *STOS* is not that bad an engine for writing simple, sprite-based games as long as you're prepared to accept its limits.

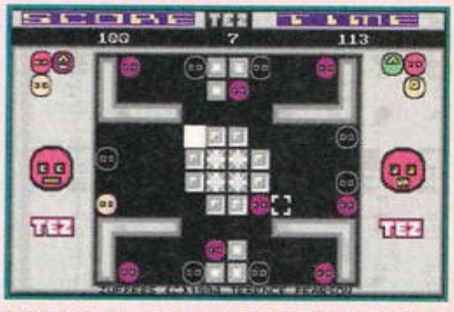
■ Kill, maim, mutilate! Whoops, sounds like *Violent Death* has got to me a bit. I'd better go and lie down.

***STF* RATING: 68%**

ZUFFERS

POWER PD
DISK PWR 480

This is a three-level demo (the full 30-level version is available for £2.50 shareware registration) for 1MByte STEs. It's a simple puzzle-up that might appeal to younger readers, in which the aim is to save the little Zuffers from death following the collision of a meteor with their planet. They've been dislodged from their shelters where they were hibernating, y'see, and your task is to move them back before the radiation kills them.



■ This is *Zuffers*, and aren't they cute? Well, you'd better start thinking of them in that vein, because it's your job to save them. Okay?

In real terms this means selecting each Zuffer in turn and sliding it back into its shelter before the time runs out. It's not as easy as it sounds, and is further complicated by the fact that Zuffers tend to remain drawn in their original positions even after you've moved them, which makes it difficult to remember just who's been moved where. It's also difficult to see where the STE's extra capabilities have been used and why 1MByte of memory is needed. Nevertheless, *Zuffers* is fun in a severely limited kind of way.

***STF* RATING: 60%**

MUSIC

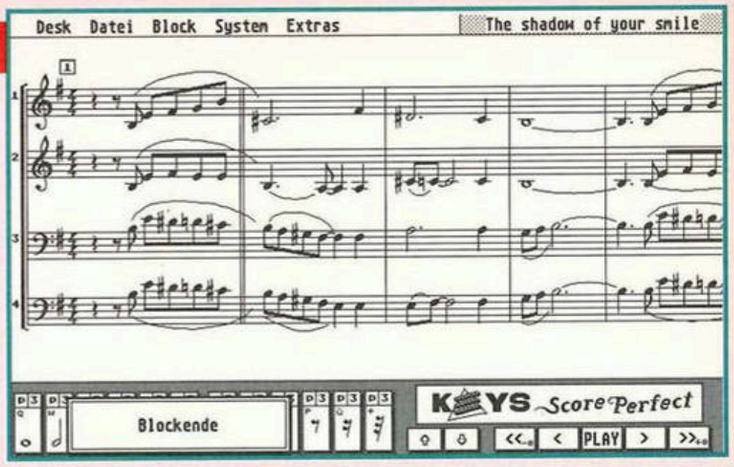
SCOREWRITER

TUMBLEVANE PD, DISK MUM 63

There are a number of scorewriters in existence for the ST, but none works on colour displays. To fix that oversight comes this disk containing two European scorewriters, *1st Note 2.0* from Austria and *Score Perfect* from Germany, both of which work fine with a monochrome emulator on colour screens. Although an English helpfile is provided, you really need to print it out, because both programs work in German.

Both programs run fine with *Sebra* installed and are perfectly readable (although obviously not as clear as they would be on a dedicated monochrome monitor). The programs themselves do their jobs well, and if you're after a scorewriter you could do a lot worse than pay peanuts for these two programs. Another bargain from the public domain.

***STF* RATING: 76%**



■ ***Score Perfect* displaying one of the example files provided. Now why isn't there *Headlong* by Queen for goodness' sake?**

STELLAR MODULE COLLECTION 11

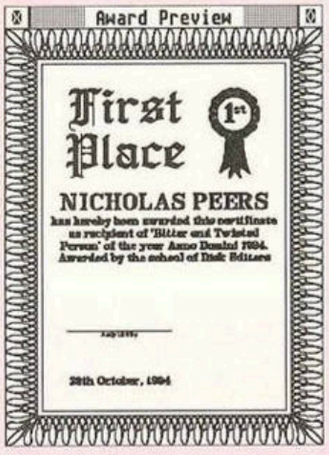
STELLAR PD, DISK STEL 40

Six modules make up this latest collection of MOD files, but the they takes up so much disk space (nearly 800K to be exact) that there isn't room for a MOD file player, like the excellent *CD Player*. But then, if you're buying a disk full of MOD files you either already have a file player or are entirely mad. The problem with this disk, like many of its kind, is that all the tunes do is slowly build up one track after the other, in an incredibly repetitive manner. *Highway*, for example, has an atmospheric intro that would be great if it weren't for the fact that it lasts for over a minute, by which time you've given up waiting for the music to start.

Nevertheless, four of the six tracks sound like some thought's gone into them, unlike the *Club Culture Mix Pack 2*. Not bad.

***STF* RATING: 65%**

UTILITIES



AWARD MAKER PLUS

TUMBLEVANE PD, DISK UTA 028

Award Maker was first reviewed back in issue 54, and scored a highly reasonable 82%. This time the programmers have removed some of the bugs from the first version (including problems with the various borders used in creating certificates), and the whole thing works much better. Those of you lucky enough to possess colour printers can create colour awards with as little fuss as boiling a kettle – the program is so simple to use that you can have your first awards out in no time at all. Over 200 award templates are provided, from history awards to sportsmanship certificates, each complete with its own little pictures, although you can easily create your own if you prefer.

Take a look at the screenshot on the left: it was created with the minimum of fuss and technical capability by filling in the gaps as prompted. The most difficult part of the whole process, apart from choosing which border best complements your award, is entering the relevant code number depending on what award you require. It's therefore best to print out the program instructions in order to make selecting your chosen award template that much easier.

You can't go wrong with *Award Maker Plus*. It does its job professionally, comes with a wide range of printer drivers, and runs in both medium and high resolution for maximum compatibility. If you need a program for creating awards (and hey, doesn't everyone?) then you need look no further. If you don't, well get this program anyway.

***STF* RATING: 91%**

■ **His complete inability to get over being dumped in last month's issue won Nick his first 'Bitter & Twisted' Award.**

ROUTE FINDER 2.0

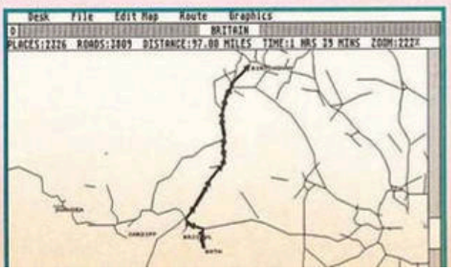
THIS MONTH'S COVER DISK (SEE PAGE 6)

In what is obviously a complete coincidence *Route Finder 2.0* is not only reviewed in PD this month but it's also on this month's Cover Disk. This, somewhat worryingly, gives you the opportunity to try it out, read this review, and conclude that my opinions are in fact complete cobblers. Okay?

Route Finder has been reviewed twice before, scoring 78% and 84%. This time the author has added a graphical map, which enables you to zoom in and highlight more specific details about your journey (what towns you pass through, that sort of thing). If you want to know how it works, turn to page 6 and the Cover Disk pages.

At the price of a floppy disk *Route Finder 2.0* comes cheaper than many road atlases, while trudging through the task of planning your journeys for you. Its database of place names isn't fully comprehensive by any means, but entering your own obscure village to the list is painless. Registered users get version 2.1 which comes even closer to the *FORMAT* Gold standard: you can zoom in or out to any area on the map, for example. Yet another excellent program from the public domain.

***STF* RATING: 86%**

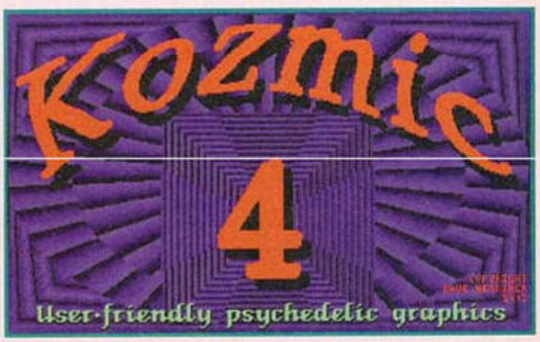


■ ***Route Finder* – invaluable for planning journeys like, ooh, Bath to Birmingham to watch Bristol Rovers play Birm... *(oh shut up! – Jill)*.**

KOZMIC 4

GOODMANS PD, DISK GD2038

Kozmic 4 is a psychedelic pattern generator for all STs with more than 1MByte of memory. It assumes no artistic knowledge – just select the effect from those offered and you can quickly start building up a library of patterns. From there you can import them into any art package that supports Neochrome pictures (most support the .NEO file extension, including *Prism Paint* featured on Cover Disk 48). Or, if you're feeling particularly masochistic, you can build up your own migraine-inducing pattern slide show to play around with.



■ **Oh dear, my brain hurts, my brain hurts. *Kozmic 4* is not recommended if you suffer migraines at all.**

While *Kozmic* has a slick user interface, and does its job professionally, there isn't really any practical use for it, unless you particularly need a migraine for some work-related reason. But what the heck. It's fun, it works, and it's now freeware. Get a copy.

***STF* RATING: 81%**

DEMOS

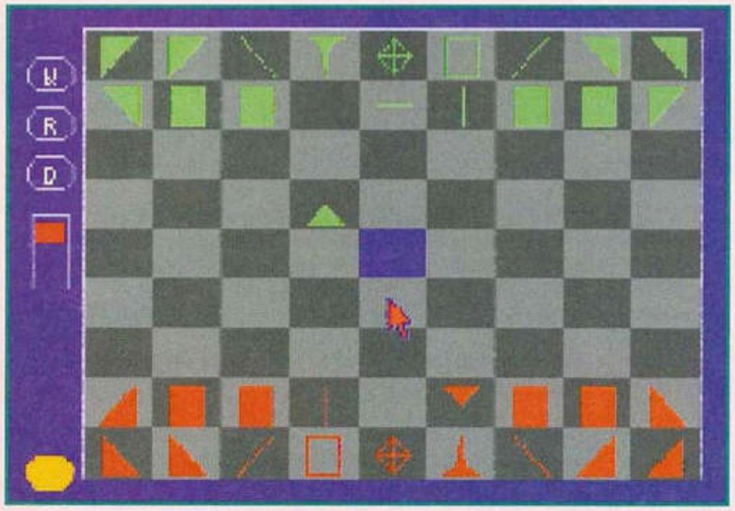
THE ULTIMATE STE MEGADEMO

FLOPPYSHOP, DISK DEM 4229

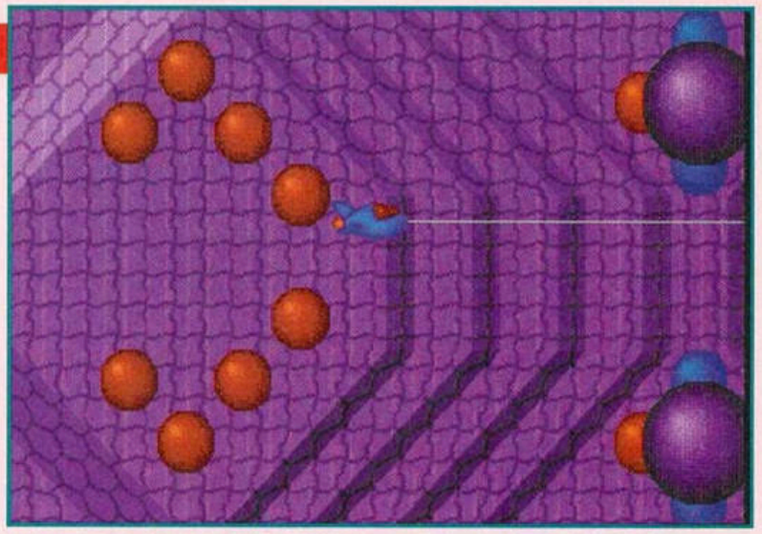
Now if you read the reviews of the next two demos first, you might think I've been infected by the *ST FORMAT* "let's hate demos" virus. But that's rubbish! This demo is proof that they can be used in a constructive way. The reasons this demo is better than the rest? One, there is a level of interaction between user and demo. Two, you can select from a number of demos, and quit from each when you've seen enough. Three, each demo shows off of the STE's colour and sonic capabilities without ramming thousands of messages down your throat.

Demo coders, you don't have to follow these suggestions at all, but if you don't you'll end up with a demo like *Fly Over Fantasy* (below) which certainly does not entertain and enlighten in any way. *The Ultimate STE Megademo*, however, is far more acceptable (there's even a decent tune in there somewhere). Okay?

***STF* RATING: 81%**



■ You even get a game hidden somewhere with the *Ultimate STE Megademo*. No idea how it works, but still...



■ Gaze at those colours, feel the smooth animation, nod your head to the music and eat lots of vitamins *(eh? – everyone else)*.

CLUB CULTURE MIX PACK 2 BY KUBA

STELLAR PD, DISK DEMO 077

Well, all the trademarks of the demo are here: thumping house tunes and scrolly messages galore, but is there no room for innovation or anything that stands out from the crowd? Oh well, here goes then. *House Stompin'* encapsulates everything abhorrent in dance music – the same old unchanging rhythm, with a few unchanging tracks laid over the top. Unfortunately, and probably somewhat predictably, the others are just more of the same. There's nothing to recommend about this disk unless you happen to like listening to monotonous tunes. If you're a house fan you'll probably love it. Everyone else – avoid.

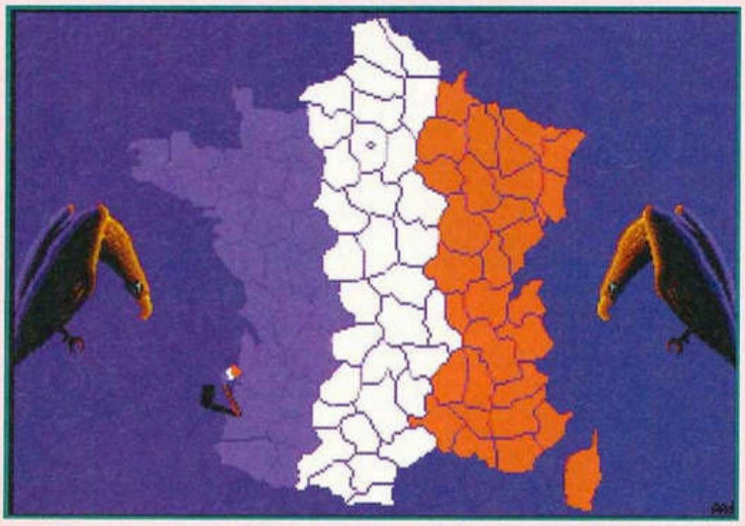
***STF* RATING: 51%**

FLY OVER FANTASY

FLOPPYSHOP, DISK S-DEM 4225C/4226C

Look, a few pretty graphics punctuated by long minutes of boring scrolling messages sounds like a rip-off to me, okay? With no option to skip the boring bits you'd be better off watching paint dry. Demo coders do themselves no favours with self-indulgent rubbish like this. After ten minutes of scrolling messages and only three proper pictures, and not even a remote sign of being asked to insert the second disk, I gave up, and I advise you not to bother even going that far. A complete waste of effort. ***stf***

***STF* RATING: 25%**



■ Right, you've seen the only decent picture in *Fly Over Fantasy*, so there's no need to buy the demo. No, absolutely none at all. Zilch. Get the message.

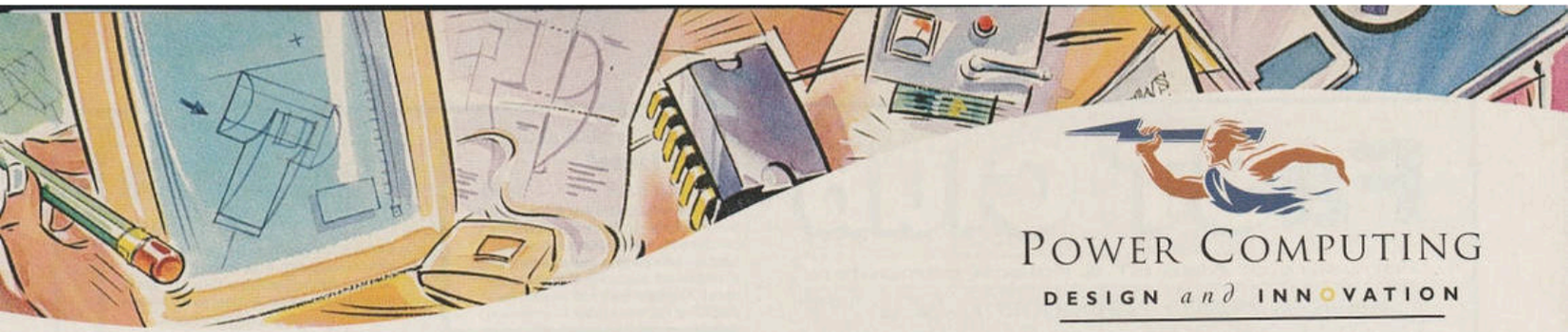
PD TOP TEN

This month Asgard Software get to show off their wares. Contact them on ☎ 01924 363059 for more details on any of the disks featured below or for general enquiries.

1. **Route Finder 1.8**
2. **Alice Text Editor**
3. **Crack Art**
4. **FastCopy v3**
5. **PC Emulator**
6. **Medieval Chess**
7. **Skidpan**
8. **Treasures of the New Kingdom**
9. **Valgus 2**
10. **Certificate Maker**

PD libraries! If you want your Top Ten featured here then for goodness sake send it in to us at: PD Sector, ST FORMAT, 30 Monmouth Street, Bath, Avon, BA1 2BW.

If you're interested in any of the programs here, the PD libraries' phone numbers and addresses can be found on page 71.



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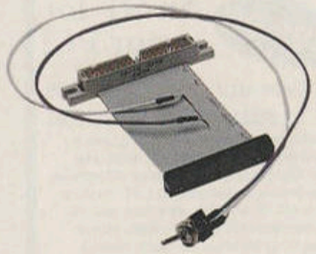

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new

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SUPERMON

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❒ Copy images from screen in any ST/TT/Falcon video mode.

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❒ Extensive range of image formats. Imagecopy can read and write: Degas, GIF, IFF, IMG, JFIF (JPEG), PC Paintbrush (PCX), Prism Paint, RSC free image, Targa, TIFF, and Windows Bitmap. Other read-only formats include: Art Director, Calamus Raster Graphic, DR Doodle, Macpaint, Neochrome, OS/2 Bitmap, Pictor, Pixart, Portable Bitmap, Spectrum, Tiny, and True Paint, XGA.

++ Major New Features in Imagecopy 3.5

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Their Finest Missions

BATTLE OF BRITAIN DATA DISK

Become one of the few! You too can fly Stukas, bomb Dover, strafe Dorniers, scramble Spits, use Brylcreem, call your pals Ginger and snigger every time someone mentions bandits or bogies, with the new data disk for *Battle of Britain*.

Way back when, 44 years ago in fact, 'the few' of the RAF took on overwhelming odds (the Luftwaffe) in a battle for control of the skies of Europe. Armed only with guts, luck and a few flash planes they managed to see off the mightiest air force in the world. *Their Finest Hour*, released back in 1990, and later on budget in early 1994, told the story of these men. It enabled you to fly the missions that were to dictate the outcome of the entire war, and you could take either the German or Allied perspective.

Now a new disk of supplemental missions, cunningly named *Their Finest Missions*, is available, again at a knockdown price. But is it worth scrambling to the shops for? Offering *Their Finest Hour* veterans 23 new scenarios in which to get themselves killed, it appears to be good value, but it's quality that counts, not quantity.

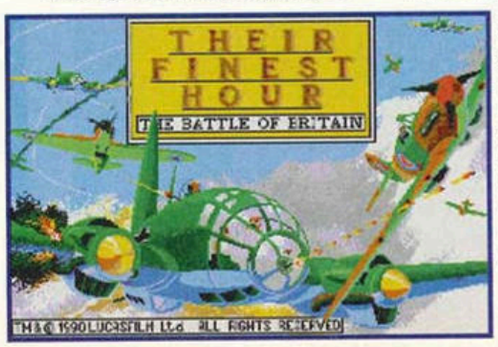
De Javú

The biggest weakness of *Their Finest Missions* is hinted at in its title. The Battle Of Britain has already been fought, in *Their Finest Hour*. One of the most appealing aspects of *Their Finest Hour* was that you could play through the Battle Of Britain, taking the part of either the RAF or Luftwaffe, and your performance actually affected the outcome. This means that what you're left with in *Their Finest Missions* is a range of unrelated custom missions. Dead exciting custom missions, yes, but they don't have any effect on the overall battle itself.

Now it may seem a little harsh to have a go at *Their Finest Hour* for not offering a new campaign. Realism was one of the original game's selling points after all, so it wouldn't be right to just run around inventing whole new aerial wars, surely? But the original program also came with its own mission designer, which is what was used to create some of the scenarios offering in *Their Finest Missions*. Hmm. Sure these are play-tested and polished scenarios, but you can't help thinking you could have done it all yourself.

Angles One Five

The missions – five Spitfire, four Hurricane, five BF109E, three BF110-C4, two Stuka, one Dornier, two HE111H-3 and one JU88A-1 – are a quality mix. It's a challenge just to be able to fly all eight planes well enough to even attempt most of these missions, because they were designed by Battle Of Britain aces.



The nature of the missions is refreshingly varied. One stacks up the entire RAF (well, 37 Hurricanes to be precise) against five BF109s and three JU88s. Another sets you the task of showboating a solo raid, which looks good on your bomb camera. The best, though, sets you the task of picking up a valuable spy from a runway at the RAF base at Tangmere. The trouble is that you're flying a Heinkel, and Tangmere is the home of a Spitfire squadron.

■ Smithers-Jones never fully grasped the concept of runway approaches.

All 23 sorties are tough. It's assumed that seeing as you already have a copy of *Their Finest Hour: Battle Of Britain* then you've played it extensively. And there is the friendly option of having an experienced pilot for each plane, who's ready and willing to lend some weight to what can often be very one-sided battles. Just load them through the Select Custom Mission option and it's chocks away.

■ Fly historically accurate planes, take on historically accurate missions...

■ ...and then die in historically accurate ways in historically accurate places.

Dagah, dagah, dagah.

Running on the same 3D engine (a pleasant hybrid of polygons and sprites) as *Their Finest Hour*, this is one of the better looking if not fastest flight simulations for the ST. The gameplay is similar, relying on flying skill rather than radar and proximity missiles for its kills, and that's good. It makes *Their Finest Missions* a real seat-of-the-pants affair. You have to be close to kill, go low to bomb and keep your finger by the trigger at all times.

This level of action combined with a strong element of realism is what made *Their Finest Hour* great, especially in campaign mode, but without the ongoing canvas of the war to play against *Their Finest Missions* is reduced to the status of a highly complex shoot-'em-up. Which isn't a bad thing, but it's not that compelling either. Most aces will examine all the missions and play many, but there's just no incentive to see them all through and complete the game. ***stf***

TRENTON WEBB

Their Finest Missions

Battle of Britain data disk

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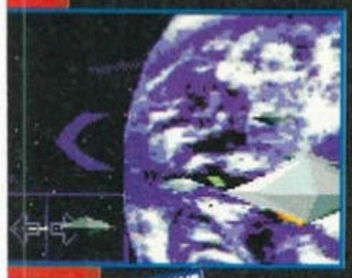
All STs, 1MByte recommended

Highs
- Great dogfighting fun
- 23 real tough missions
- Bonus pilots can be resurrected

Lows
- No campaign (!?!)
- Not stunningly fast

65%



ZERO-

ST FORMAT GOLD

In 1961, man reached for the stars. In the early 21st century, when aliens casually announced their plans to take over the world, man reached for a clean change of underwear.

The battle for Earth has begun. We're not messing about this time. Those wars in the past – forget them. This one's big. Your planet is about to be wiped out. It's just waiting a few extra seconds for one of the aliens who's still sitting on the coach eating his sandwiches.

In *Zero-5* it's your job (not as a lone crusader, just for a change, but as a member of DEFCON, Earth's defence force) to foil the evil plans of the Morphons and save your planet from certain destruction. You're going to manage this by climbing into your filled vector fighter and rocketing off into the stars to fight other filled vector ships in a 3D space environment. At a basic level, *Zero-5's* something like a flight sim, except that the ground's disappeared (mostly) and you're now equipped with a fierce gun.

You work your way through planets, comets, attack forces, defence carriers, hijackings, ambushes, and just about every other type of conflict a budding starfighter could hope for, in a blaze of green cannon fire streaking across the blackness of deep space.

"You won't find a faster, more proficient or more enjoyable shoot-'em-up. This is *Elite 2* with balls"

Meathead with a mission

Drawing massively from the *Carrier Command* style, *Zero-5* plays as a series of different missions varying in complexity, difficulty and speed. You work your way through as many missions as you need to, building a pilot database that logs your successes, failures and, most importantly, kills. Because you work through the missions in a rough logical order, the learning curve is matched exactly to you – if a mission's too difficult you can choose something a little less ambitious and work your way up from there. And although this does tie you down to a more structured game, you still have some choice of missions at each level of difficulty. This flexibility is certainly much better than coasting through seven levels of difficulty without a hassle only to find that you just can't get past level eight. *Zero-5* instead offers you another mission which, though just as difficult, may be a little more suited to you.

For the same reason you can also simply load up the game and, without a log of any kind, take on some of the toughest missions if you just want a quick blast on a tough mission. Whatever, you can always find a mission that's perfectly suited to your playing style and level.

■ The drones are pack hunters. Even if you manage to shoot 20 of them down, you'll end up slamming into 40 more.

■ As you prepare to ram a ship twice your own size, your on-board computer gently breaths "danger" in your ear.

■ "Now I'm going to have to fail you on a few technical points."

Guessing games

The mix between improvisation and script works well in *Zero-5*. Although each mission has a rough plot, and most events are planned, the environment is by no means linear and you don't tend find yourself in the same situation, confronted by the same enemy at the same time, as in other games. This element of randomness works wonders for the gameplay.

And, of course...

We're talking about a 3D game here, and filled vectors are always tricky to code – if one plane slips slightly, exposing a few pixels that shouldn't be seen, it turns into the electronic equivalent of a children's nativity scene. Effective 3D modelling comes down to programming in the end – anyone can produce a good spaceship, but few could write the software to

■ I suppose in retrospect is was difficult to miss, but I was having trouble with the ship stereo and... Oh well.

NARCISSISM

On a much more self-indulgent note, each pilot you create not only has a log, service record and medal collection, but a photo. There are no interesting pilot pictures provided but, inside the manual, you'll find a registration form to send back to Caspian. When you send this form back, you have the option to include a photo of yourself, which Caspian will happily turn into a picture file and send back to you on a floppy disk. From this point on, you can create pilot records with your own photo. This is a game you can make a personal appearance in.

5

■ As the game progresses, the enemy forces get closer and closer to the planet Earth...

■ ...and proceed to fly around the planet until you turn them into pretty balls of white-hot hellfire.

drive it. The coding behind *Zero-5* keeps everything moving incredibly fluidly. It's a shame then that the ships lack the kind of attention to design shown in *Frontier*, instead owing more to the likes of *Starstrike*, although the sheer number of different ships lends a degree of variety.

Then there are the tunes that you get to kill the green scaleys to. You would've thought a thrash metal band might be suitable *(you would? – Jill)* but *Zero-5* features rave music: an almost anthemic title tune followed by more atmospheric background music for the database. However, after visual sequences that owe a lot to *Alien* the fast, loud, hyperactive rave tune spoils whatever atmosphere's been built up. Perhaps something vaguely orchestral might have been a better choice.

Play the game

On loading up *Zero-5* and jumping straight into the action there aren't too many drawbacks, but when you delve deeper you begin to find a few niggly problems. The first and biggest is disk swapping. The game comes as a program disk, a supplementary disk and a missions disk – an arrangement that just doesn't seem to work to its best advantage, although to be fair fitting the game into 3MBytes must have been difficult. As soon as you try to access a pilot database you find yourself swapping disks to infinity with nothing to show for it. Cries of "But you just used that one" and "You want the supplementary disk *again?*" ring out as three tortured pieces of plastic and metal are shuffled between gradually tensing hands.

To combat this problem, *Zero-5* takes full advantage of whatever you have plugged into your machine. If you have two drives you can work with a disk in each, and if you have a hard drive you can install the game on to it easily. Single-drivers will just have to practise self-control, or modernise their system.

The next *Zero-5* problem is flight. The ship can be controlled with either a mouse or a Jag Powerpad (plugged into a normal machine) and the proper flight controls are observed, but slowing down isn't an option. You're travelling at a set speed and you can't change it. This can be a problem at times, and it means that the older, recognised *Elite* techniques of stalking, chasing, sitting and stunting aren't possible. Eventually, your combat turns into a series of fast dogfights rather than a strategic battle of wits. *Zero-5* is a fast-paced action-based game, but then, if you were to slow down and smell the roses, you might just realise there are no roses to smell...

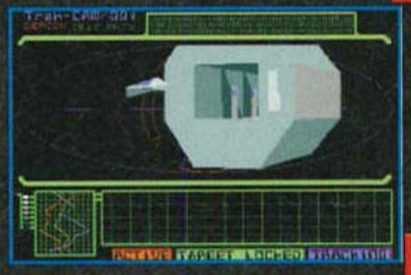
A Smith & Wesson beats four aces

This is a game of fast action, accurate shooting and pleasing explosions, in which you can fly towards someone at massive speeds, searching them out with your laser. You actually feel your sights inch closer to the target, and get the thrill of hunting your enemy without ever actually having to stop and think, or spend any time waiting for them to fall into your trap. Tactics are still important, and you do need to learn to survive, but the skills you need aren't business sense and luck. You're being paid to fly around and smash things up.

The graphics reflect this. If you hang around a group of alien ships delicately pulling off the stragglers you'll feel pleased with yourself, but charge straight at them, filling their slimy faces with green laser death, and your screen becomes awash with flame, as yet more of the alien scum bite the big one.

Caspian Software are excited about this game for a reason. You won't find a faster, more proficient or more enjoyable shoot-'em-up on the ST. They've taken the gameplay of *R-Type* and combined it with the polish of *Knights of the Sky* (top MicroProse flight sim action), to produce a good balance between fast action and longevity. Its only real shortcoming is the limited number of missions, but Caspian will be releasing extra mission disks in future. This game really is *Elite 2* with balls, and you should buy it right now. It's the best 3D space shoot-out ever! ***stf***

SIMON FORRESTER

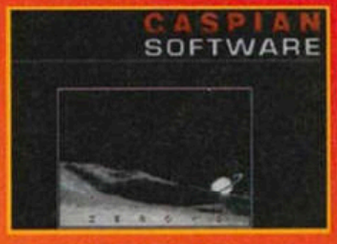


■ Your mothership, piled high with fuel, equipment and a really serious amount of heavy weaponry.

GENTLE INTRODUCTIONS

When we interviewed Andrew Gisby, *Zero-5's* author, back in issue 64 he told us he'd spent a lot of time getting the game to feel cinematographically right. The game was inspired by *The Last Starfighter*, and references it most gratifyingly throughout. The best example of this is the introduction. It's unusual to see floppy games with lengthy intro sequences (although cart games are full of 'em), but *Zero-5* has the full works, starting with a visual and audio sequence that, although not technically mind-blowing, screams of time, effort and sheer professionalism.

Still shots of the pre-game action don't really do much justice, but suffice to say that it explains the plot using a series of stills accompanied by soundbites, backed atmospherically with what Kubrick would describe as self-conscious breath, making the perfect introduction to a great game. At a later stage in the pre-game options you find another database, this time giving the full story as to exactly how Earth got into the trouble it's in at the moment. The story runs roughly along the lines of a probe being sent into the innermost reaches of the galaxy, and receiving organised, electromagnetic signals from a non-human race. Six years after the Earth probe sent its own signals, the aliens replied, with a trite message to the effect of: "Oh. Right. We'd better take over that planet, then, hadn't we? Oh, go on." Earth is in big trouble...



■ The battle for Earth has begun. Looks damned good, as well.

■ *Zero-5's* biblios database, chronicling the decade of the brown trousers.

Zero-5

£24.99 Caspian Software Block 1A, Lee Valley Technopark, Ashley Road, London, N17 9LN
1MByte STE or Falcon

Highs
- Stupidly fast-paced action
- Missions are structured yet varied
- Medals to win (for *greed fans*)

Lows
- Only one gun
- You can't slow down
- Disk swapping if you have a single-disk drive

92%

ST ANSWERS

ST FORMAT's own infobahn warrior, Clive Parker, tackles your problems, ranging from printer drivers to the *really* ridiculous.

Starball problems

DISKS

I'm having trouble with running *Starball* from the *ST FORMAT* Cover Disk 64 – the game always bombs out. When I unpack the file I get a message saying that the data is damaged. Please put a fixed version on your next Cover Disk.
Rafay Qadin, London

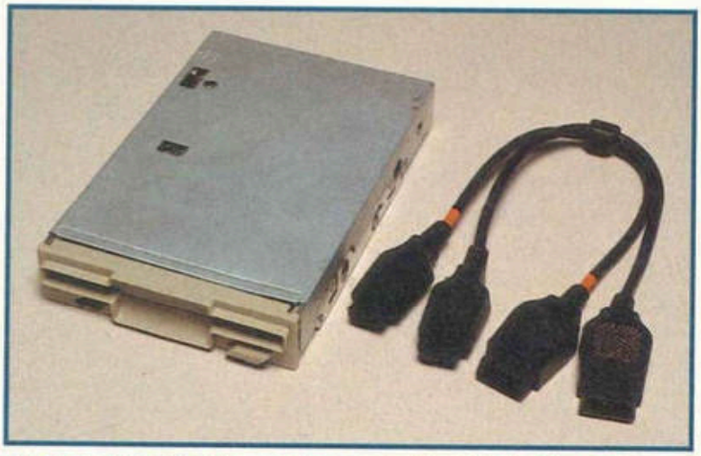
A *It sounds like you have a faulty Cover Disk. With such a large number of disks duplicated every month one or two are bound to be faulty. Just send your faulty disk to: ST FORMAT November Disk Returns, PO Box 21, Daventry NN1 5BU with a padded self-addressed envelope (no need for a stamp on it) and a note explaining that you need a replacement disk. Full instructions for disk problems are included on the Cover Disk pages every month.*

DIY floppy

HARDWARE

Can I build an external floppy drive using the internal drive from a broken STF? What parts do I need and where can I get them?
Marco Spelde, Almere, Holland

A *You could possibly build an external drive using an old internal device, although it would probably work out less expensive to buy a new external drive. You need a suitable case, an internal regulated power supply unit and a 14-pin DIN-to-Shuggart cable. We're planning a feature on building an external floppy drive in ST FORMAT soon.*



■ **It's just as cheap – if not cheaper – to buy a new external drive as it is to build one from spare parts like some demented mad scientist (with a fetish for joystick leads).**

■ ***Starball* on Cover Disk 64. Nick, Simon and Trent have hardly done any work this month, yet *again*, because they've been playing it so much.**

Radio ham

SOFTWARE

I am interested in using packet radio with my STE. Is there any software available to do this?
Paul Brooks, Downham Market, Norfolk

A *Indeed there is Paul. There are no commercial packet radio programs that I am aware of but there are several useful PD programs you can use. Worli is a program designed to enable you to run a packet radio bulletin board complete with 150K manual, while Packet is a comprehensive general purpose packet radio program. Call one of the PD libraries listed in our ST Directory (page 71) and tell them exactly what you need – they'll be glad to help you out. Make sure you remember that most packet radio software only runs in high resolution.*

The plot thickens

PRINTERS

I have a Hewlett Packard plotter, model 7221b. Can I link it to my STE and what software can I use with it? Can I use a standard art package?
Steven Good, Cramlington, Northumberland

A *Almost all plotters use a standard parallel Centronics interface, so you can connect it to your STE using a normal printer lead. Your problem lies with software. Plotters are designed to be used with CAD (computer aided design) software that*

STOS CORNER

PROGRAMMING

Frank Charlton fires up his steam-powered Internet relay and shows you how to extend yourself.

Extension help

With some help from a few friends I'm busy writing a new *STOS* extension, which I want to release into the public domain. We have about 80 new commands in the interpreter version of the extension, but we're starting to have problems with the compiler version. My friend's pen-pal told him that we couldn't have that many commands in the compiler extension, but didn't tell us why. What do we do?
Jeremy Caudle, Palmersville

Because of differences in the way STOS handles interpreter and compiler extensions you're limited to using 64 commands in a compiler version, even though you can use up to 128 in each interpreter extension. For large extensions like the one you're writing, you need to follow the route used by the programmers of The Missing Link.

If you look at the way The Missing Link gets around the problem, you'll notice that it splits the extension into two separate files, each with 64 commands in. Effectively, you need to write two extensions. Actually, the registered version of The Missing Link needs three parts to hold all of the commands. Good luck with the extension, and I'd love to see it when it's done.

Internet connected!

I thought you might like to know that *STOS* programmers with access to the Internet can join a special mailing list to swap hints and tips, as well as find answers to difficult *STOS* questions. If anyone would like more information about the list, they can send me an e-mail message at the address ma2ljg@midge.bath.ac.uk and I'll send them info about it.
Les Greenhalgh, Bath

Thanks, Les. If you use the Internet and want to keep in touch with the latest STOS news and developments, this is the thing for you. When you join the list, any messages sent to it are forwarded to your mailbox. Because everyone that reads it is a STOS user or programmer, you can guarantee that your query or tip will get an answer. You'll also find out where the latest STOS-related files are available for download. Les runs an excellent service, and best of all – it's free.

Incidentally, you can also contact me on the STOS mailing list, or send electronic mail directly to me at frank@theshack.demon.co.uk if you have any questions or feedback for the ST FORMAT STOS Corner. If you want

MUSIC AND MIDI

Andy Curtis boldly goes where many people have gone before. Crazy, but mostly coherent.

Cubase upgrade?

I have heard that there is a new version of *Cubase* out for the ST but I have received no notification about it from Steinberg. I am a little confused as to what is really going on so I would be grateful if you could sort it out for me. Thanks in advance.
Graham Dunwald, Essex

The latest version of Cubase is called Cubase Score and it has been out for a little while now. It is available either as a new package or as an upgrade to Cubase version 3. The addendum package costs £59 from Harman Audio (☎ 0181 207 5050). The new score edit page is greatly enhanced with advanced score styling and printout facilities. There are also upgrades to the core program, including an arpeggiater and some cosmetic changes. In short, if you are serious about score editing and printing then you will want to upgrade.

I'm going MAD...

At first it was merely a little irritating, then it began to annoy me. At present it is driving me mad. Please help. I use the *Breakthru* sequencer by Software Technology, and each time I load it, instead of going straight to the main screen, a large dialog box pops up telling me that I have used no memory and that Software Technology produced the program.

I then have to click the mouse to get rid of it. I KNOW THESE THINGS ALREADY! Why do I have to have them rammed down my throat each time I load the program? I pay shareware authors to have intro screens like this removed. Is it too much to ask that a software company should not treat their customers like unregistered shareware users?
Infuriated, Croydon

Whilst we can understand that this may be a feature that does not suit everyone, surely it is a small price to pay for the use of a wonderful program? Here are three ways to combat the problem:
1. Leave the sequencer running all the time so that you rarely have to launch the program.
2. Ask a friend or relative to launch Breakthru for you, thus sparing you the frustration.
3. Get a life.

Loop the loop

I use *Cubase Lite* and have found it to be a capable package. I miss a feature that I used to use in my old sequencer, however. The loop facility enabled me to make the drum part continuous so that I could try out ideas. There seems to be no facility to do this in *Cubase Lite*. Do I have to upgrade to *Cubase*, or am I missing something in the manual?
T R Devonshire, Dewsbury

Unfortunately there is not a conventional loop facility as such in Cubase. This actually applies to Cubase Lite as well as to Cubase itself. The easiest way to get round this is to use the Repeat function, which enables you to repeat a part as many times as you wish. Then you simply set the sequencer going and record away to your heart's content. Make sure that the part or parts are highlighted first and then select the Repeat command from the Structure drop-down menu. All you have to do is enter the number of repeats desired and specify whether or not they are to be 'Ghost' parts. If you use 'Ghost' parts then any changes made to the original will affect all the repeated parts as well – handy if you are experimenting with different ideas.

Quantising hell

Having used a sequencer for some time now, I must confess that I still have not fully comprehended the full implications of the quantising process. Whenever I attempt to quantise a part it ends up sounding 'wrong' as opposed to 'correct'. How can I guard against this?
Bill Geddes, Durham

The most important thing to remember about the quantising process is that it can only do what you tell it to. It is not a magic wand that can be waved over errant performances making them correct.

First you need to decide what the shortest note is in your part. This simple chart may help.
Crotchet = 4 beats to a bar = 1/4
Quaver = 8 beats to a bar = 1/8
Semi-quaver = 16 beats to a bar = 1/16

Now you need to select a quantise function that is the same as your shortest note. This will ensure that no notes are stacked on top of each other by the quantise. If most of your part is in quavers and crotchets apart from a little flourish at the end then load the part into an Edit page and quantise the rest of it using an 8 value, but leave your clever bit intact. This can be highly effective and most sequencers support a feature like this.

outputs the specific commands needed to control the pens in a plotter. Normal ST art packages are not supplied with plotter drivers alongside their printer drivers. The only CAD program currently available for the ST is GFA Draft from GFA Data Media – give them a ring on ☎ 01734 794941 for the current price.

Atari PC monitor

HARDWARE

I've been offered an Atari monitor for £20, model number PCM124. Will I be able to connect this monitor to my 1MByte STE?
Tony Friend, Maldon, Essex

A The monitor you've been offered is a 12-inch mono monitor for the Atari range of PC compatibles that they produced in the late 1980s. While the basic internal components of the PCM124 monitor are identical to the SM124 for the ST, the connections are different. The PCM124 has a PC-style 'D' connector instead of an Atari 13-pin DIN connector, which means that you can't plug it into your ST.

Take the monitor and your STE to a local computer or TV store along with your STE manual, and they will replace the PC plug with a 13-pin DIN plug using the pinout charts at the back of the manual.

No TOS disks

SOFTWARE

I've had my STFM for about four years and I want to do some printing with my Star LC-10 printer. The problem is that I haven't got my original TOS disks. Where can I get replacement disks?
G S Richmond, Walney Island, Barrow-in-Furness

A This isn't as big a problem as you think because you don't need the disks that come with an ST to do any printing. If you want to print anything from within a word processor, or any other program for that matter, you simply select the Star LC-10 printer driver from within the program you are using.

Printing with your ST doesn't use any external software, because all the printer drivers that you're going to need are stored within your software and within the TOS ROMs inside your ST. So get your word processor loaded and get printing.

Monitoring the system

GRAPHICS

I have a 1MByte STFM and I am wondering if I can use my Tatung TM01 monitor with it. If I can use it, can I use it in high-resolution mode?
GE Cawdron, Balby, Doncaster

to know more about the Internet and what it is, check out our feature in ST FORMAT 65 – turn straight to page 85 if you missed it.

Yeah, but what is it?

I've just started using *STOS* and I've been reading in your column about things called extensions – can you tell me what they are, and give me a list of which extensions I can get?
Alan Keene, Bristol

An extension is literally what it sounds like – a way of extending STOS itself to give you more commands and features to use. Your copy of STOS should have one supplied with it, the Picture Compactor – check your manual for details on how to use it. Commercially released extensions are difficult to find now, but here's a list.

STOS Compiler: Turns your BASIC programs into faster machine code, and means you can produce standalone double-clickable programs which run from the Desktop. You really should try to gets hold of a copy of this.

STOS Maestro: Comes in two versions. Maestro gives you the commands needed to use sampled sound and music in your programs, and Maestro Plus comes with a sampling cartridge so that you can make your own sounds.

STOS 3D: Provides you with commands to create and animate filled 3D vector graphics in your games. 3D is slightly slow and unwieldy, and never really took off with programmers although it's good for beginners.

As for PD and shareware extensions, you're spoilt for choice. We don't have enough space to go into each one in detail, but the those you should look out for are: Misty, The Missing Link, STOS Extra, STOS Tracker, STOS Control and the forthcoming Eagle extension, which looks promising – more next issue. Goodman have a great selection of STOS extensions, tutorials and example source files, call them on ☎ 01782 335650 or e-mail them on mgoodman@goody.co.uk.

And finally...

Here's a little tip which came in through the Internet *STOS Mailing List* from Andrei Ellman at ae-a@minster.york.ac.uk.

If you want to use the regular ST keyclick instead of the *STOS* keyclick, do the following.

```
click off : poke $484,15
```

This is useful if you don't want your program to have that 'written in *STOS*' feeling.

A *You should be able to connect your ST and Tatung monitor together. Call Meedmore on ☎ 0151 521 2202 with details of your ST and the model number of the monitor. They can make you a lead to order for around £15 – it depends on the price of the parts.*

You will only be able to use the monitor in low or medium resolution if it is CGA compatible, but if it is VGA compatible then you'll be able to use high resolution mode.

System disks

SOFTWARE

I recently repaired a 520STFM for someone who then refused to pay me, so I now have a shiny old STFM! The problem is that all of the start-up disks have been damaged and I don't have any documentation. Instead of scrapping the machine I went out and bought *ST FORMAT* with the idea of obtaining a new system disk like DOS on my PC – I presume it's STOS on the ST? Where can I learn more about the ST and where can I get a system disk?
John Sayer, Canvey Island, Essex

A *You don't need any system disks for your machine. The ST is completely unlike the PC because the system software is built into the hardware of the machine in the TOS ROMs, which means you don't have to hang around waiting for the system to load from floppy or hard drive. You just switch it on, slot a disk in the drive and BAM! The system is loaded.*

The GEM operating system is similar to Windows but a hell of a lot faster and easier to use. Don't look for a CLI (command line interface) because there isn't one. To copy a file you just drag it from one window to another, and to delete it you just drag it to the dustbin. Easy peasy.

To find out more about using your ST and how to get the most from it just get ST FORMAT. STs are surprisingly powerful machines, y'know.

■ Ooer, it's a Falcon disguised as a professional piece of music kit. Which of course it is, it's just less intimidating to musos.

■ The future of the Hawk is under discussion at the moment. If it doesn't make it out, at least there's always the good old Falcon.

Memory upgrading

HARDWARE

I want to upgrade my ST to 2MBytes from 512K. My video shifter chip is soldered on to the motherboard – can I do the upgrade myself or do I need help?
Shaun Collorick, Minehead

A *It depends how good you are with a soldering iron. I don't recommend soldering to chips inside your ST unless you are really experienced with handling electronic components and using a soldering iron. Get help, call COMPO Software on ☎ 01487 773582 and ask for details of their memory upgrade service – they can arrange for courier collection and return of your ST.*

Which ST?

HARDWARE

I have been buying *ST FORMAT* since the *Quartet* issue to help me decide which second-hand ST I should buy for making music, both recorded and live. I have six quick questions for you:
1. Should I get an STFM or an STE?
2. What is the minimum memory I should get?
3. I have used *Cubase*. What software would you recommend I use for sequencing?
4. Do I need Replay 16?
5. What type of resolution monitor do I need?
6. Does anyone make rack mountings for STs?
A Basire, Walthamstow, London E17

A *E17? Walthamstow? I just hope that you don't dress like all those other idiots from your neck of the woods. Right, to answer the queries in order...*
1. You should get an STE with at least TOS 1.62 installed. You can always get a TOS 2.06 upgrade later.
2. The minimum memory you should have in your STE for any serious application is 1MByte. I recommend you upgrade to at least 2MBytes for serious work, and 4MBytes is usually regarded as the norm for music applications.
3. You said it! Cubase 3 is the bee's knees when it comes to sequencing.
4. Replay 16 is handy if you want to include samples as part of your musical compositions or for creating sample files for Quartet. If you want to use samples with Cubase you'll have to use a MIDI keyboard or module that enables samples to be imported from your ST.
5. High resolution, without a doubt. All serious music software uses high resolution only.
6. Yes, contact Digital Village on ☎ 0181 440 3440. They already mount Falcons in 19-inch rack cases in 2 U high units called the Hawk, and they are thinking of offering the same facility for STs.

And again

HARDWARE

I have an STFM with a Marpet 2.5MByte expansion and TOS 1.2. As this setup is quite common I'm upset that more and more programs seem to crash with an odd address error yet the same software runs okay on an STE. I am having problems with *Cannon Fodder* (crashes on level five) and *Notator Logic* (crashes on the score page). Is this problem caused by the memory upgrade or by TOS 1.2?
Derek Johnston, Belfast

A *Your problem almost certainly lies with your version of the operating system. TOS 1.2 is probably the most incompatible version of TOS and causes all sorts of problems with software and hardware such as hard drives. Your best bet is to get a TOS switcher and use TOS 2.06 for most software. Try the solderless Amitar TOS Switcher from Analogic Computers for £59.95, that should solve your problems. Call Analogic on ☎ 0181 546 9575, and if you are*

PROGRAMMING GFA WORKSHOP

Mac Marsden randomises his brain every 27 seconds, day or night.

Lost files?

I have been programming in *GFA Basic* using version 3.5 from from Cover Disk 35. I have a problem because I only have *GFA Compiler v2.0*, so I cannot use *AutoZeST* in my compiled programs. I do have *GFA Compiler v3.0* but it doesn't work. Do you think some files are missing? These are the files I have on my *GFA Compiler 3 disk*: GFA3BLIB, GFA3BLIB.NDX, GFA_BCOM.PRG, GL.PRG. Please tell me which files are missing.
Wim Haanstra, Zwolle, Holland

There are some files missing from your GFA Compiler 3 disk, most notably the MENU.PRG. Return your disk to the supplier and ask for a replacement, or contact your local distributor of GFA software – they should be able to replace your disk for you.

Folder contents

How can I display the whole directory of a disk including the contents of folders? I have tried using the DIR command but I haven't had any luck at all.
D Stokes, Colchester, Essex

There are two commands that enable you to look at the contents of a disk:

```
DIR "A:\*.*"
```

and

```
FILES "A:\*.*"
```

The DIR command only displays the contents of a directory and does not include any files held within the folder in that directory. Also, only the file names are displayed

*The FILES command displays all information about a file – length, time and date – and displays any folders in a directory, identified by a * prefix. It's important to remember that if you use FILES "A:\", the wildcard *.* is added automatically. Using FILES "A:*.*" TO "B:\ST\CONTENTS.TXT" does not display the listing, but writes it to a file on Drive B called CONTENTS.TXT in the directory called ST. You are also able to pipe the listing straight to your printer by using the command FILES "A:*.*" TO "PRN:"*

It's not possible to list all the contents of the main directory and the sub-directories using a single command. Use the following lines of code to read the root directory and then the first level of sub-directories.

```
FILES "A:\*.*"
FILES "A:\*.*\*.*"
```

Data restoration

Is there any way I can re-use data held in data statements? When I try I get an error message saying: "Out of data."
Joseph Black, Lyme Regis, Dorset

wary of installing the switcher yourself they offer a courier service.

Memory again

HARDWARE

I have an Atari 1040STE with 1MByte of memory. If I get a 2MByte upgrade does that mean I will then have 3MBytes – the 1MByte I had plus two more? Or will I just be adding 1MByte when buying 2MBytes for about £50?
Lloyd Hannis, Coventry, West Midlands

A *Sorry to disappoint you Lloyd, but you'll only end up with 2MBytes of RAM. This is because the 1MByte of RAM inside your STE is made up of four 256K SIMM memory boards, and you have to remove them before you add any 1MByte SIMMs because you can't mix 1MByte and 256K SIMMs in an STE. You can always sell the 256K boards in the reader ads pages – turn to page 66 to fill in the form. You should get about £5 each for the 256K SIMMs, which should offset the cost of upgrading your STE to 2MBytes.*

Ooh, I can't decide

HARD DRIVES

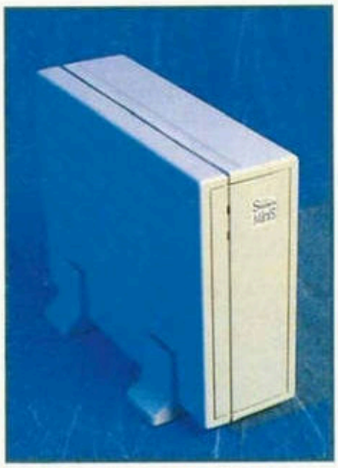
I'm stumped. I want to buy a 170MByte hard drive for my STFM but I don't know which one to get. They all seem to be priced at around £299. Which hard drive would you recommend I go for?
David Pomeroy, Bexley Heath

A *After trying out many hard drives over the years I think I'll have to recommend the MiniS drive from System Solutions (☎ 01753 832212) because of their brilliant record of customer service and product support. Hard drive prices change all the time, so give them a call to get the current price.*

Oh my good gawd!

SOFTWARE

I'm having trouble loading games and programs into my computer. Each time I try I get the following message: "Lack of internal memory, insert program 100." Can you help?
Maudeep S Rai, Dovecotes, Wolverhampton



■ **The MiniS hard drive from System Solutions. It looks good, it tastes good and by golly it does you good.**

A *Eh? What? That's a new one on me. I've never come across that message before in over seven years of ardent ST use. None of my tech manuals even hint at this error message. This may seem like a stupid question, but have you got an Atari ST? If you have then it sounds like a memory problem.*

If you have an STE then you could try opening it up and making sure that the SIMMs are all seated in their sockets correctly. If this doesn't solve the problem, or if you have an STFM, then I'm afraid you're gong to have to contact a repair centre.

Contact Fast Atari Repairs on ☎ 0171 252 3553 – they perform repairs for £44 and offer a collection service for £5.

Incompatible?

HARD DRIVES

I'm having problems booting my Mega ST's ICD hard drive when using TOS 2.06 on a T-Board 64. All I get is two bombs after the Atari logo, yet the hard drive boots up fine in TOS 1.2 mode. I'm booting with the T-Board system disk in the floppy drive.
George Smith, Durham

A *You need to copy the T-Board 64 software to your hard drive when you have booted in TOS 1.2 mode. I see from your list that it isn't installed on your hard drive. If you copy the software to the drive you shouldn't have any more problems when you re-boot into TOS 2.06 without the T-Board 64 system disk in the floppy drive. If you still have problems then contact the COMPO helpline number in your T-Board manual.*

Double trouble

PRINTERS

I'm having trouble with my new Star LC24-30 printer and *1st Word Plus*. Whenever I print I get errors in the hard copy with some letters being printed twice. If I reprint the document I get the same problem but in different words! My old 9-pin printer worked fine.
Nigel Nattrass, Stapleford, Nottingham

A *Your problem is probably caused the printer driver you are using in 1st Word Plus. First make sure that you have set your Star printer to Epson mode using the dip-switches – see the printer manual to check which switch you have to change. Now try all the 24-pin Epson printer drivers supplied with 1st Word Plus one by one until you get a perfect printout. If this still doesn't work then contact a PD library and ask them if they have a disk of 24-pin printer drivers for 1st Word Plus. It's a common problem and most libraries will be able to help you out.*

Bubblejet drivers

PRINTERS

I've been given a Canon BJ-10sx bubblejet printer. Canon have told me that it's compatible with the ST and have kindly sent me a disk with Atari GDOS drivers for the Canon BJ-10. The problem is that I have TOS in my ST, not GDOS, and Canon have told me that they don't have a driver for TOS. What can I do?
DI Rowle, Lytham, Lancashire

A *It's simple. Ignore the GDOS printer drivers disk – you don't need it for most ST programs. Open the front panel of your Canon BJ-10sx and look at the dipswitch settings, described on the inside of the panel. Open the dipswitch panel on top of the printer and flip the relevant dipswitch from Canon mode to Epson emulation mode. Now just select Epson 24-pin printer drivers from within any software you use. Don't worry that your printer is a bubblejet and not a dot matrix printer – it works because the BJ-10sx has the same 360x360 dpi (dots per inch) printing resolution as a 24-pin dot matrix printer. By the way, GDOS is part of the ST operating system. It's an extra part of the operating system designed for graphics output on screen and on printers, and is supplied separately on disk. You can get a full, ready-to-install copy of GDOS along with HyperPaint 2 by ordering STF 54 from back issues on page 85.*

Transferring graphics

GRAPHICS

I'm having problems transferring data from *Timeworks* into *1st Word Plus* using the *Snapshot* Desk

---

You need to give the data a label to instruct the program to restore the data ready to be used again. In the example below the same data is read three times.

```
FOR g=1 TO 3
  PRINT "Reading :";g
  FOR f=1 TO 6
    READ a
    PRINT a
  NEXT f
  RESTORE label
NEXT g
PRINT "Program end"
label:
DATA 1,2,3,4,5,6
```

The label can consist of numbers, letters, the underline character or full stops and, unlike normal variable names, it can begin with a number. The label must occupy a line by itself and end with a colon (:). Using this method of restoring data also means that you can place all of your data at the end of your code out of the way, and call it when required.

Random numbers

I would like to produce random numbers in a maths program I am trying to write for my small son. Could you tell me how I can generate these numbers, because I'm new to programming in *GFA Basic*.
Charles Lang, Kirkcaldy, Scotland

There are a group of commands you need to consider, RND, RANDOM(x), RAND(X) and RANDOMIZE x.

RND produces a random number between 0 and 1 including 0 but excluding 1, in other words a decimal number less than 1.

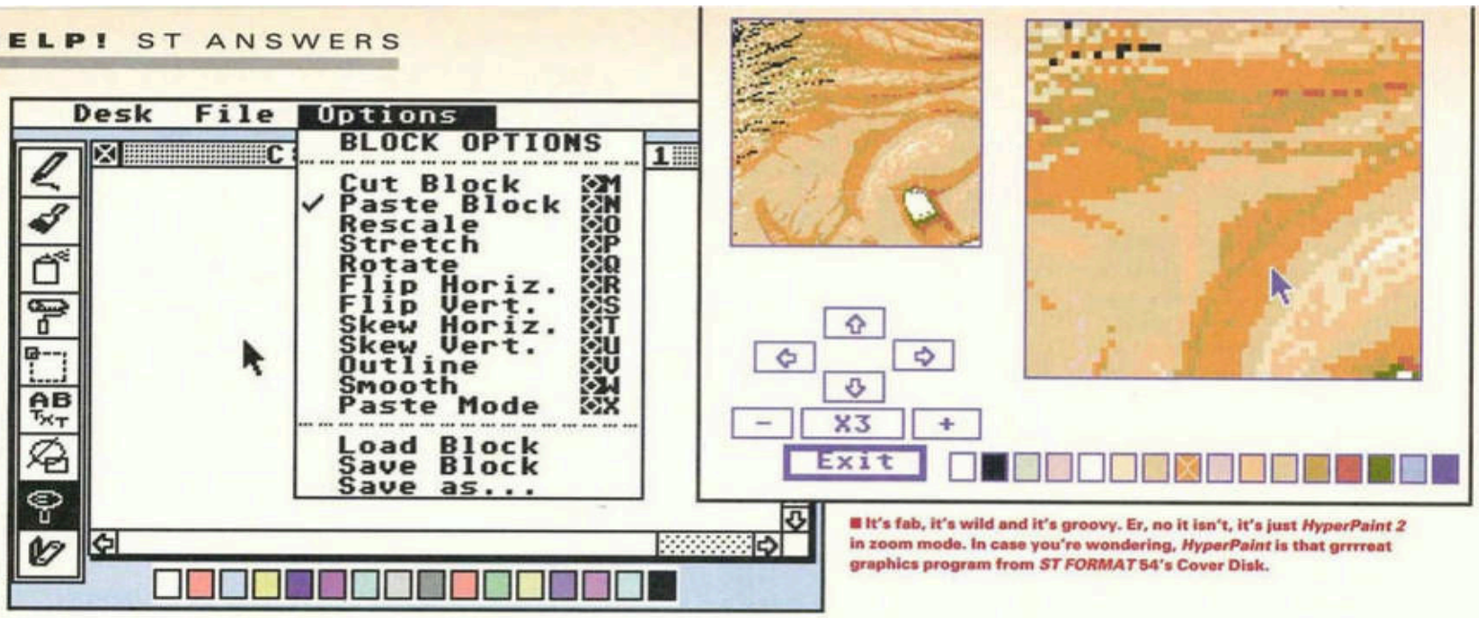
RANDOM(x) produces a random integer (whole number) including 0 but excluding x, so if x=10 the numbers generated are between 0 and 9.

RAND(x) produces a 16-bit number (a number up to 65535, &Hffff hex) uing the same parameters as the RANDOM command.

RANDOMIZE x initialises the random number generator (RNG) with the value x. If you generate the same value for x many times then the same numbers start to appear. The best way to use this is to just use the command RANDOMIZE or RANDOMIZE 0. This initialises the RNG with a random number.

To use RND, RANDOM or RAND use the form Y=RAND, Y=RANDOM(x) and Y=RAND(x).

E-mail
You can e-mail your GFA queries direct to Mac Marsden at mac@mentor.demon.co.uk.



■ It's fab, it's wild and it's groovy. Er, no it isn't, it's just *HyperPaint 2* in zoom mode. In case you're wondering, *HyperPaint* is that grrrreat graphics program from *ST FORMAT* 54's Cover Disk.

Accessory supplied with *1st Word Plus*. I have created an A4 sized drawing in *Timeworks* that I need to take a snapshot of and import into *First Word Plus*. The problem is that I can't get a snapshot of the complete image, and printing in *Timeworks* is much too slow. Can you think of a solution?
Gordon Bannatyne, Glasgow

First, it seems rather odd that you are using a DTP program to create graphics – wouldn't it be easier to use an art package to create your drawings? This leads directly to the solution to your problem, if you have ST FORMAT Cover Disk 54 then you already have an excellent graphics program called HyperPaint 2.

You can use HyperPaint 2 to create images larger than the screen in GEM Image format (IMG), save them to disk and then load them into 1st Word Plus for printing as part of your document. HyperPaint 2 works in low, medium and high resolution, so you can use this method whatever system you have. If you haven't got HyperPaint 2 then turn to page 85 to order a back issue for the bargain price of £4. Or three copies and a free binder for £10.

E-mail
You can send your ST Answers questions directly to Clive by e-mailing him at: cparker@futurenet.co.uk or clive@netmag.cityscape.co.uk

ASSEMBLY POINTERS

Tony Wagstaff breaks from composing his overture for the millennium and generates some code instead.

Extended command

How do I read and send command lines that are longer than 125 characters, such as those sent by the Teradesk replacement Desktop?
J Asperry, Ipswich

The command line itself only has room for 125 characters, so to enable longer commands to be sent Atari have dreamt up the Atari Extended Argument Specification, or ARGV. This works by sending the command via the environment string, which has no length limitation. Using ARGV, only the first 125 characters are delivered via the command line.

You can see this with Teradesk by dragging a large number of files, for example, over your program's Desktop icon. The command line, situated 128 bytes above the basepage, will contain a leading length byte of 127, and then the curtailed command line. To get the full command line, your program needs to first check that this leading length byte is equal to 127.

```
move l 4(sp),a3 get the address of the basepage, do this
before you alter sp
move b 128(a3),d3
cmp.b #127,d3
beq use_ARGV
```

If not then you have a normal command line. If it is, then the environment, whose address can be found at the basepage + 44, needs to be searched for ARGV=. The null terminated string found after the first null byte following ARGV=, will contain your program's full path and filename. Following this comes the extended command line. Unlike the usual command line, this does not have a leading length byte, but will consist of one or more null terminated strings. You need to search for two consecutive nulls to find the end of it.

```
use_ARGV
 lea 44(a3),a4
 move.l (a4),a4
1$ bar test_forARGV
 beq .foundARGV

2$ move.b (a4)+,d3
 bne 2$
 bra 1$

.foundARGV
3$ move.b (a4)+,d3 ignore anything after ARGV=
 bne 3$

*a4 now points to the full program path and name

4$ move.b (a4)+,d3
 bne 4$

*a4 now points to the extended command line

5$ move.b (a4)+,d3
 bne 5$
 move.b (a4)+,d3
 bne 5$ keep going until we hit a double null
```

a4 has now walked the extended command line. The routine to seek out the ARGV environment is as follows

```
test_forARGV
 lea argv,a5
 move.w #4,d3
1$ cmp.b (a4)+,(a5)+
 dbne d3,1$
 rts

 data
argv dc.b 'ARGV='
```

You should now be able to see how to send an extended command line. Simply place as much as practical in the actual command, place 127 into the leading length byte, and then set up the ARGV environment string. If you want to add this to the current environment, you will need to copy that to a new location and then add ARGV. Finally call Pexec or shel_write as normal. Note that under MultiTOS, shel_write will automatically use the ARGV environment string.

Warm soft boot

How do I perform a warm re-boot?
Colin Hull, Middlesex

There are various ways of doing this using software. One is to use the _sysbase variable at $4FA2. This contains the address of the start of TOS, which contains various information in its initial memory space, such as the TOS version installed. At the eighth byte after the beginning of TOS resides the address of the reset code. Jumping to this address will cause a warm reset.

```
move.l $4f2.w,a0
move.l 8(a0),a0
jmp (a0)
```

This code needs to be executed in supervisor mode, using the Super() or Supexec() calls.

Direct Blit

Can I make use of the blitter chip without using Line-A calls?
E Sudbury, Harpenden

Yes, either through the VDI or by writing directly to the hardware. The former, which utilises the vro_cpyfrm call, was explained in issue 52, (turn to page 85 for details of obtaining back issues). Using the hardware directly is rather more complicated, an example was given in issue 53. The VDI method is preferable to the latter because, apart from being simpler, you can damage your Atari by using the hardware directly if you are not absolutely sure of what you are doing.

E-mail
You can e-mail your assembly language problems directly to Tony Wagstaff at twagstaff@cix.compulink.co.uk.

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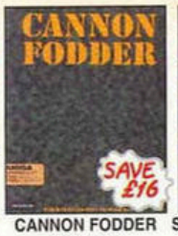

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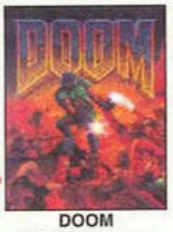

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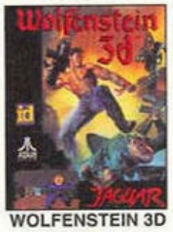

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DESKTOPPER

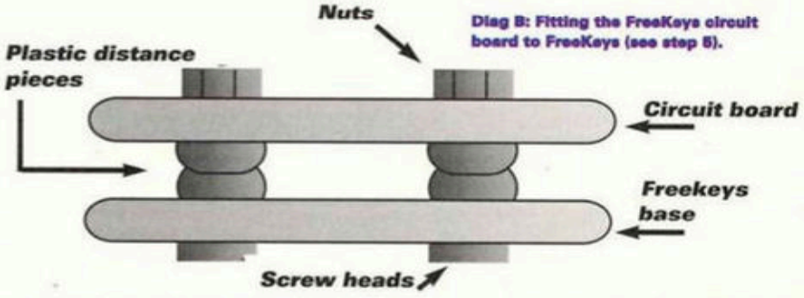
Since the DeskTopper arrived Nick's been quietly measuring it up for his own ST. From under his desk he brings you the guide to setting it up.

■ Once you've finished fitting the DeskTopper your ST could look like this – neat 'n' tidy.

It's a straightforward job fitting the DeskTopper and FreeKeys, but the manual lacks photos, so we've put together this step-by-step guide. Follow it and you'll soon have a yet more impressive machine on your desk.

Now I love my ST so much that when I saw that the DeskTopper (reviewed in issue 64) had arrived in the office I decided that it and my ST would be wonderful for each other. And indeed they are, because now I've tided up all those messy, annoying leads that have been winding me up for months, while giving my ST the face-lift that it really deserves.

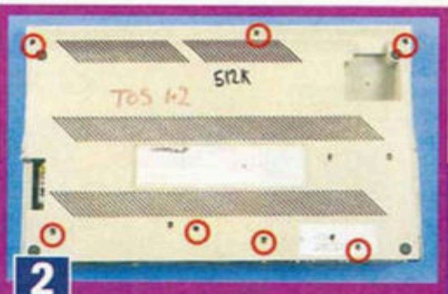
Unfortunately, I was discovered performing my cosmetics under the desk by Trent, who decided that it would be a good idea if I shared my experiences with the rest of you. So here's the



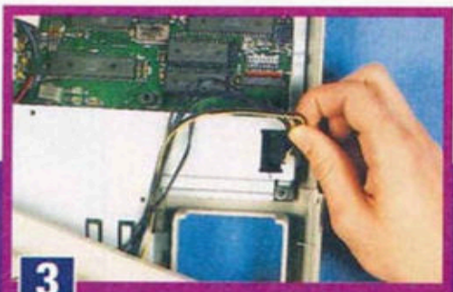
Diag B: Fitting the FreeKeys circuit board to FreeKeys (see step 5).

FITTING THE DESKTOPPER AND FREEKEYS

1 Take the base of the DeskTopper, and fit the clip nuts as shown above. There are six to be fitted, four at the back, and two at the side. Once you've finished doing this you need to screw in the distance pieces to the bottom of the DeskTopper following the instructions shown in Diagram A on the opposite page.



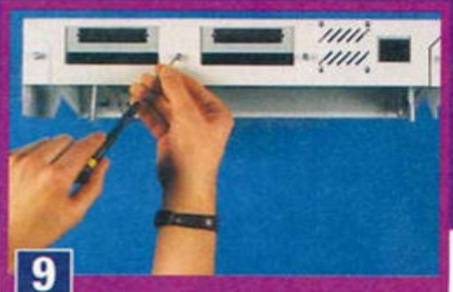
2 Having completely disconnected your ST from its various leads, turn it on its back and remove the screws circled in the photo. Holding both halves, turn your ST the right way up before gently removing its cover by moving it slightly to the right to free it from the internal disk drive.



3 Having carefully discarded the ST's top, which you won't need again, remove your ST's keyboard after first disconnecting it from the ST's motherboard by pulling out the cable from its socket as shown. Now you're ready to connect the FreeKeys extension, before completing the DeskTopper installation.

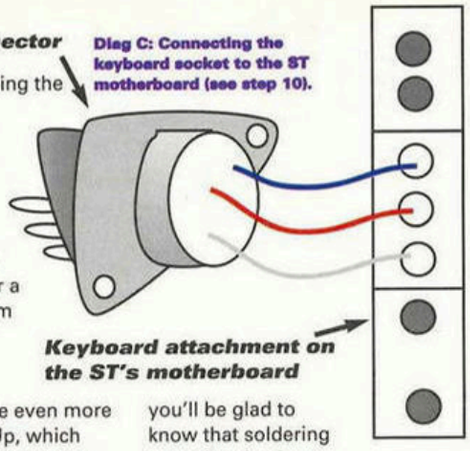
7 Place the top of FreeKeys over the ST's keyboard before holding it securely and turning it over. Screw the two parts together using the remaining four screws and FreeKeys is now ready to use with your ST, using the curly lead supplied with it.

8 Next, you need to screw the switch panel to the DeskTopper's base as shown. The switch panel here only contains the round cable connector for linking FreeKeys to your ST, but the remaining holes can be used to install the various Power Up options supplied.



9 You now need to attach the top of the DeskTopper to its base. Once done, line up the six holes (four at the back, two at the side), which enable you to securely fix the two pieces together using the remaining six screws and your flat-bladed screwdriver.

ultimate guide to installing the DeskTopper and FreeKeys add-ons to your ST. And if you're still worried by the notion of removing your ST's innards, fret no longer, because Systems Solutions offer a fitting service – call them on ☎ 01753 832212.



Diag C: Connecting the keyboard socket to the ST motherboard (see step 10).

What's what?

The basic DeskTopper itself costs £69.95 and consists of the basic box. You can also get FreeKeys for an extra £39.95 (or £99.95 with DeskTopper) if you want to keep your keyboard separate from the main computer. Finally, there's Power Up which, for a trifling £14.95, enables you to move the reset button and power switch to the front of the computer, and to mount hard drives inside the DeskTopper and power your monitor from the computer, saving you a plug somewhere along the line.

All of these and a host of other extras are available from System Solutions who can be reached on ☎ 01753 832212. They also offer a comprehensive fitting service for those of you who are still worried about lifting the lid of your ST.

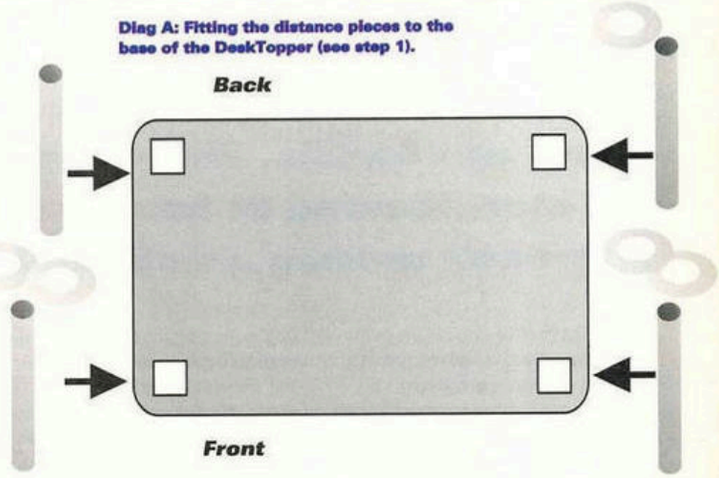
Power Up

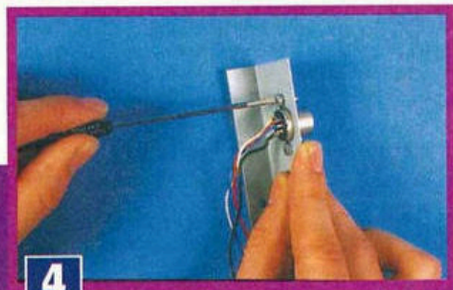
Your setup can be made even more versatile using Power Up, which enables you to add a reset switch to the front of the Desktopper as well as move the power switch there, and save you scrabbling around the back of your machine. Because its installation depends on your ST or Falcon's individual configurations, we've decided not to cover it in this feature. You'll find that although it's the most complicated of the three to install, luckily (for you) the manual is much more comprehensive in its coverage of the Power Up installation than it is for either the DeskTopper and FreeKeys, so you should have few problems with it. Some basic electrical knowledge is required, but you'll be glad to know that soldering is not involved.

Getting started

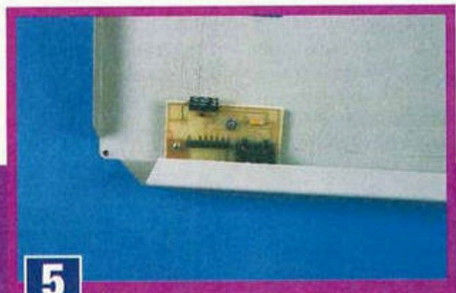
You're going to need a few basic tools to make fitting the DeskTopper a reality. A pair of pliers is handy when it comes to fitting the clip nuts (see step 1 in the walkthrough). Other than this, all you need are a few screwdrivers: one flat blade and two crossheaded, including a very small one such as those used in tightening spectacle frames. Once you have all these, you're all ready to rock and roll, so lock the door and get you, me, your ST, the DeskTopper, FreeKeys and your tools all ready for action. ***stf***

Diag A: Fitting the distance pieces to the base of the DeskTopper (see step 1).

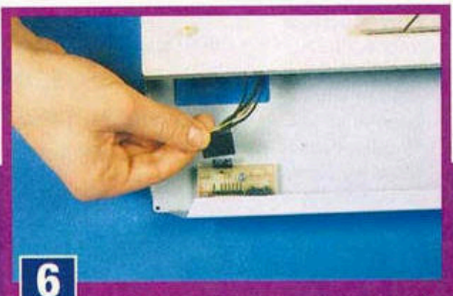




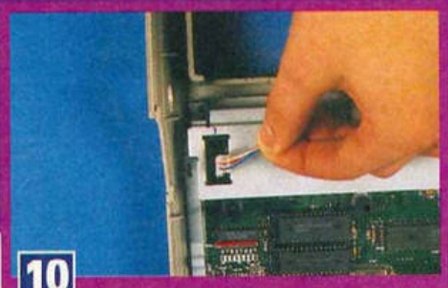
4 Now you can start constructing FreeKeys. First you need to connect the round cable connector to the mounting bracket. This is achieved by placing the cable through the hole on the bracket, as shown above, and placing a screw through each of the two holes. Then tighten them up using two of the nuts.



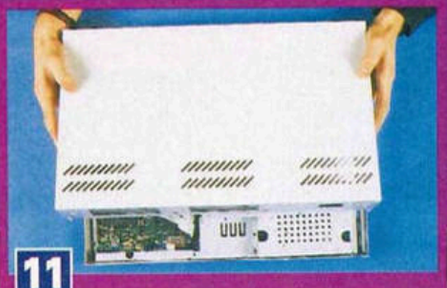
5 Now mount the circuit board by pushing the two screws from underneath the base of FreeKeys, before placing two of the four distance pieces on each of the screws from above. Then mount the circuit board on top of these before screwing the nuts in to secure the board (see Diagram B).



6 Connect your ST's keyboard to the circuit board as shown above, then place the keyboard gently on top of the base of FreeKeys. Make sure that you place the back of the keyboard on the raised shelf, under which the circuit board is fixed, in order for Freekeys to fit securely together.



10 Before putting the DeskTopper on top of the computer you need to reconnect the round cable connector (see step 4) to the ST's motherboard as shown above. See Diagram C for the correct connecting point on the ST's motherboard socket.



11 You can now carefully place the complete DeskTopper on top of the base of your ST. Make sure the four legs line up correctly – you should notice that there are two convenient holes towards the back of your ST for the rear legs of the DeskTopper to fit into.

12 If you have a second disk drive, you can slot it into the front of the DeskTopper, trailing the two wires out of the back to connect them to the plug socket and ST's second disk interface. Note how you can now access the ports on the side and back of your machine.

Penetrating

Simon Forrester takes you on another scary ride through the complex and terrifying world of PASCAL. This month we start looking at how to approach writing a database.

Last month you learnt everything you need to know to get simple programs up and running. Simple programs. That's all going to change. This month, you're going to start work on your database.

There are two ways you can write a database. You can either write yourself a crabby little address book, or you can write yourself a full, flexible, malleable database system for powerfully manipulating complex, precise data. And as 38,000 people prepare to write a crabby little address book, one man turns around and shouts: "No – I want to write myself a full, flexible, malleable database system for powerfully manipulating complex, precise data." That one person is me, I'm afraid. You're going to write something a little more, well, ambitious.

A complex database isn't really as scary as it sounds – all it means is that you're going to enable the user to define the type of data to be stored, the way it's presented, and exactly what's done with it. Everything is flexible, enabling the user to create a database on anything from tropical fish to Norwegian leather exports. It works quite simply – your data is structured as a series of records, each of which is a separate file card.

You're going to enable the user to define the type of data stored, the way it's presented, and what's done with it

```
File Block Find Mark Options
Line:    1          Filename: DIRTEST.PAS
PROGRAM dir_test ;

 TYPE
   fn_range = 1..14 ;
   fname = PACKED ARRAY [ fn_range ] OF char ;
   frec = PACKED RECORD
            reserved : PACKED ARRAY [ 0..19 ] OF byte ;
            resv2 : byte ;
            attrib : byte ;
            time_stamp : integer ;
            date_stamp : integer ;
            size : long_integer ;
            name : fname ;
          END ;
   path_name = PACKED ARRAY [ 1..80 ] OF char ;

 VAR
   r : frec ;
   i : fn_range ;
   path_string : STRING ;
   path : path_name ;
```

■ This is a program from the *Pascal* library. It might look complex but it's actually made up of the sort of simple elements that we're teaching you in these tutorials. By now, you should be able to look at a program like this and have an idea of how it's constructed, and why. If not, you didn't read last month's tutorial, did you?

Every record has fields – they're the individual chunks of data to be stored. The fields of an address book would be name, address, phone number, post code – things like that. Though you can have as many records as you like, with any fields you choose, the names and types of the fields are universal. So you couldn't have one record with a totally different set of fields to the rest. This is handy, because it makes the package easier to use. And once you've defined the fields you want to store the data in, the program turns into your record database, film collection, address book or whatever.

The file you're saving out will have to contain the header information – for example, the header information for the address field would be 'Address'. It also contains the actual information in each field – for example, the number and street name. For now you're going to create a RAM database, which means that your program loads its information into RAM for the user to play with, rather than keeping it

HUR TIS (or how to write a database, step by step)

The big scary program you're writing has to follow a basic pattern if it's to work. The technical side to all of this is something we'll be dealing with next month, but this month you're going to concentrate on understanding of exactly what you're doing. In nice easy steps, as follows:

1. Accepting data entry

The first thing you want to do when the user asks to enter another record is find out exactly how many records you're holding at the minute, and whether you've got room for one more. Let's assume, for now, that you're working with 50 records. In reality you could store several hundred more, but there's no point in working to silly scales like that just to understand the principle.

So, you need to keep a variable stating how many records you've already stored. Let's call this variable 'tr', standing for 'total records'. All you have to do is make sure this variable isn't equal to 50, and you can go ahead and add another record.

2. Entering the data

Next, the user has to be able to enter their data. What you'll have to do is display the title of each field, and ask for an input corresponding to that field. For instance, if your database is going to be an address book, you'll need to prompt for name, address (about 3 lines), postcode and telephone number. Next to each field should be something like a ':', after which the user types the information. The entire process should look something like this, with the computer's text in bold and the user's typing in normal font (to make things easier for you):

Name :ST FORMAT
Address :30 Monmouth Street
:Bath
:Avon
Post code :BA1 2BW
Phone number :01225 442244

3. Getting input

You're doing well so far – you've prompted the user for their entries, so now you need to store what they've entered. You can use the 'readln' command, taking their input as text. All you have to do is store what they've entered. This is where your problems really start.

4. Easy access

One of the great features about disk drives is that data isn't stored analogically – you can effectively skip back and forth from one piece of information to the next easily, whereas

PASCAL

```
File  Block  Find  Mark  Options
Line:    1          Filename: HAIRY1.PAS
program database (input, output);

var comm: string[10];
var i: integer;

procedure add_rec;
begin
end;

begin
 readln(comm);
 i:= pos('add',comm);
 if (i=1)
  then add_rec;
end
```

■ Programs are always easier to follow if you indent your loops, and sub-routines. It doesn't help the programs compile, but it makes them easier to read.

on disk. This is mainly because RAM manipulation systems are a lot easier than random access disk filing systems. We may be cowards, but it's for a reason.

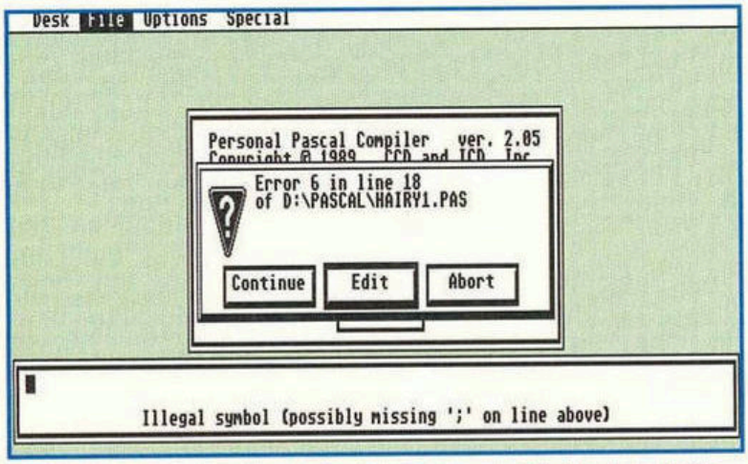
What to do?

Your program has to consist of the following main sections:

- Define the field information. Your program is going to have to give the user a chance to define exactly what type of database they'd like to create.
- Data entry. You also need a system for feeding the package the data that it's to store.
- Retrieval. Of course, you'll need to look at the data that you've stored. Retrieval can be anything from just flicking through individual records to searching, printing and cross-referencing.
- Filing. You'll need to load and save the data.

You're going to do this in logical order, so you'll start by writing a simple parser system from which the user can select any one of these options. The parser is the important bit – it enables the user to tell the software exactly what to do and how to do it. You can find parsers in text adventure games (the bit that you type your instructions into), MS-DOS (same again), platform games (the bit that reads which way you move the joystick) and your Desktop (the whole Desktop system).

Your parser is going to be the central structure to the program, but we're not going to worry about it at great length now. All you really need for the time being is a working model, which will send the user to one of the three program sections listed above (don't worry about filing for the time being).



■ Compiling a program always makes for a tense moment. Don't be alarmed when you get errors, just work on everything you're told: the error is on line 18, and involves missing punctuation on the line above. Easy peasy.

The parser

Dramatic drum hit please. And your big, scary, dramatic parser looks like the listing below. Type it in, compile it, remember to save the listing and see what it does. But don't get too excited. If all goes well, it should enable you type something in before it stops dead. If all goes badly, er, start again. This is because none of the commands to run from the parser have been added. The commands, when you've added them, will be the parts that do the storing, printing, and recalling of information.

```
program database (input, output);

var comm: string[10];
var i: integer;

procedure add_rec;
begin
end;

begin
 readln(comm);
 i:= pos('add',comm);
 if (i=1)
  then add_rec;
end.
```

Remember, all this part of the program does is enable the user type something in and then act on it by calling the correct routine. How does it work? Well:

```
program database (input, output);
```

Once again, this line simply tells PASCAL that this program is an input and output program, and reminds you that it's a database, in case you'd forgotten.

```
var comm: string[10];
var i: integer;
```

users of old tape machines (the 8-bits) are limited to the next piece of information (we call it sequential access), and are unable to go back to an earlier section unless they get the user to rewind the tape. Apart from the increase in speed, this is the main advantage of using a disk drive – could you imagine how a hard drive would work if it was on tape?

This is also helpful for you, because it means you don't have to store your file in memory. It'll slow the program down a little, but the decrease in speed is compensated for by the fact that you can have a database file of any size, as long as you've got the disk space to store it.

5. The difficult bit

Well, it's not really all that difficult to be honest. All you really have to do is open the database file and tack the new entry on to the end. So far, you know exactly how many records are stored there already, and you know exactly how long each of those records is. You know this because instead of storing them economically, you're going to use a slightly different system (don't worry, it won't be all that bad).

When you set up the string variables at the beginning of the program, you define how long each string is. If each of your field entries can be a maximum of 30 characters and you have 6 fields, you know that the total length of that record will be 6*30 (180). If you're adding the 14th record, you need to pass the 13th to get to the correct position. So the sum is 13*180, coming to 2,340, the amount of characters you have to pass.

So, when you've travelled past 2,340 characters, you add the new ones to the file, increase tf by one to signify that you've added another file, and close it again. Of course, each field doesn't have to be 30 characters long. You might only have a 15-character phone number entry, or a 10-character postcode entry, but as long as you define this from the start and bear the changes in mind with all your calculations, you'll be just fine. These field sizes are common to every single record, though – if you had an indeterminate field length for anything, you'd never know how far to travel into the file to get past it.

6. Cheer

You can sit back, now. You understand the theory behind adding a record to your file. Next month, you'll be concentrating on the full listing that will enable you to do just that, although if you're really brave you might like to try knocking something up for yourself in the meantime. Tatty bye.

Here, you're setting up your variables, namely comm (intended to hold the user's command) and i (used later).

```
procedure add_rec;
begin
end;
```

Don't worry about this routine yet – it's simply the part into which you patch your data entry routine.

```
begin
```

This marks the beginning of your main program routine, in this case the parser. It's the central point of the whole program, unimportant though it is.

```
 readln(comm);
```

This uses the readln command to take the user's input, and place it in the comm string.

```
 i:= pos('add',comm);
```

Ooh – looks complicated. What you're actually doing is using a routine from the PASCAL library called 'pos'. This routine effectively compares strings, placing the result in the i variable (at the start of the line). If the two are identical, i contains a 1; if they're different it comes up with a 0.

What you're really doing here is comparing the user's input with the string 'add'. So if the user types add a 1 will be returned.

```
 if (i=1)
```

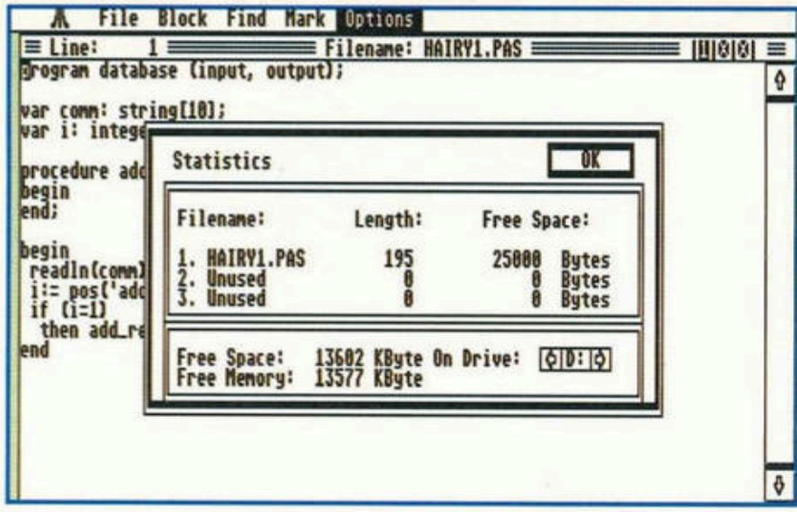
This line takes action on the result. So if it's a 1, it executes the following statement.

```
  then add_rec;
```

This is still part of the 'if' command, really. It's the second half, telling the program what to do if the expression in brackets (i=1) is true. In this case, if i=1 you'll execute the procedure add_rec. All you're really doing, right from the i:=pos line, is jumping to add_rec if the user types add. Follow the process through (with your finger, or something) and you should see what I mean.

```
end.
```

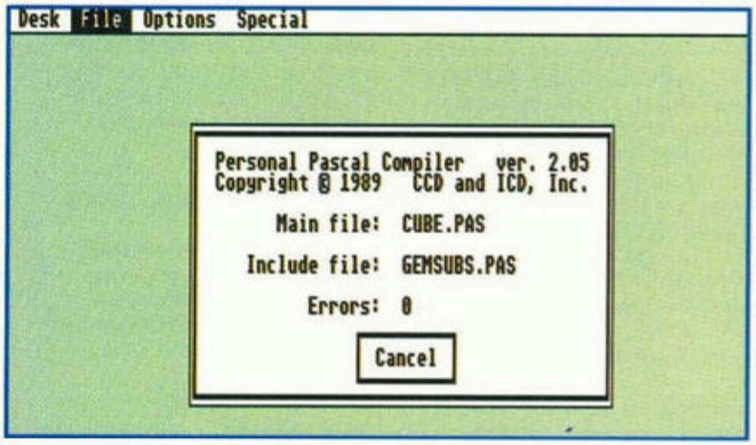
It's the end of the program for now. But only till next month...



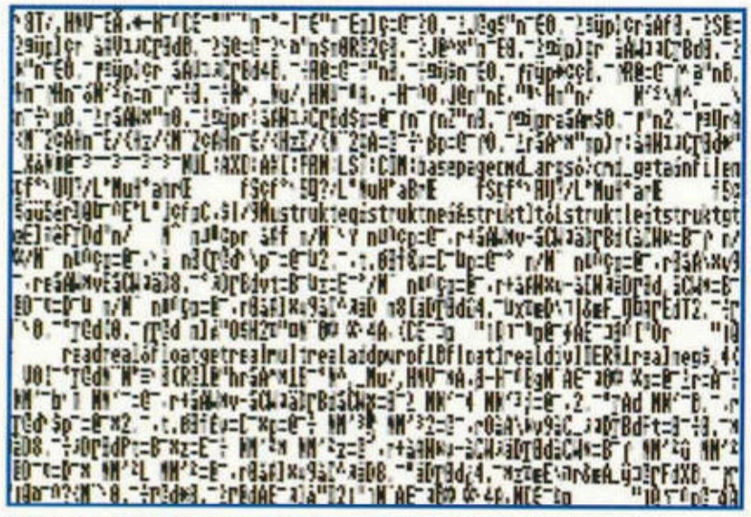
■ As you can see, there's always plenty of free space in memory for your programs to run in. This one took 195 bytes, out of a possible 25,000 bytes that *Personal Pascal* makes available on any ST. You can fill the other 24,800 bytes yourself.

Storing information

The next part of the program that you have to consider is how it's going to store all the information that your user is about to enter. For this, you'll need to read the big boxout called 'Hur tis', which takes you through what you need to do to accept and store information. We'll be dealing with the program in full next month, including a listing on the Cover Disk. If you didn't read the tutorial last month, and you're intrigued to try out this PASCAL business, you need a back issue. Turn to page 85. Okay? ***stf***



■ Now that's what you should be aiming for when you compile your program – absolutely no errors. If you get errors, check your listing for missing punctuation, things like ; and . They're most likely to be causing the problems.



■ Many a new PASCAL learner comes to me about pictures like this, wondering what it means. Don't worry, it's friendly. Minus control codes, this is in fact the *Personal Pascal* library. Pity it looks like a load of random tosh really, isn't it?

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GFA Explained

In the second part of our easy-to-use *GFA Basic* tutorial Simon Forrester starts writing the menu structure for a simple but useful disk utility.

Last month we introduced you to *GFA* gently, teaching you simple commands, variables and loops, to provide a basis on which to build the rest of the tutorial. If you missed it you'd better order a copy of issue 65, unless you're already fairly confident with *GFA Basic*, because this month we're starting something a little more daunting to keep you people really scared... Er, challenged.

This month, we're going to crack into the first part of a menu-based disk utility, which will be presented to the user as a number of functions to be selected from a series of menus using the mouse pointer. Disk utilities are truly wonderful things: you can format, copy, and verify disks a lot faster than using GEM; you can copy files in batches (without swapping the disk for every file); and they generally make complicated disk operations a whole lot simpler.

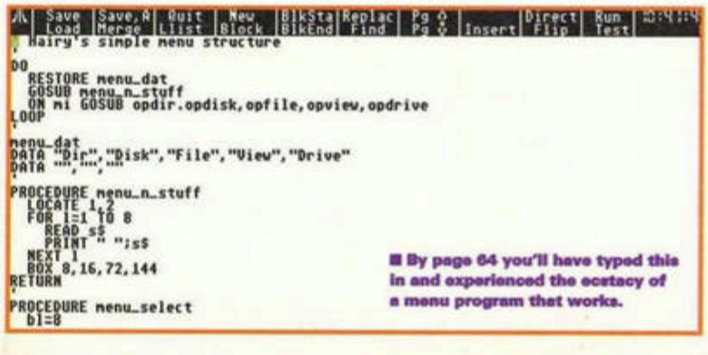
What you're about to do will draw a lot on what you learnt last month – using variables, loops, and simple program structures. You're also going to display things on screen, which we covered with the PRINT command. This month, you're going to see what you've already learnt in action.

Now the difficult bit about tutorials like this is that we have to write all the programs, which you then type into your ST in a somewhat mindless fashion. To help your learning process, try to work out exactly what each line does and why, before you read the explanation that comes below it. After all, you'll never learn anything if you just sit and read.

"This month we're starting something more daunting to keep you people really scared... Er, challenged"

The best way to start thinking about this program is from the point of view of user. The first thing they're going to touch when this program loads is the mouse. The mouse is a simple little device that enables you to move the pointer around on screen, clicking on things to activate them instead of typing commands (you double-click on a file, instead of typing its name into MSDOS).

Our utility is going to be mouse driven as far as possible – the user will use the pointer to select items from the menu, and the program will act on that selection. So before you start anything, you need to look a lot harder at...



By page 64 you'll have typed this in and experienced the ecstacy of a menu program that works.

Mice

You're going to write a simple program that moves a mouse pointer on screen, displaying its co-ordinate location when the left mouse button is clicked. If the right button is clicked, the program stops.

This program uses the commands that you learnt last month, and also introduces a few new MOUSE commands:

SHOWM

This command makes the mouse pointer visible on screen, moving in time with the mouse in a normal, ST kind of way. Had this command not have been issued, the mouse would still move but the user wouldn't see the pointer.

MOUSE mx, my, mk

This command returns the state of the mouse in the three variables you specify. We're going to use mx, my, and mk for clarity. The mx and my variables contain the x and

THAT PROGRAM IN FULL

Here it is, the final menu structure program. Type it in, and marvel at the fact that there's nothing past the menu (that's next month):

```
' Hairy's simple menu structure
'
DO
  RESTORE menu_dat
  GOSUB menu_n_stuff
  ON mi GOSUB opdir,opdisk,opfile,opview,opdrive
LOOP
'
menu_dat:
DATA "Dir","Disk","File","View","Drive"
DATA "","",""
'
PROCEDURE menu_n_stuff
   LOCATE 1,2
  FOR i=1 TO 8
    READ s$
    PRINT " ";s$
  NEXT i
  BOX 8,16,72,144
  GOSUB menu_select
RETURN
'
PROCEDURE menu_select
  bl=8
  br=72
  bt=16
  bb=144
  mk=0
  DO UNTIL mx=>bl AND mx<=br AND my=>bt AND my<=bb AND mk=1
    MOUSE mx,my,mk
  LOOP
  mi=mx-bt
  mi=INT((my-bt)/16)+1
RETURN
```

y co-ordinates of the pointer, and mk contains the key state. If the left button is pressed, mk=mk+1. If the right button is pressed, mk=mk+2. If both are pressed then mk is 3 (mk=mk+1+2).

HIDEM

Working in relation to the SHOWM command, this command hides the mouse again.

An example program for you to try is as follows:

```
SHOWM
DO
  mk=0
  WHILE mk=0
    MOUSE mx,my,mk
  WEND
  PRINT mx,my
  IF mk=2
    HIDEM
    END
  ENDIF
LOOP
```

■ Cast aside your inbuilt disk operating system in favour of a hand-written system that looks a little like this.

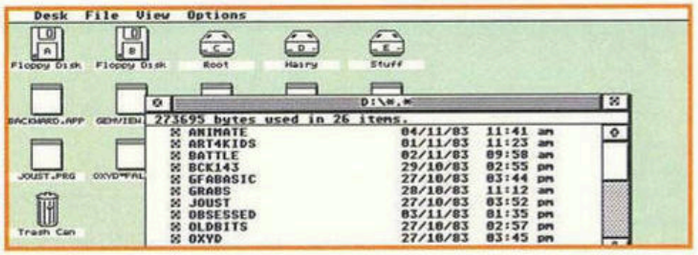
Try typing in and running this program and take a look at the results on screen. But don't bother saving the program. This is really just for you to practice.

But what use is a program that prints the position of the mouse on screen? Well, you'll make use of this knowledge in writing your mouse-driven utility, and you also need to make sure you understand programs at this level of complexity.

To GEM or to menu?

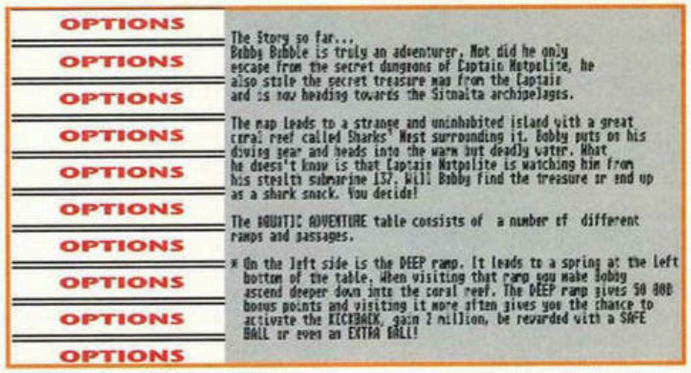
The next task you need to address is what kind of menu structure your utility will be based on, and what screen the user will be presented with on opening the program.

There are several ways in which you can approach this problem. You could use a totally GEM-based system. This would involve programming in *GFA* but using the GEM routines that are already sitting around in memory, giving you the familiar GEM type of screen. But this teaches you little or nothing about BASIC, merely dealing with GEMDOS. An alternative option is to get your screen looking a little like the one above.



This is a little different to the standard GEM interface you're used to seeing on the ST. But then, programming is all about originality, and trying to create a more user-friendly interface is definitely A Good Thing. A learning experience. And another advantage is that the menu can be permanently on screen no matter what you're doing, as opposed to the GEM system where the menu disappears whenever you do anything.

■ The handy thing about programs like the ones we're writing is that it could actually go a little way to replacing the Desktop for people without time to mess around.



The menu, Sir?

So you'll start off this month writing a menu program, and spend next month adding the individual routines (the chunks of the program that do things like copying and formatting). This month therefore you have to think a bit about how a menu system works.

Drawing and executing a menu may sound like an arduous task, but it's a simple process, really. All you have to do is follow these steps:

1 – Draw a box on the screen
2 – Fill it with the text for the various menu items
3 – Let the user click on the screen

Here's the listing explained in full. You might want to refer to the GFA manual that came with the interpreter – the numbers in brackets after explanations point you to the relevant sections.

```
' Hairy's simple menu structure
'
```

You can add comments to your programs by preceding them with an apostrophe. Or you can use an apostrophe to break up a piece of program to make it visually more understandable.

```
DO
```

This is the beginning of your main loop. It will continually access the menu program. (210)

```
  RESTORE menu_dat
```

The RESTORE command refers to the DATA statements later. Remember this command has placed a pointer at the data straight after menu_dat. (148)

```
  GOSUB menu_n_stuff
```

This jumps to menu_n_stuff, your menu routine. (215)

```
  ON mi GOSUB
opdir,opdisk,opfile,opview,opdriv
e
```

This is a complex one. The menu routine returns the numerical value of the option selected, and you're asking the program to call one of the sub-routines (opdir, etc) on the result. If mi=3, opfile will be executed. You haven't written the routines on the end of this command yet. (199)

```
LOOP
```

This command responds with DO, forming a complete loop. (210)

```
'
menu_dat:
DATA
"Dir","Disk","File","View","Driv
e"
DATA "","",""
```

This is the data referred to by the RESTORE command. After the command DATA, you can place lists of information, for the READ command to access later. (148)

```
'
PROCEDURE menu_n_stuff
```

The start of the menu_n_stuff procedure. (215)

```
  LOCATE 1,2
```

This places the text cursor at the position stated (x,y from the top left corner of the screen). (131)

```
  FOR l=1 TO 8
```

You've already experienced the FOR loop, so you know you're setting up a loop to be executed 8 times (for each entry on the menu). (206)

```
    READ s$
```

The READ command, corresponding to RESTORE and DATA. As the RESTORE command was issued on the menu_dat data block, this READ command will take the first piece of info from that block ('dir') and place it in s$. When executed a second time, it'll read 'disk'. (148)

```
    PRINT " ";s$
```

Print that information to the screen preceded by a space. (131)

```
  NEXT l
```

Completes the FOR loop, printing the next menu item. (206)

```
  BOX 8,16,72,144
```

For neatness' sake, this draws a box around the menu. (276)

```
  GOSUB menu_select
```

Then jumps to your real, meaty menu routine. (215)

```
RETURN
```

And back to the first section of the program, straight after the GOSUB that sent you here. (215)

```
'
PROCEDURE menu_select
  bl=8
  br=72
  bt=16
  bb=144
```

Those variables are the positions of each edge of the box. (STF65)

```
  mk=0
  DO UNTIL mx=>bl AND mx<=br AND
my=>bt AND my<=bb AND mk=1
    MOUSE mx,my,mk
  LOOP
```

You can explain this section as one big chuck. The DO UNTIL command executes the loop command until every condition after the statement is met. The loop consists of one command, MOUSE, to grab the position of the mouse into the variables tested by DO UNTIL. LOOP, as usual, closes the loop. (211)

```
  mi=mx-bt
  mi=INT((my-bt)/16)+1
```

Takes the pixel position from the top of the box and converts it to the number of lines down. (STF65)

```
RETURN
```

The end of the procedure. (215)

4 – Check that they've clicked inside the box
5 – Check whereabouts inside the box they've clicked
6 – Convert this location into a line number (for example, they selected line 3 of the box).

You start with a box, which has four sides, and each side has a location on either the x or y axes. So, if you're careful, you can refer to the edges of your box as bl and br (for the sides), and bt and bb (for the top and base).

To check whether the cursor is inside the menu box, you take mx and my (which are the current co-ordinates of the location of the mouse cursor), and run the following tests on them. If any fail, you don't accept the input:

1 mx=>bl
2 mx<=br
3 my=>bt
4 my<=bb

The symbols '<=' together mean 'is smaller than or equal to'. So what you've done is made sure the cursor is inside the boundaries of the menu box when the mouse is clicked. If it isn't then you reject the input and start again.

Menu item number...

Once the cursor is within the boundaries, you need to turn it into the number of the menu option selected. This is easy – the pointer measurement is in pixels, and each of your menu option entries is one character height, or eight pixels, high. To find out how far down the list the cursor is located you need to subtract the current cursor position from the location of the top of the box:

```
mi=mx-bt
```

The variable mi refers to the 'menu item' selected. At the minute, it contains a number that refers to how far down the list the cursor is, as measured in pixels. To turn this value into something a little more manageable, you divide it by 8, which means it's now measured in character height. If it's anything under 8 before it's divided it'll come out as zero, so you need to increase the value by one. To calculate mi, you use the line:

```
mi=INT((mx-bt)/8)+1
```

This means that if the pointer is clicked on the first line of the menu box, the routine returns 1 in mi. If the pointer is clicked on the second line, mi contains 2, and so on.

The following routine is your main menu structure. You send it the menu information, and it returns the number of the item the user has selected:

PROGRAMMING IS THEFT

It might be controversial, but it's true – programming is theft. Because the functions of a language like BASIC are all preset, there's no such thing as an original command in itself. But, just as books are original works built up of unoriginal words, programs are still original works, because the important bit in *GFA Basic* is the way the commands lock together.

Now reading is an educational process – you tend to pick up new words and word structures in the process. And the same is true of computer programs, but strangely, you don't tend to see people nose deep in the *GFA* manual. Let's steal a chunk from it anyway:

```
MAT READ c()
MAT PRINT b(),5,1
PRINT STRING$(18,"-")
MAT PRINT c(),5,1
```

Now before you run off screaming, I should warn you now that the MAT commands are to do with matrices, and, as such, are way too mathematically complicated for this time in the evening. One other interesting command is STRING$. You already know what PRINT does, so let's try that command again:

```
PRINT STRING$(18,"-")
```

This prints a row of dashes, as you'll find out for yourself if you run the command. Let's change the parameters slightly:

```
PRINT STRING$(3,"Wibble")
```

What happens? This appears on your screen:

WibbleWibbleWibble

Which tells you that the STRING$ function will print a string a specified number of times. So now let's document this function, where 'count' is the number of times you want to repeat the 'string':

```
PRINT STRING$(count,string)
```

If the function displays text strings (signified by the $ on the end), you could even use:

```
a$=STRING$(3,"Wibble")
```

This may all seem incredibly complicated, but the point is that you don't have to understand any of this initially. Just have a play around, and experiment with loads of different commands. To get you into the spirit of things, try to work out what this does:

```
PRINT LEN("Arthur")
```

■ **Procedures. One of the best things about *GFA* is the way it shows the nesting of programs as well as the flow.**

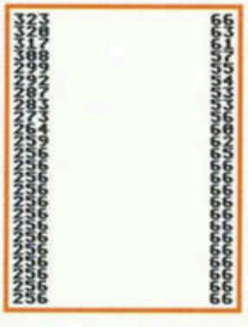
```
PROCEDURE menu_select
  bl=8
  br=72
  bt=8
  bb=72
  mk=0
  DO UNTIL mx=>bl AND mx<=br
AND my=>bt AND my<=bb AND mk=1
    MOUSE mx,my,mk
  LOOP
  mi=mx-bt
  mi=INT((mx-bt)/8)+1
RETURN
```

Now, if you've typed all that in and are now wondering why it doesn't actually work, it's because you need the following program to call the routine. Enter these lines in front of the routine:

```
BOX 8,8,72,72
GOSUB menu_select
END
```

As you can see, the program waits for the user to select something, then prints the number of that selection on screen. The only way your system will differ from this is that it won't be printing the selection number, it'll be acting on it. For a more accurate description of how this program works,

■ **As you move your mouse, the program continues to display co-ordinates. Endlessly.**



```
PROCEDURE menu_select
  bl=8
  br=72
  bt=8
  bb=72
  mk=0
  DO UNTIL mx=>bl AND mx<=br AND my=>bt AND my<=bb AND mk=1
    MOUSE mx,my,mk
  LOOP
  mi=mx-bt
  mi=INT((mx-bt)/8)-1
RETURN
```

make your way to the 'That program in full' panel, where it's explained in more detail.

So far, then, you've got a menu system that can be called from anywhere in the program (using the GOSUB command, as seen in the "That program..." panel). This means that you can have a totally free system, with some menu options leading to actual routines, while others lead to yet more menus. All you have to do now is design the structure of the program from the user's point of view, deciding exactly what options go on each menu, and exactly where each menu sits.

The main menu...

The main menu of your program consists of lots of sections:

Dir Getting a disk directory to show on screen. This fits into just about every other category, but it's overused, and therefore deserves a place of its own on the main menu.

Disk Just as the File menu deals with files, the Disk menu deals with copying and formatting disks, as well as verifying and even defragmenting them.

File This option deals with manipulating files: moving, copying, or deleting them.

View Of course, the user might want to view the contents of a file. Text typing, picture displaying and maybe even sample playing are required, depending on file type.

Drive And the user has to be able to select which drive they're working on.

There are also going to be sub-menus (such as File) and straight routines (like Dir). These intermingle into your menu system – all of which make it truly flexible.

No way

Right. This month we've written the menu system, and next month we're going to write the meat (or, for the vegetarians among you, the lentils) of the utility, which involves lots of routines. But we're not going to finish the whole package. No, there's absolutely no reason why you lot shouldn't write some of the routines and send them in to: I'm getting quite good at this *GFA* lark, *ST FORMAT*, 30 Monmouth Street, Bath, Avon, BA1 2BW). The winner will receive not only immense fame and glory on the *ST FORMAT* Cover Disk, but also something wet... **stf**

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ST First Aid

Is your ST fraying at the edges? In the first of a two-part series, Simon Forrester takes you through some of the essentials for keeping your machine in the land of the living.

Now if you've spent anything over, say, two months using a computer you'll be well aware of just how easily they can go wrong. It's not that computers are badly designed, it's just that for household items that get knocked, clumped, chipped, scratched, and generally abused by everyone including the cat, they're incredibly complicated, precisely-engineered pieces of kit. When you consider how careful you are with that expensive stereo, it's amazing that you ever actually take your ST out of its packaging.

All of this isn't intended to make you too scared to use your ST. You just have to appreciate that, particularly when you consider the amount of money you paid (a fair bit), your ST has to be handled with care. Cared for properly, it could last you a lifetime, but a badly treated ST will just get progressively more glitchy until it dies.

Over the next two months we'll take you through everything you need to know about basic ST care. If you have any other tips concerning maintenance and upkeep that you'd like to share with the rest of the world, send them to: ST Answers, *ST FORMAT*, 30 Monmouth Street, Bath, Avon, BA1 2BW marked 'Top tip'.

One more thing – 80 per cent of what you read here you may know already. This feature is not to patronise, just to warn and remind. Your ST is a powerful, versatile and valuable piece of kit, and you should take good care of it.

GENERAL TIPS

We'll deal with viruses, cleaning and data storage later, but first a few general hints.

Fluids

Some people don't like to get things like drinks anywhere near their computer. The rest of us, who are in fact humans and not aliens, suffer the occasional spillage. There is a way for aliens to drink coffee while typing, though, in the form of a keyboard cover from Kador, which enables you to type on a protected keyboard for only £14.95. Because Kador are such wonderful people they've decided to give *ST FORMAT* readers a discount of £3. The kit also comes with a free cleaning kit to get your keyboard sparkly fresh before you safely seal it – contact Kador on ☎ 01443 740281 for more info, right now.

A keyboard cover, in action, live from our London studio. Even as we watch, the user is screaming in agony as scalding coffee pours all over his lap.

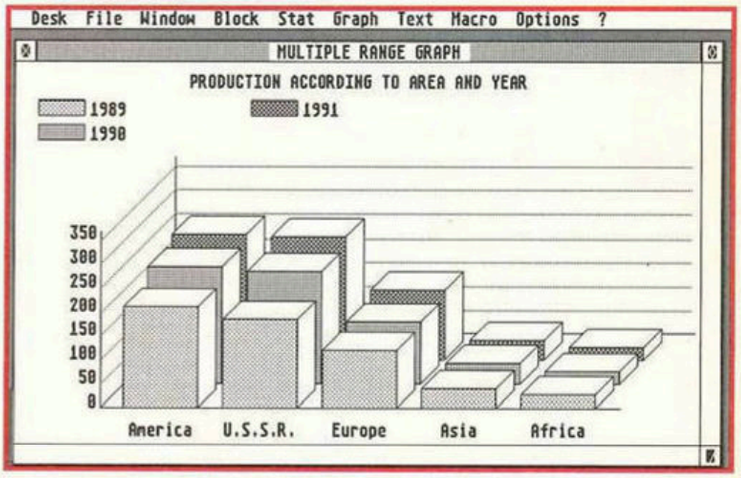
Arizona Computer Club

One of the reasons your ST is so delicate is because everything inside it is so damned small, which means elements can be dangerous things. Before you start worrying about pouring cups of coffee into the keyboard, what about things like moisture in the air? Computers don't go well with condensation and humid environments. Make sure that your machine is kept in a fairly cool, dry place.

Solids aren't too much fun either. You might like to invest in a set of dust covers to keep those lumps of ethereal crap *(er, dust? – Jill)* out of your keyboard. Dust is dangerous stuff – a major cause of barn fires in fact – and although exploding STs aren't exactly common (well, not round here anyway), highly-combustive dust and electricity don't go hand in hand.

Phosphor burn

Have you played *Pole Position* in an arcade recently? If you have, you may have been slightly confused by the words 'Game Over' appearing on the screen throughout the game, albeit in faint lettering. This is a failure in the monitor, not the software. If you display something on a screen for long enough it'll be burned on to the phosphor coating on the inside of the glass, leaving a ghost behind for good. This is known as phosphor burn.



This may look like a *3D Calc* grab, and in fact it is. Y'see, we were going to review it this month and then at the last minute *Zero-5* appeared and... Anyway, it's also a perfect demonstration of phosphor burn, as the ST was turned off at the time.

What can you do? There are parts of the screen that nearly always display the same thing (the word 'File' on the menu bar, for instance), and after several years of use that menu bar is going to be pretty much burnt on to the screen. What you need is a screen-saver.

Screen-savers are programs that load into RAM on start-up, and wait, counting how long it's been since you last pressed a key or moved your mouse. If a set time limit is exceeded then the program clears the screen and displays other moving objects, usually on a black background. The menu bar will be removed before it gets a chance to burn itself on.

Since the invention of the utility there have been many advances in the field, resulting in modular screen-savers that do all manner of entertaining things. You can get yourself a copy of *Before Dawn*, an excellent PD screen-saver for both the ST and Falcon, by ordering Cover Disk 55 (page 85).

STORAGE MEDIA

One of the most important things a computer does is store vast amounts of information. In fact, this activity is so important that multi-million-pound industries selling disks, hard drives, optical disks and CD-ROMs have developed. Your ST is no exception to this rule. Floppies are vital for transferring information from one machine to the next, and hard drives are essential for any serious ST work. Like any other component in a computer setup, though, disks and hard drives can go wrong with very little encouragement. There are a few ways you can protect yourself from hard drive crash problems, though.

Troubleshooting – got a problem, mister?

How can I stop hard drive head crashes?

You can never protect yourself totally from head crashes – they can happen to anyone at any time. You can reduce the risk of being hit, though, by remembering a few simple rules about hard drives:

- They should be parked when moved, to stop the head knocking into the cylinders on which the data is stored.
- They should never be turned off when they're reading or writing.
- They should always be kept and run in as dust-free an environment as possible, so that gunk can never touch the head or a cylinder.

Can I protect my data from crashes like these?

The simple answer is no – if your hard drive crashes, it could go crazy. It could crash completely and proceed to destroy everything else on the drive. The only way to ensure that data is safe is by backing it up. Although there's a lot of data on a hard drive, you should always back up the more important bits on to floppies and store them carefully. Any backups you make should be write-protected and stored in a dry place, preferably in a lockable disk box. If the worst comes to the worst, make use of the Cover Disks as blanks, but make backups. Right now.

Disks corrupt when I send them through the post.

If you're using the British Post Office you won't suffer things like X-rays too often. Overseas post is a different matter entirely – large packages flown anywhere get zapped. If you do have to send something by plane or into a situation in which it'll be X-rayed you might get away with writing "Computer media – don't X-ray" on the envelope. Failing that, if you're sending disks back and forth repetitively then invest in a lead-lined disk box. It'll be too heavy to airmail cheaply, but you'll know your data is completely safe.

My disks have a limited life span, and always corrupt after so long. How can I stop this?

Floppy disks are always problematical, and the problem starts when you buy the disk. When given the choice between dodgy, unbranded, cheap tat and a box of 3M, get the 3M. The difference in quality between one brand of disk and another is staggering. When you've got your disks home, there are a few basic things you should do:

- Store them in a dry place, away from all moisture (not in that mouldy cupboard by the sink).
- Never do silly things like sliding the shutter back yourself.
- Keep them away from anything emitting strong magnetic or electromagnetic fields such as monitors, telephones, electric motors and the Des... (No, sorry, just kidding there.)
- Never store them in environments colder than 10°C or hotter than 60°C. God did not intend such temperatures for man nor magnetic media.
- Never insert or remove floppy disks from the drive while they're being accessed.
- Never turn your machine off when a disk is being accessed.

My disks get stuck in the drive.

Most drives don't actually eject your disk. Instead they let the spring in the shutter do the hard work of pushing the thing back out into the open. It's a complicated system, but makes for less parts to go wrong internally. If you get a lazy disk – one that doesn't have a mechanism strong enough to push it out – stop using that disk. Take advantage of the fact that it's already in the drive and copy it, but don't try to use it again. It's not worth it.

Sometimes disks just get stuck. Either they shed parts (like the shutter) into your disk drive and get jammed, or your drive eject system fails. In such cases, the last thing you should ever do is start poking around with a screwdriver. Turn the machine off, then roll it on its side, and try again, letting gravity help. If you still don't have any luck, try grabbing the disk with a pair of tweezers and pulling, while holding down the eject button. If at any point the disk jams and doesn't want to come out, don't force it – you could be dragging a twisted shutter straight into your read head, and that hurts. Instead you need start talking nicely with a local electrical goods shop that offers a repair service.

My disks keep falling to bits.

The other thing you tend to forget about floppy disks is that they aren't made of titanium. It's very easy to break the flimsy plastic casing, and even easier to damage the spring-shutter mechanism. Apart from remembering not to frisbee the things around (pleasing though it is, and something we tend to do a lot round here), you should always package disks carefully for postage:

- Wrap them in bubble-wrap (while being careful not to slide into a bubble-popping frenzy).
- Make sure the envelope can't be folded – a piece of corrugated cardboard works wonders.
- Place the disk in the envelope shutter down – the flap end of the envelope gets the most abuse.

My hard drive won't boot.

If you bought your hard drive new, you'll have received a disk with it containing the hard drive boot software that lets the ST know there's something there. Which you *undoubtedly* filed away carefully. If your drive won't boot then the odds are this is why. Re-install the driver on to your hard drive, and try again. Or you may have dirty connections somewhere along the line, in which case you need next month's section on cleaning your ST.

Always treat reformatting your drive as an absolutely last resort. When you format a drive, you erase its contents totally, so be prepared to start from scratch.

Other tips

There are a number of other things to bear in mind for a totally carefree magnetic media situation:

- Always keep blank disks handy. The chances are that you're going to find yourself in a package wanting to save out an important file, but with absolutely nowhere to save it to. In these cases it's easier to keep a few formatted, fresh disks standing by rather than write over another important one.
- Always clearly label disks and files. If you're looking for your CV file, which could be called anything from Wibble to Rwgfrtyb on any one of five unlabelled disks, you're heading for serious blood pressure.
- Always write-protect your disks. Most disks you'll use only need to be read from, so get into the habit of flipping those tabs. It's easier to flip a tab back than to recover the utility you erased to decompact *Starball*. Obviously, you should practise a little discretion here. **stf**

Next month we carry on the tutorial, looking at cleaning your ST, and dealing with viruses. And Nick gets his Marigolds on in a very attractive manner. At least, we thought so. Your machine will love you for it.

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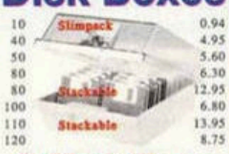

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Elite by Firebird (must be an original!) on loan or purchase. Contact J Bond, 24 Heathrington Gardens, Nottingham, NE5 9EA.

Reflex graphics card for Mega STE computer, phone Paul during work hours on 0171 219 4768.

Second-hand software for sale. For list send SSAE to Keith Hunnybun, 30 Albany Road, Newport, Isle of Wight.

Princess locked away in ivory tower, can only be released by copy of ST1040 manuals. For your reward send to Jan Bidel, 16 Malden Court, London, N4 1UH.

Boot disk for Atari Megafile 20 hard disk drive, must have 204 boot.img and 204 root.img files.

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Autoroute by Nextbase Ltd for Atari STE, full version only (not demo). If you can help please phone or send disk - cheque by return post. Harry Peers, 47 Pine Way, Cheriton, Folkestone, Kent, GT19 4QL, or 01303 270329.

Wanted: exchange of information relating to German word translating. Also manual for Amstrad printer DMP3000. 01268 698433.

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Domark - F1, Midwinter, Battlehawks - 1942, Pinball Majic, plus other games for swap or exchange for Atari Lynx games. Originals only please. Call 01609 773276.

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Novadisk 4, Star Trek disk fanzine will be available 4 Nov. £1 +SAE. James Bird, 91 Elm Tree Ave, Kilburn, Belper, Derby, DE56 0NN.

Assistance required. If you're successfully using a Star LC24-200 colour printer for letters and graphics printouts. Write to Mark. 3 Nowells Lane. Bourne. Lincs. PE10 9ER.

ST contact wanted to exchange software. Write: Steven Batch, 12 Edwards Road, Sprowston, Norwich, NR7 8QW.

ST Professional issue 1! Get the newest and slightly crap diskmag around for £1 with PD on disk. Ring Simon on 0161 437 7474. Greets to Nick Peers.

Can you draw? Want to produce Falcon-only games? I code in MC68030 and DSPS6001. Mark 015395 32070.

To Black Widow (Tracy). Many thanks for the Jaguar and Tempest 2000. Hugs and kisses... Renegade (Lee).

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Atari ST Usenet newsgroups:
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comp.sys.atari.announce
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Atari Web sites:
Atari CD FAQ:
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Atari ftp list:
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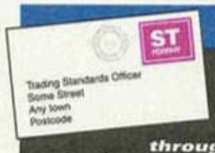

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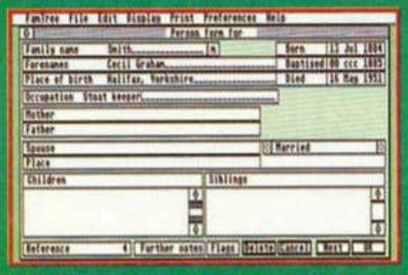
THIS MONTH SUBSCRIBERS GOT:

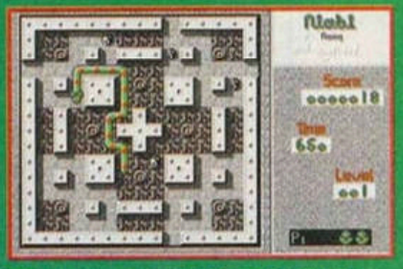
A WONDER DISK CRAMMED WITH 10 SMART PROGRAMS...

NoBI – RACING: **a *Snake* style game for one or two players. Runs on 1MByte STs, TTs and Falcons.**

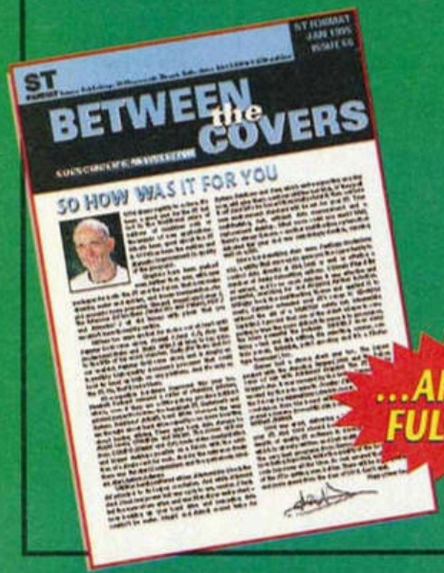


■ Stoat keepers aren't as common as they used to be, but *Family Tree 2* preserves their memory for eternity. *(What are you on about? – Trent)*

FAMILY TREE 2: **keep tabs on your family's dubious past with this useful and easy-to-use genealogy program.**
LPRINT: **printing will never be the same again with this nifty little utility.**
APPLIER: **frustrated by your ST's limited 'Install Application' function? Then you really need this!**
TXT-2-PRG: **make your text-files readable just by double-clicking on them.**
KEY EDIT: **alter your keyboard's layout for no other reason than that you can!**
GSS CLOCK SET: **set your ST's system clock on boot-up with this little gem.**
TAPE MAKER: **make inlay cards for your band's demos!**
DABBELFEATURE: **redirect your drive's accesses and control GEM windows.**
STTOPC: **DOS program for PCs to read ST disks.**



■ Lovely colours (on the TT and Falcon). But *NoBI - Racing* is addictive whatever its plumage.



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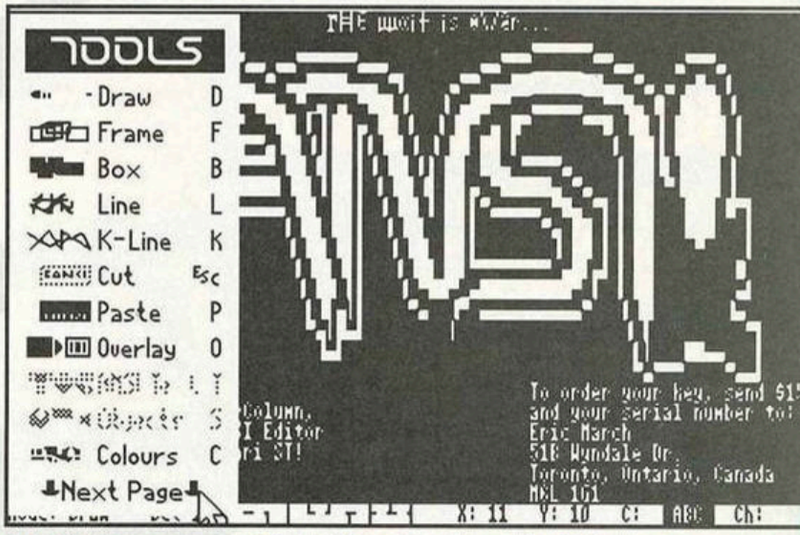
SHARE AND ENJOY

We all know about piracy and the damaging effect it has on commercial software. But surely shareware at least is safe from the cracking crews? Frank Charlton investigates a disturbing new trend...



■ *FANSI* is the only program of its type. What a shame it would be if Eric were to be dissuaded from producing future versions by the unscrupulous mob...

Piracy. There, that's it out in the open. While we've spoken about piracy before in *ST FORMAT*, we've concentrated on the visible side of the problem – commercial games and serious software. Piracy isn't just confined to the games world, or high-end, high-price delicacies like *Calamus SL* or *Cubase*, though...

Shareware isn't a new idea, it's been around for years. The idea is that an author bypasses the commercial software houses, and releases his latest magnum opus via cheap or free distribution channels – PD libraries, BBSs and the like. Because the author doesn't have to spend time and money packaging and distributing it, the program is usually much cheaper than its commercial counterpart, and often just as good quality – if not better. You buy the program for the cost of a disk, and if you like it you're morally obliged to send the author some money for it. If it's not suitable for you, just wipe the disk – after all, it didn't exactly cost you a fortune to start with, did it?

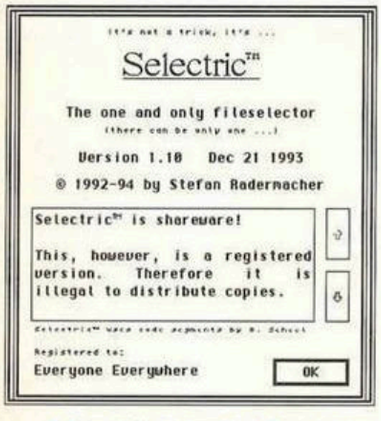
"Releasing a fully working copy of a program is a risky endeavour, because it relies on basic honesty..."

Releasing a fully working copy of a program is a risky endeavour, because it relies on basic honesty. The concept seems to have worked well in some markets, notably on the PC, and especially in America. Unfortunately, if no one bothers registering the software, the author has given up a large chunk of his time with nothing to show in return. One solution is to release the package in a slightly 'crippled' form, with certain key features either restricted or disabled entirely. It's still usable, but the added incentives of extra features, printed manuals and future support are often enough to bring the registrations in for the full version. Some programmers then send you a complete, personalised copy of the program, while others send you a key file, which unlocks the version you already have.

Sadly, shareware that needs a key to

```
Welcome to Connect KEY-creator made by Kents Crew
-------------------------------------------------

Enter Your registration name   : Register Me!

Your code made by Connect is   :
Your personal key will be      :

Enter the key in the registrationbox
of Connect, and you will be registred!
Observe that the key depens on actual TOS-version,
GEMDOS-version and installed blitter (!).

Press any key ...
```

■ Create an illegal registration key for *CoNnect* in five seconds with this program. How good do you think future support will be?



■ *Selectric* is an excellent file selector, and cheap too. Why rip off a copy, and then complain about the state of the ST nowadays? Hypocrite!

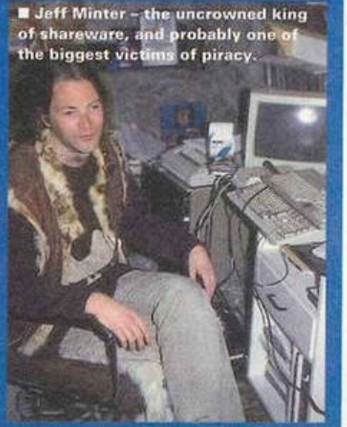
THE YAK CHATS BACK...

We managed to catch the venerable Jeff Minter between bouts of writing for the Jaguar and playing classic Williams arcade games, to ask his views. Jeff has released a few of his ST games as shareware – the frantic *Llamatron* was released as a full version, and the not-quite-so-frantic *Revenge of the Mutant Camels* only comes with the first ten levels 'til you pay up.

Jeff, what made you release ROTMC in a limited form?
"Registrations of *PC Llamatron* were poor, and we wanted to see if we could get people to register by indirect coercion."

So how good was the level of registration you finally got?
"On the ST, excellent. On the Amiga, nowhere near as good, and on the PC even worse. I wouldn't mind doing it for the ST market again but I'm not impressed with the response in the Amiga and PC areas."

Maybe we'll see a finished version of Hardcore after all. And Jeff's view of shareware pirates?
"May the fleas of a thousand camels infest their pubic hair forever, and may they never dream of goats."
Er, quite. Don't say we didn't warn you...



■ Jeff Minter – the uncrowned king of shareware, and probably one of the biggest victims of piracy.

PINBALL WIZARD

Remember *Starball*, the brilliant pinball game we gave you on *STF* Cover Disk 64? We thought it was the business, and better than most of the commercial games we've ever seen. With such an auspicious start under his belt, we tracked down the author, Dave Oldcorn of Volume 11 Software, for his opinions:

Starball isn't limited in any way – it's a full game. Have you ever released shareware with certain features taken out of the unregistered version?

"I did release two versions of my Falcon JPEG viewer, one with and one without SDP; the 030 version is public domain, and the DSP version is for-sale software. It's not exactly shareware, but the concept is probably similar enough."

Why did you feel that you had to do this?

"Otherwise I very much doubt I would have received any registrations at all. With the *Brainstorm* DSP viewer available, and with certain other image viewers about as much use as archive maintenance tools as a chocolate fire-guard, I still don't think people would really be that inclined to register."

So you didn't think people were honourable enough to register?

"It's not the honour that's the problem, it's people finding time to do it. Take as an example, *Llamatron*. I kept on saying 'I have to register this' every time I played the game, and then would forget about it. The same is true of *Starball* to some extent – £5 is not exactly a lot to ask."

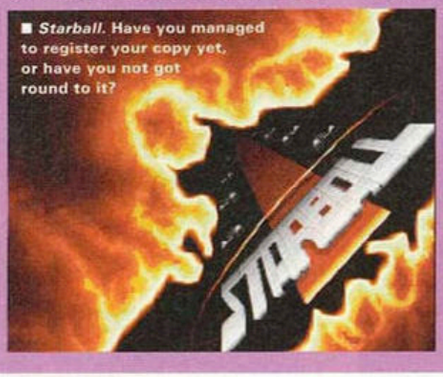
Many users like the key system, because it means that they can get their registered version quickly, by picking up the key from a BBS or electronic mail network. Unfortunately, it can also mean that the smart cracker can easily gain access to disabled features. Dave, would you use a key system, or just produce an entirely separate version for registered users?

"I'd give them an entirely new copy, because anyone who knows anything about the Atari, and because of its adult market that's a lot of people, could take out key systems in minutes."

Any last words or thoughts on the Atari shareware market?

"I've seen people write software to do trivial things that a programmer could knock up in hours, and then ask £20 for registration. Gross profiteering of that order is disgraceful. I put two and a half years' work into *Starball* and I'm still only asking £5, because that's a reasonable price for shareware if you aren't asking a return. There are very few people who charge fair shareware fees out there. I think if they did, they might get better registrations.

"Having said that, there is also a lot of good shareware that does justify its price, and it deserves support. I just bought myself a PC yesterday, and the person who runs V11's business side is loath to have us finish the other project we have planned for the Atari, because it isn't sound financial sense, and I've seen no evidence that he isn't absolutely right. Therefore you will almost certainly see *Starball* on the PC before our next Atari project, because we need the money, and *Starball* on the Atari isn't doing it. I have to make my living from this, and you would think a three-person company could get what it needs from the Atari, but it can't."



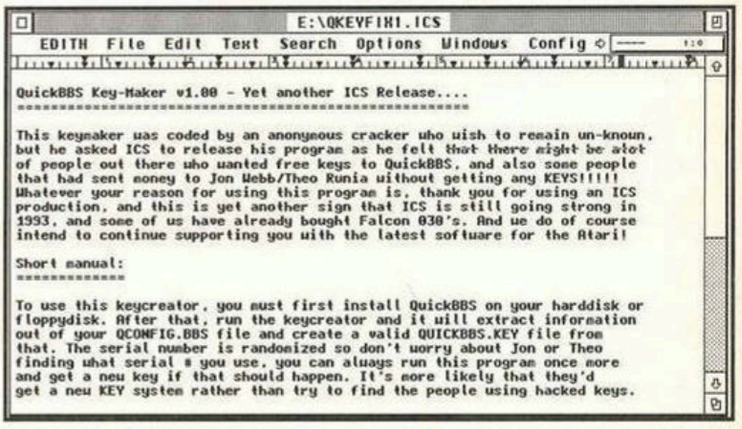
■ *Starball*. Have you managed to register your copy yet, or have you not got round to it?

operate properly is open to the abuse from the minority who think it's big and clever to crack a program and distribute it freely. With the decline of certain sectors of the commercial ST market, more authors are agreeing that shareware is the way ahead for the ST. We're seeing some astounding packages released as shareware with affordable registration. Excellent utilities like the *Edith* text editor, *Gem-View*, *Speed of Light* and even full commercial quality art programs like *Munch* are all suffering due to the activities of the unscrupulous few.

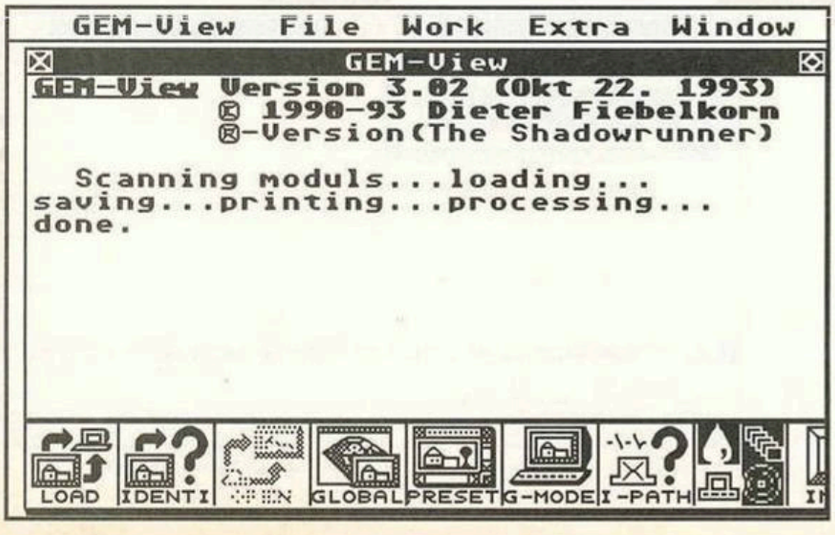
From the horse's mouth

We spoke to a number of shareware programmers about this problem. Some of them had been directly affected by piracy; all had strong views on the subject. Eric March is the author of *FANSI*, a 16-colour ANSI screen editor for BBS system operators. Eric told us, "I can say for certain that *FANSI* has been pirated – apparently by a group known as Elite. I couldn't even begin to guess at how they did it. Although I don't claim my protection scheme is the best, it's certainly devious enough to make it hard to crack, coupled with the fact that pertinent registration information is encrypted with my own routine. *FANSI* seems to have been pirated quite liberally in Germany – I got an e-mail from someone who admitted to having a pirated copy straight off, but said he was going to register, and just wanted some information about what's going to be added to future versions."

"Shareware is the way ahead for the ST. We're seeing some astounding packages released as shareware..."



■ This cracker thinks it's okay to rip off a program because he has some kind of a grudge against the authors. This is incredibly sad. Sorry.



■ "The Shadowrunner"? These guys are too embarrassed to give their own names – they know what they do is wrong.

I released my first version of *FANSI* with the Save option intact in the hope that this show of faith would encourage some users to register, and others to experience a slightly bigger pang of guilt. It was, of course, something of a mistake, even though I have had a number of registrations so far. In the five-and-some months that it has been available, thirteen people have registered. By and large, this is not an impressive number. As a result, future demo versions of *FANSI* will experience more crippling."

Speed of Light

We contacted Stuart Denman, author of the *Speed of Light* image viewer, to tell him that we'd seen a text-file telling users how to unlock the extra features in version 2 and above. Understandably, he was peeved... "These *****! This really annoys me. People wonder why the Atari market is diminishing when this kind of thing goes on? How do they expect us to continue

TIPS FOR REGISTERING...

If you're concerned about sending money off to register a program, there are a few simple rules you can follow.

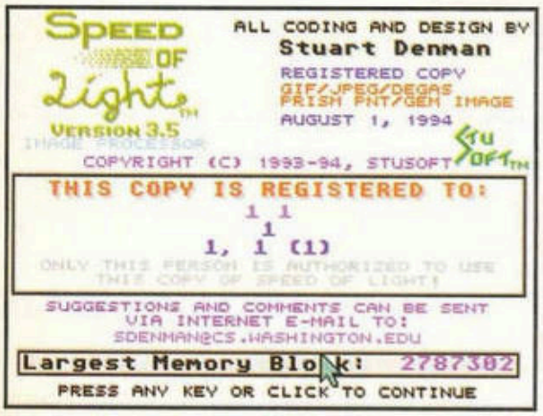
Check the copyright date on the program. Programmers are like the rest of us – they change computers, move house, or give up computing altogether. Some may still want you to pay because you're using the program, while others may tell you they aren't interested. If a program is really old, chances are it isn't supported. Which leads us straight on to...

Write to the programmer. A simple letter can confirm the status of a program, and whether the author is still at that address. If you get no reply after a couple of letters, then at least you've made the effort to find them.

Check with other users via user groups, bulletin boards and even the letters page of *ST FORMAT*, to see if anyone else has experience of the software you want to register. Others may be able to save you a lot of hassle.

Never – NEVER – send cash through the post. It might be tempting to bung those leftover Deutschmarks from holidays into an envelope, but it's a recipe for disaster. Ask at the Post Office about International Money Orders. It costs more this way, but it's safer. Find out if anyone else is about to register the same program – by combining your orders, you can save money on handling charges.

writing new stuff when they do this?" Since we contacted him, Stuart is intending to change his protection routines in future versions, to defeat the hack. How long until a new text-file is released, though? Thankfully, Stuart hasn't been dissuaded from writing new versions, but it could easily have happened – and could you really blame him for it?



■ **No sooner had *Speed of Light 3.5* been launched than someone distributed instructions on how to get yourself a 'free' registered version. What's the point?**

Lies, damned lies, and statistics

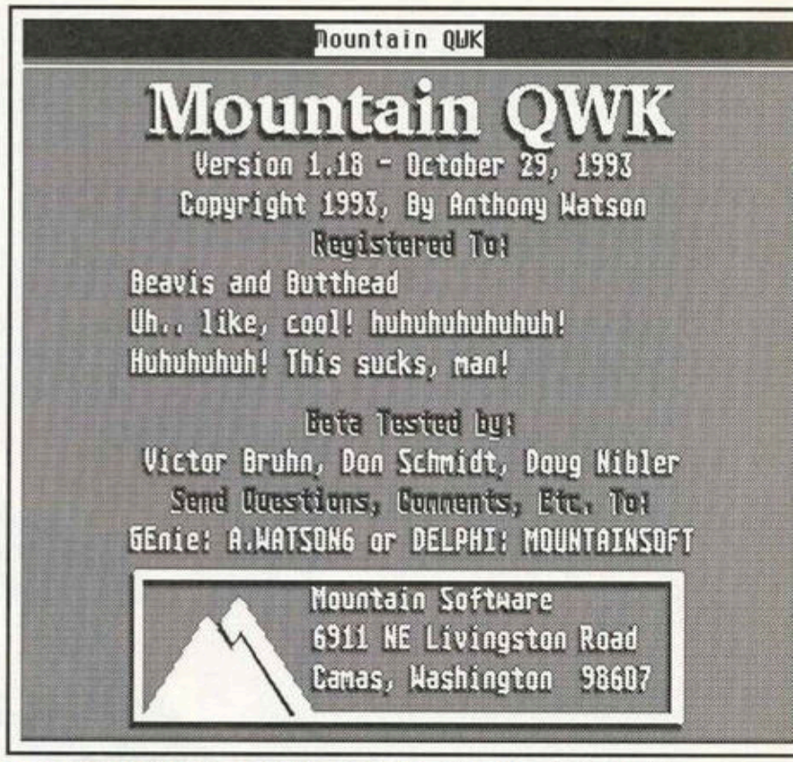
You read about the Internet last month – it's a huge, sprawling collection of computer systems connected together, it's unregulated and it's a great way to contact lots of people at once. We posted a questionnaire in the main Atari newsgroup, asking for feedback and opinions on the piracy issue.

The response was amazing. E-mails were literally flooding in within hours of the message being sent out. We asked everyone to answer a specific set of questions, and add any comments they might have. The general tone of the replies was upbeat, and almost all were concerned with the issues raised. The results of the Internet questionnaire make interesting reading. When asked if they had ever registered shareware, 89 per cent said yes. A good start...

Nearly 80 per cent had continued to use shareware without registering – reasons ranged from "I'm skint" to being worried about lack of support and sending money abroad.

37 per cent of people had come across illegal 'cracked' shareware through friends and contacts – 20 per cent had seen cracking programs that enable you to register a program without paying. Only 26 per cent said they would certainly use it, but a further 37 per cent said they would have a look at it, to help decide whether or not to register the real thing.

We asked whether the future for the ST lay in the commercial or shareware market – half said both had a part to play, and most others thought shareware was they way forward. A few decided our ST had no future at all, with one saying the ST's future lay "in a landfill"!

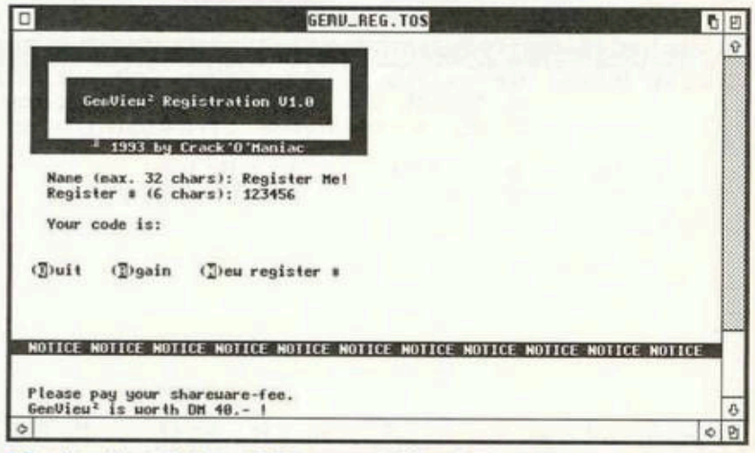


■ **This excellent BBS off-line mail reader suffered because of shareware piracy too. Beavis and Butthead? Sorry, but this kind of pathetic piracy sucks...**

Register!

So what is the future for our beloved machine? That's up to all of us to decide. Piracy does have a negative effect, whether it be commercial software or shareware. If you find a shareware gem that proves useful to you, do something about it – pay your registration! If you can't afford what the programmer is asking, write a letter and offer what you can afford. Many authors will be happy to see any financial reward for their work. By using cracked copies, or not bothering to register, you're running the risk that programmers may decide not to bother any longer, and then we're all stuck. Most shareware is written by people like you and me – I certainly don't know any who drive Porsches – and they need to eat and pay bills like the rest of us. If you want to be using your ST in the years to come, don't be tempted by that freebie copy from a mate, and stop to think about the guy who created it. ***stf***

"People wonder why the Atari market is diminishing? How do they expect us to continue writing new stuff?"



■ **See the notice at the bottom? This guy cracked it, and yet he still recommends paying your shareware registration dosh. Odd, eh?**

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GAMEBUSTERS

You now the routine by now. If you have any handy hints, top tips or even scurrilous scams, send them to: Gamebusters, ST FORMAT, 30 Monmouth St, Bath, Avon, BA1 2BW.

The complete guide to *Starball*, with a little help from Simon Forrester.

Two months ago, back in issue 64 to be precise, our Nick saw to it that every *ST FORMAT* reader got themselves a copy of *Starball*, the *FORMAT* Gold-winning pinball game. Two months on, the tips, guides and solutions to the game created a pile on our doormat so high that we just had to do something with them. We found a match and decided to cut down on heating bills.

Shortly before this, however, we extracted the best tips (and a few lucky people) from the pile, and built ourselves a *Starball* players' guide. The tips below are mainly the hard, selfless work of **Richard Ollerenshaw from Warwickshire** (somebody's got to be) and **Ross Burton from Essex** (enough said).

On the table

We start with a complete annotated pictorial guide to the *Starball* table. It looks similar to the review from issue 63, but there's more here. Much more. The table is split into three main sections.

The slime

The top section of the table is the easiest to get around. At the top left is a face, circled by purple figures. If you destroy every figure, the face in the centre of the section becomes covered in more and more slime. Shooting the birds in the top right corner reduces the slime.

- If you cover the head in slime completely (by destroying three sets of purplies), you're confronted by two aliens. If you shoot these, an arrow appears above the top-left face. If you enter the head, you're taken to the bonus level.
- The lights, guarded by the birds in the top right corner of the section need to be hit until they all display the same colour, to pick up one of the following bonuses:

Grey – energises ball
Blue – increase multi-bonus
Red – extra ball

The spaceship

The middle section has to be the most involved in the entire game. You tend to spend a lot of playing time here, trying to build the spaceship. The slow

TAKE IT EASY

Some people don't like speed. Some people like to take it slowly. Arsenal, for a start. Michael Walker writes: "When you're trying to do a tricky manoeuvre, hit the <Backslash> key. This increases the amount of frames your ST has to display and slows the whole game down." Cheers, Michael. And it's a good thing Nick, our resident footie nutter, isn't writing this.

BONII

The bonuses in *Starball* are liberal to say the least. The holes that give bonus marks also give multi-bonus marks, which are worth collecting, because they increase the amount your scores are multiplied by.

■ *Starball* – it's shareware, it's excellently written, nicely weighted, intensely good fun and it's got wonderful graphics. Sonics aren't bad, though.

way to achieve this is to shoot the ships circling the sections you're building, but it's slow, and you're busy people. There are a few things you can do to speed the process up.

- Try to get the ball into the hole on the left, first destroying the force field. This gives you the following bonuses in order (should that be bonii perhaps? Sounds a bit odd):

Add part to the ship
10,000 bonus points
No bonus
Destroy the guns
Superbumpers
Complete ship

- Alternatively, you could hit the side-guns roughly six times each to destroy them, which would stop them launching missiles at the rocket you're trying to build.

The fly

The bottom third of the table is the most perilous for the simple reason that if you fall through the traps here you're dead.

- Try to get the ball into the fly's mouth. It will either be spat back out, or you'll be taken back to the top section of the table or to one of the four subgames.
- Fire the ball into the chin of the figure to the right for a Jimmy Hill Chin bonus.
- Use the bumpers. If you hit them enough they explode which, although it sprays avoidables about, also creates kickbacks. These stop the ball falling down one of the channels on each side of the table.
- If you're trying to get the ball back up the screen to the middle section, you should let the ball run down the left flipper, only firing when the ball reaches the tip of the creature's ear.
- If you manage to get the ball up to the middle section but it flies across the screen and comes back down, you'll score a Skill Shot Spanner Bonus.

SICK NOTES

Some of you missed *Starball*, didn't you? Well, turn to back issues on page 85, and order your copy of issue 64 right now. Simple, huh? If any of you didn't buy that issue and you ring us up with either of the following excuses in an attempt to swing a freebie copy, you'll be laughed at by the whole team:

- I accidentally formatted my copy.
- It didn't work (sorry, but you need to send it to Disk Copy Labs – we don't keep copies).

If, however, you devise an original, empathetic or funny letter, you'll probably swing yourself a copy. It is PD after all, and we're easily amused.

THOSE SUBGAMES

Invaderball

The point of this subgame is to shoot the invaders with your ball before they reach the bottom of the screen. A few hints that might help you out in achieving this:

- Shoot the nearest rows first. After all, they're posing the most immediate threat.
- Shoot all of the invaders flying in the middle for an extra part to this subgame.
- Try to get your ball bouncing on top of the invaders as a last resort for points.

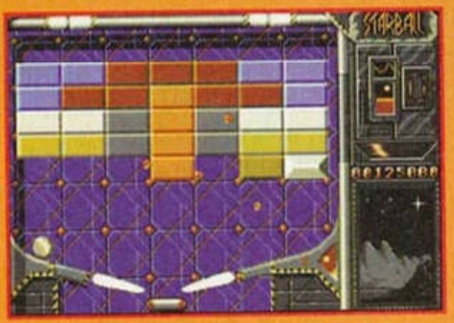
Eggball

The object of Eggball is to smash each quarter of the egg, releasing the insects inside. This may initially seem difficult, but:

- Keep the ball travelling slowly.

■ Eggball. Er, yes. What exactly were the influences for this one, then? And just who is this bloke?

- Always try to hit the two quarters nearest to you at an angle, so the ball doesn't fly straight back.
- Kill as many insects as you can before breaking the next quarter open.



■ Arkaball, the breakout level. Try to get the ball above the tiles for the easy way out.

Arkaball

The brilliant idea of integrating other game styles with a pinball table works just as well with Arkaball. Just make sure you remember:

- There's plenty of time, so take it easy.
- Try to break out rather than destroy every block. Once you get the ball bouncing around on top of the blocks you're set for life.
- Never hit the ball straight up – always try to hit it at an angle.

■ The barking-mad bonus level, activated via a laborious process. Jeff Minter would be proud.

Llamaball

You can get to this secret, barking-mad bonus level by following a few simple steps:

- At the start of the game, before firing the ball on to the table, try to send it into the black area just before the top of the chute, so that when the ball comes back down the words "Secret BS sequence enabled" are displayed.
- When you're at the top section of the table, fire the ball into the bonus hole, giving the message "Shoot head for llama."
- Let the ball fall to the bottom section of the table and aim it with the left-hand flipper into the mouth of the head on the right-hand side. A llama should now appear.
- Shoot the llama (it flashes white) several times, to find yourself on the Llamaball bonus screen.
- In classic Minter style, shoot everything.

ASSORTED HINTS

Ishar 2

Richard Ollerenshaw has been a busy man. As well as helping with our Starball solution, he's managed to come up with a few more gaming hints and tips, the first of which is for the Silmarils classic.

There are some opponents that you need hit only once, step back, recharge, then step forward and hit again, repeating the process – the ST is too slow on both attack and defend, which means that you'll never get hit. And don't forget, with every chance you get, administer first aid from everyone to everyone.

Outrun

That Ollerenshaw bloke's excelled again, with a handy tip for the US Gold driving classic, saving you all from humiliation from the pouting blonde in the passenger seat. Type 'STARION' on the title screen, and the following keypresses become active immediately:

B – Extra time with extended play
Q – Program information
S – Skip a level
T – Extra time

Rainbow Islands

And Richard reliably informs us that holding down the keys Q, W, E, R, T, and Y simultaneously gives you infinite lives. Good.

Another World

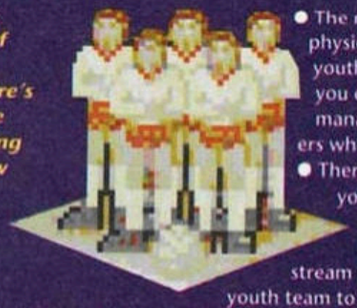
Delphine Software's chilling epic has been ripped clean in two by Mike Francis, who's handily supplied the full level codes for the game:

1	EDJI	7	FADK
2	HICI	8	KCIJ
3	FLLD	9	ICAH
4	LIBC	10	FIEI
5	CCAL	11	LALD
6	EDIL	12	LFEK

Watch out for next month's Gamebusters, in which Mike Francis takes over a whole spread with his complete *Another World* solution. Cheers then, Mike.

■ Bath City. We're talking about a team that once fell off the bottom of the coupon. And you get to manage them. And you paid good money for it. There's something seriously wrong with this game, surely?

Premier Manager 2



As M Winter, the author of some excellent Premier Manager 2 tips puts it, here's how to avoid a dose of the Mike Walkers. We're leaving Mike Walker alone for now though, as he did send in the rather excellent Starball cheat. Anyway, Premier Manager 2:

● Choose a good club at the beginning of the game, such as Bath, Halifax or Welling. The home friendlies and foreign matches attract much bigger crowds.

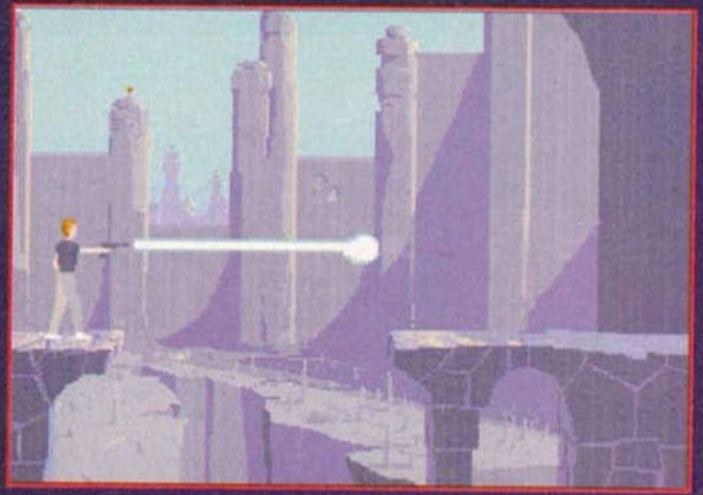
● Buy out every contract player you can. After all, even if they turn out to be rubbish players, they can always be sold off at a profit. Buy three average players instead of one genius – he's bound to get injured or retire. Always have at least two goalies.

● The most important staff are the physiotherapists, the scout, and the youth team manager – get the best you can afford. A good youth team manager provides cheap squad players who can be used or sold.

● There are three real ways to keep your directors happy: build covering for all stands to give extra advertising; sell a steady stream of players supplied by your youth team to get a good run in the cup; publicise every match – a fourth-round tie at home against a premiership opposition still brings in a lot of cash from directors.

● Forget the beautiful game – long balls and 11-man defenses are vital for reaching the league. Only later when you can afford better players should passing be a consideration.

● Once promoted, ditch your old team ASAP – it won't cope. Go to an established club like Colchester. Never sign up for longer than two years.



■ Now that's a damned good game. *Another World* not only gives you adventure, action, and a good creepy atmosphere – you get an enormous gun too.

BLUNDERING ON...

Don't worry, Blunder is dead. But his spirit lives on – Paul Dwerryhouse from Kent needs help with one of the oldest (but one of the best) flighty games, Damocles. So...

Go through the normal procedure at the beginning and fly to 12:14 and get the computer. Go to 15:03 and buy the pressure suit. Move over to Snow Island and go to 03:00 and pick up the cupboard This is a Nova-trigger in disguise. Fly to Bare Island 06:02 and enter the transporter on the ground floor. Keep going in until you get to Ur City on Gaea at reference 07:01. Pick up the sideboard. It is a Nova-trigger in disguise. Come back the way you came and fly off to Metis. At 05:06 is a building with a phone and a table. Walk to the table and the wall should open. This is a door in disguise. Go in and there is a washbasin. Take it. This is a Nova-trigger in disguise. Next fly to the Chaldea Metropolis on Gaea and land at 06:06. Nick the gold from the basement and fly to 05:06. Sell the gold and fly to 05:06 and buy the Hi-Fi system. You've guessed it. This is a Nova-trigger etc. Fly to 09:02 on Ur and pick up the Novabomb in the basement. Fly to Damocles, drop the Novabomb on it and get out of its way. Fast. Turn on all the Nova-triggers in disguise and Damocles is destroyed. You now get loads of money to spend as you please.

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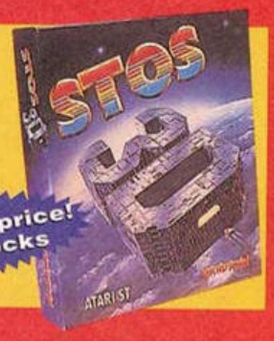

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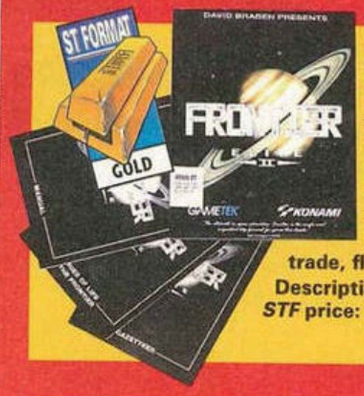

FRONTIER: ELITE 2

GAMETEK

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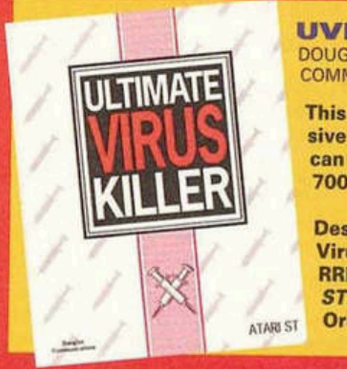

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DOUGLAS COMMUNICATIONS

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This comprehensive virus killer can repair over 700 commercial titles...

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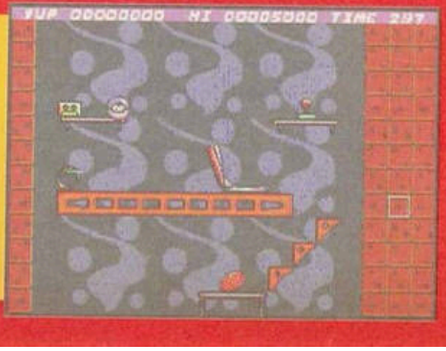

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What a long strange year it's been

1994 was an important year for the ST and Atari: exciting, confusing and even depressing (when the World Cup ended). Trenton Webb tries to make some crazy kind of sense of it all.

This was a pivotal year for Atari. The company started the year rapidly restructuring to finally offset the losses incurred in previous years. Their hopes were pinned on their new 64-bit super console, the Jaguar. It was launched, the press (except *Edge)* loved it and then... nothing happened. Games were promised and previewed, but few cartridges flew on to the shelves. Yet people's faith in Atari led them to buy the machine anyway and wait for *Tempest 2000* and *Alien vs Predator* to hit the shops – as much as six months after the hardware had been flogged. A stuttering start, but a start nonetheless. Now the Jag is ready to do battle with the likes of Nintendo, Sony and Sega.

Sega? After years of courtroom bickering Sega and Atari settled this October. The result: a huge wad of cash for Atari ($40 million), an 8 per cent stake in Atari for the Japanese console giant and the rights to 70 patents going to Sega at the cost of some $7 million a year for the next seven years! Hurrah.

Game year

It was a quiet year for games in terms of volume, but a very loud one in terms of quality. 1994 saw the launch of three of the greatest ST games ever: *Frontier: Elite 2, Cannon Fodder* and *Starball.*

In February *Elite 2* stunned us all. It establishes a huge gaming environment in which you can troddle about a highly accurate universe, killing or being killed in a dog-eat-dog, space opera kind of way. At times it pitches into dull workaday ferrying of ore about planets, while at others it's a full-on, in-yer-face space battle for survival. Brilliant.

If it was April it had to be *Cannon Fodder.* Sensible's vicious arcade war game takes the awards for sheer nasty gameplay but doesn't win any friends for its unsubtle approach to the subject. The little cartoon soldiers are killed, bleed a lot, and if you shoot their still-twitching bodies you can usher them around the map. Not pleasant, but spookily realistic. As well as the gratuitous gore, each of the assault missions elegantly blends high-speed mouse reactions with tactics – a heady mix.

Starball surprised everyone in October. It's PD/shareware and yet still blindingly good. Just load up your *Starball* disk *(ST FORMAT* 64a) or look at this month's Gamebusters (page 78) for

ELITE 2

ST FORMAT 54

DOUBLE DISK ISSUE

COVER DISK:
KCS Omega Keyboard controlled sequencer
Hyperpaint 2 GDOS-friendly paint program
GDOS high-res fonts and drivers For use with Hyperpaint 2
GDOS medium res fonts and drivers For use with Hyperpaint 2
Nova Hard-core shoot-'em-up
Spherical The platform adventure demo
Hickory Dickory Dock Desktop clock accessory
Bubblebook Mouse pointer finder
LED Panel Drive read and write displayer
Atari Glossary ASCII format ST dictionary

REVIEWS:
Protext 6 (92%), **Blow Up Hard 2** (88%), **Screenblaster** (85%), **MIDISpy** (93%), **VIDI-ST 12** (80%), **KCS Omega** (80%), **Colourburst Hand Scanner** (79%), **Atari Compendium** (91%), **Modern Atari System Software** (90%), **Tabby** (86%), **Magic Boy** (84%), **Speedball 2** (94%), **Xenon 2** (90%), **Parasol Stars** (93%), **F-29 Retaliator** (76%), **Powermonger** (89%), **Pushover** (72%)

FEATURES:
Game of 1994 previews: Elite 2, Cannon Fodder and Zeewolf, shopping guide, look to the future, Arabesque mastered, Raystarting, Scrabble, bulletin boards, making muzak and doubling your disk space

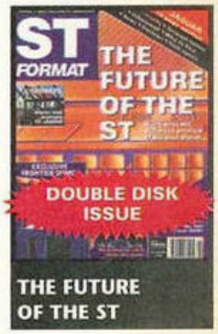
1994 **january**

ST FORMAT 55

COVER DISK:
Frontier: Elite 2 Demo of THAT game
Before Dawn Animated screen-saver
Stomp Block sliding puzzler
Audio Calculator MIDI tool demo
Backwards ST emulator for the Falcon030
24-pin GDOS fonts Printer fonts for Hyperpaint 2
2.5MByte STE Patch for 2.5MByte STEs
Dungeon Master and Chaos Strikes Back level editor Save game editor
KCS Omega samples

REVIEWS:
Inshape (85%), **Prism Paint 2** (65%), **Geneva** (93%), **MiniS** (93%), **Progate 2 85DC** (91%), **S128MO** (85%), **S44SY** (85%), **Progate 2 R44** (83%), **Easy Text Professional Vector** (91%), **Rave** (71%), **HP Laserjet 4L** (90%), **HiSoft Basic 2.10** (82%), **Frontier: Elite 2** (91%), **F1 World Championship** (82%), **Bart Vs The World** (21%), **Robocod** (74%), **Stone Cold Sober** (62%), **Space Crusade** (68%)

FEATURES:
Long live the ST Exactly why the ST's going to thrive in the future
All you need In-depth look at AtariWorks
Silicon City How your ST actually works
Getting into the music matrix Help with KCS Omega



THE FUTURE OF THE ST

1994 **february**

A-Z OF ST TIPS

ST FORMAT 56

COVER DISK
F1 Demo of Domark's Formula One racer
Never Ending Colouring Book Kids paint package
Audio Bass Tape/CD/DAT filing system
Desk Effects Desktop customiser
Searcher Deluxe Disk search utility
Boot 60Hz ST Boot modifier
Mega 60Hz Mega STE 60Hz and 8MHz modifier
Tandem Disk drive controller

REVIEWS:
Raystart (79%), **Falcon Speed 286** (64%), **Pixart** (79%), **Raiden Jaguar** (70%), **Crescent Galaxy Jaguar** (44%), **Goal!** (48%), **Lethal Weapon** (65%), **King's Quest 1** (37%), **Infinity 1** (42%), **Robocop 3** (84%), **WWF European Rampage** (28%), **Acheton** (81%), **The Last Days of Doom** (73%), **Evolution Dino Dudes** (83%).

FEATURES:
A-Z of tips Over 100 of the top ST hints and tips
Altered Images Top image processing tricks
Coming down the home straight KCS Omega masterclass
Cubase Audio: State Or Art? The top music program examined
Understanding your Falcon How your Super ST works
Inside Story Trouble-shooting your ST's problems

1994 **march**

ST FORMAT 57

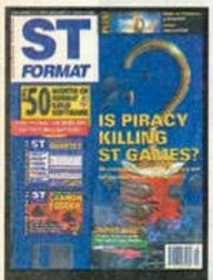
COVER DISK:
Holocaust Vertically scrolling shoot-'em-up
Protect 6 Memory-resident virus detector
UVK 6.0 Demo of Ultimate Virus Killer v6
Thought! Demo of the ideas processor
Tri-Heli 2 Arcade dodge-'n'-shoot-'em-up
Goal! Editor Mess around with Virgin's Goal!

REVIEWS:
Ultimate Virus Killer v6 (92%), **Breakthru 2** (89%), **Chagall** (94%), **Harlekin 3.1** (94%), **Textstyle** (80%), **CalAssistant** (83%), **Beatcalac** (81%), **Evolution Dino Dudes Jaguar** (78%), **Cannon Fodder** (93%), **Another World** (93%), **Police Quest** (79%), **Wizkid** (91%), **Steel Talons Falcon** (72%)

FEATURES:
Let's get digital Direct-to-disk recording guide
Dream Machine Get the ST you've always wanted
Under Attack Protect your disks from viruses
Removable mice Move your mouse ports
Unlimited expansion Get up to 8MBytes of RAM
Byte sized How ST RAM works

LET'S GET DIGITAL

1994 **april**



IS PIRACY KILLING ST GAMES?

ST FORMAT 58

COVER DISK:
Quartet The polyphonic sample player
Cannon Fodder Demo of the classic kill-'em-up

DOUBLE-DISK ISSUE

REVIEWS:
DA's Picture (91%), **Gemini Atari CD-ROM** (72%), **Fontkit Plus 4.1** (85%), **Out-Burst** (80%), **Photo Show Professional** (88%), **DeskJet 310 Colour Inkjet** (86%), **PageAssistant v2** (85%), **SJ-144** (73%), **Lotus Trilogy** (91%), **Risky Woods** (77%), **Muzzy** (75%), **Lure Of The Temptress** (90%), **Sleepwalker** (84%)

FEATURES:
Are you killing ST games? Piracy – the horrid truth.
Fun with GDOS How to get to grips with the basic font system
MegaByte Blues Get the right upgrade for 1MByte games
DIY monitor switcher Change your monitor at the flick of a switch
Classic games The best games ever on the ST
As you like it What you think of ST FORMAT
Monitor Madness Make sure you get the right monitor for your Falcon

1994 **may**

ST FORMAT 59

COVER DISK:
VideoMaster Video editing suite
Mouse-Ka-Mania 2 Mouse pointer replacements
Morph Video effects package
QPlay 3 Quartet player
Cover Disk Cheats Cheats for Cover Disk games
SuperCard 3 Upgrade SuperCard 3 upgrade!
Pothole 2 Boulderdash clone

REVIEWS:
Hama Trilock Genlock (85%), **SMS2** (85%), **Persistence Of Vision 2** (90%), **Straight Fax! 2** (83%), **Quill** (84%), **HP DeskJet 520 Printer** (91%), **Extendos** (90%), **Easy Stitch** (88%), **Tempest 2000** Jaguar (97%), **Rock 'n' Roll Clams** (72%), **Battle of Britain** (66%), **Muzzy Falcon** (80%), **Jimmy White's Whirlwind Snooker** (73%)

FEATURES:
Mastering The Video Get to grips with VideoMaster
Video GaGa A preview of the cheapest digitiser ever
The omnipotent ST What the SMS2 operating system can achieve
Publish and be damned All you ever wanted to know about DTP
Digital manipulation Quartet masterclass
DSP decoded What a DSP is and just why it's so fab
The Ancient Art Of File Management Practical file managing tips

FEELING CREATIVE PUNK?

1994 **june**

THE NEW WAVE OF ST GAMES

ST FORMAT 60

COVER DISK:
MusicMon2 Demo of fab new tracker
Snacman Pacman-style maze game
Sam 2 Disk Direct-to-disk recorder
DeskPic Windows-esque Desktop utility
AutoRAM Superior RAMdisk aplication
Diskfree Disk space controller
Bass instrument samples Er, bass instrument samples

REVIEWS:
DA's Vector Pro (90%), **Thought!** (86%), **Clarity 16 Falcon** (68%), **HP DeskJet 560C** (91%), **MagiC** (94%), **Tactical Manager** (54%), **Leisure Suit Larry** (64%), **Cadaver** (87%)

FEATURES:
Exposé exposed Preview of Titan's new graphics system
Ride the new wave The new generation of independent ST games
Which word processor? The best word processor available from £3 to £150
Is your machine safe? DIY keyswitch security for your ST
Atari's other face The story of Atari arcades
Now we are five The ST FORMAT story
Mouse Mania Customising your pointer with Mouse-Ka-Mania
The Art of File Management More data keeping tips

1994 **july**

ST FORMAT 61

COVER DISK:
Well 'Ard Platform leaping fun
Digit Demo of the Galactic tracker
WordQuiz 4 Wordsearch Utility (Not STFM)
AtariView 3 Text-file viewer/reader
Boss Drum Quartet drum samples
Twinz Tile matching challenge

REVIEWS:
Music Mon 2 (79%), **Silhouette v1.4** (85%), **Diamond Back 3** (95%), **HPChrome 2.5** (88%), **Multimedia speakers** (72%), **Gasteiner SCSI Drive** (91%), **Top Link Host Adaptor** (74%), **Kobold** (90%), **Atari PD/Shareware CD-ROM Vol 1 & 2** (81%). **Space and Astronomy CD-ROM** (76%), **Project Guttenberg CD-ROM** (64%), **Final Conflict** (35%), **Jimmy Connors Tennis** (60%), **Merchant Colony** (40%), **First Samurai** (85%), **International Sensible Soccer** (91%)

FEATURES:
Industrial revolution Serious software on its way for 1995
Art for art's sake The best art packages around
STF's DIY SS WC '94 – How to run a Sensible Soccer World Cup tourney '94
Now We Are Five The ST FORMAT story part 2
TOS 2 Upgrade How and why
Music Mon 2 Tutorial
T2: Upgrade 2

JOIN THE REVOLUTION

1994 **august**

proof. Written to, if not above, the level of commercial releases it looks slick, sounds great and plays brilliantly.

Word wars

Word processors have a cosy image of vicars typing out their parish newsletters or wannabe Jeffery Archers writing the great British novel. Not so. This year saw a brutal slugging match, with the three biggest players in the field going at each other like Royals in a tabloid.

Protext 6 stole a march on its opposition by being released way back in January. It was ready to be updated in October, when things got nasty. *Protext 6.5* met *That's Write 3* and *Papyrus Gold* in a head-on clash.

Protext is for the traditionalists; it's powerful but lacks elegance. *That's Write 3* and *Papyrus* change all that. These two processors could happily sit on any machine, in any office, anywhere. They look professional and powerful. *Papyrus* steals the march slightly, being even more friendly and intuitive than many a Mac or PC word processor, despite costing a fraction of the likes of *Microsoft Word* or *WordPerfect*. These programs are indicative of the kind of software you can expect to see on the ST in the future. As programmers get to know the machine better and user needs become better defined, the software gets more coherent and user-friendly. With drop-down menus and non-modal dialog boxes you can configure these programs to do exactly what you want, the way you want.

Public utilities

The ST was taken another step further, this year with System Solutions' triumvirate of *Kobold*, MagiC and *Ease*. Together they redefine the way your ST works. *Kobold* deals with the file management side of life: it's fast, functional and highly usable. Running with the MagiC multitasking system it becomes even more potent. MagiC is the best multitasker on the block, more flexible and faster than Atari's own MultiTOS. When *Ease* trots out the set will be complete, and the Desktop will be replaced. Will the ST ever be the same again? No, it'll be better.

The other stars of the year were *Harlekin 3.1 and Diamond Back 3*, and hard drives increased in power and value. *Harlekin*, released in April, does everything: file selector, text editor, file spooler, RAMdisk, disk formatter, the works. For a mere £60. *Diamond Back 3*, from HiSoft, takes the ideas behind *DB2's* strong, sturdy back-up utilities and applies 1994 standards to them: programs must look good and be friendly to the technically inept. It's rugged and just won't fall over, while doing its job fast and easily.

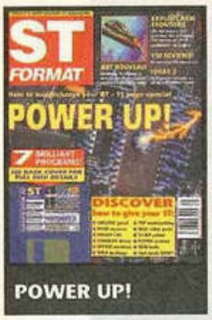
The value for money offered by hard drives increased through the year. The Progate offers 85MBytes for £299, coming with good formatters and running really rather fast. System Solutions' MiniS drives offer a mighty 105MByte option for £299, and a further 135MBytes for another £100. Gasteiner hit back in August with 170MBytes of SCSI drive for £299. Prices continue to fall, while storage space increases.

Essential reading

1994 saw an increase in terms of intensity in the ST magazine scene. The long-running *ST User* finally bit the bullet, leaving two titles on the newsstands. Well, actually, it merged with a rival, but 'bit the bullet' sounds so much more dramatic. *ST FORMAT* is still the biggest selling (and we'd say best) and remains committed to the ST.

ST FORMAT itself underwent change too. Paula departed for *PC Answers*, Clive was sucked into the *.net* and Jon Nash went upstairs to join the wacky bunch of funsters that form *Amiga Power*. Joining the team was Nick Peers, a bitter but decent disk editor; Simon Forrester, a hairy all-rougd code-head and Jill Werb, World Elk wrestling champ and deadly production editor. Oh and there's me. I make a mean cup of coffee, as long as you take it white. With two sugars.

We'll continue the *ST FORMAT* mission: to inform and entertain ST owners. We'll bring you the latest news, best previews and reviews throughout 1995. We'll track down important pieces of code and have the full program or at least a demo on the Cover Disk. We'll run features on new and different ways to use your ST, and how to make the most of those tricky but truly wonderful applications. We'll be here. Join us.



POWER UP!

ST FORMAT 62

COVER DISK:
Medieval Chess Chess/arcade mix
Fastcopy 3 Brill PD disk formatter
Albion File manager
Synth Sounds 10 Korg synth samples
The Ultimate Converter It's a file converter, ultimately
Easy For You To Say Digit song
Make 1MByte RAM cheat (2 & 4 MByte STs)

REVIEWS:
Rainbow (81%), **Imagecopy Colour 3** (92%), **EZ-Art Professional** (83%), **Xenomorf 2** (94%), **Mastering AtariWorks** (78%), **MIDIgrid** (79%), **FastCopy v1.2** (90%), **Nova graphics card** (86%), **HP LaserJet 4M Plus** (85%), **Ishar 3** (84%), **Rorke's Drift** (45%)

REVIEWS:
Custom Computing How to supercharge your ST
3DIY The theory and practice behind 3D polygon games
A Classified Bargain Make the most of small ads
DIY Videoport Add a video (and stereo) port to your ST
TOS 2: The Return More TOS 2 tricks
MIDI Masteclass Make the most of the Digit Cover Disk

1994 **september**

ST FORMAT 63

COVER DISK:
Quill Vector caligraphy utility.
HERO Exclusive demo of the platform adventure
Herman The truly blistering Boulderdash clone
Dynamic Address Database An address database
QPlay 3 A Quartet player
Tetris Accessory version
Auto RezSwitch Low/Med res switcher
STE Med res booter Solves STE TOS 1.06 probs

REVIEWS:
That's Write 3 (91%), **TrueImage** (79%), **Family Roots 2** (83%), **Protext 6.5** (85%), **SpeedoGDOS 5.0** (73%), **Clarity Falcon 2** (83%), **Edith** (87%), **Storm Tracker** (88%), **StereoCAD** (75%), **Papyrus Gold** (91%), **Gemulator** (76%), **Premier Manager 2** (91%), **Spherical** (56%), **Starball** (96%)

FEATURES:
Start Making Sense Guide to (almost) all of the ST programming languages
Pure Gold Every FORMAT gold winner EVER!
Papyrus Gold Masterclass In-depth tips on the new document processor
(Nearly) All My Own work Games construction kits and how to use them

SIMPLY THE BEST!

1994 **october**

REVEALED!

ST FORMAT 64

DOUBLE-DISK ISSUE

COVER DISK:
Personal Pascal 2.05 Full programming language
DA's Vector Pro Demo of the vector graphics package
Starball PD pinball
Grafiek Graph and chart creator.
Quartet Tunes Tunes for Quartet!
Stickler 'Diary'
DosAcc v1.5 Memory and disk space monitor
Error STOS 'help' accessory.
Pulldown Drop-down menu fing

REVIEWS:
NeoDesk 4 (90%), **Ladbroke Fax-modem** (85%), **Football Masters:** **Play By Mail** (70%), **Munch** (93%), **HERO** (85%), **Robinson's Requiem** (89%), **Wolfenstein Jaguar** (90%)

FEATURES:
Just how do they do it? Inside the world of PD demo coders
The Future Of The ST The new hardware that will shape the ST's future
Bibliotech Every ST PD library listed and listened to
Get the most from Quartet Quartet masterclass
Get the most from Personal Pascal Personal Pascal... er...
Get the most from DA's Vector Pro ...well, what do you think?
Interview with Andrew Gisby The Zero-5 coder speaks out

1994 **november**

ST FORMAT 65

COVER DISK
Grafix Art tutorial program
Jetpac Arcade-style game
Dr Fox's Football Annual Soccer results predictor
Arcade classics Tetris, Dropzone and Breakout clones
Slingshot Desktop utility
Font Edit 2.5 Desktop font editor
TinyPrint Text printing utility
Timezones Time difference calculator

REVIEWS:
CoNnect 2.46 (85%), **Flash 2** (83%), **SpeedCom FaxModem** (85%), **Mortimer** (71%), **Screenblaster 2** (90%), **ScreenEye** (90%), **Twist 2** (83%), **DegasArt 3** (20%), **Rugby League Coach** (75%), **Robinson's Requiem** (90%)

FEATURES:
Internet! How to merge on to the information superhighway
Word War III Papyus Gold vs That's Write 3 vs Protext 6.5
Team talking The programmers of Team explain exactly what they do and why
Penatrating Pascal Starting a novice's easy-to-use guide to Personal Pascal
GFA Basic Learn to code in GFA Basic

INTERNET!

1994 **december**

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MATHS DRAGONS. Ages 5 – 12+
Designed to give practice in the four rules of number. Sum type and degree of difficulty can be selected. Set in the caverns of the Maths Dragons, you must rescue the scattered pieces of your train set from the attentions of the baby dragons.

REASONING WITH THE TROLLS. Ages 5 – 12
You play the part of the Smallest Billy Goat Gruff, who wants to get to the other side of the river where the grass is greener. In order to get there you must cross a number of bridges, each with a resident troll. Safe passage will depend on your answers to a set of graded, reasoning questions.

TIDY THE HOUSE. Ages 5 – 9
A first adventure game, set in the familiar territory of an untidy house, where the player must get their younger brother and sister ready to go out and do a bit of tidying up at the same time. The game helps develop reading and keyboard skills, plus logical thought and planning.

TIME FLIES. Ages 5 – 13
Father Time has gone out for the day, leaving you to dog sit the Watch Dog. He's easy to look after, just give him his food and water and take him for a walk and he'll be happy. It's a pity the Time Flies have got loose but if you are good at solving time problems, they shouldn't be too much trouble. You set the type of problem and level of difficulty.

CAVE MAZE. Ages 8 – 13
A first adventure for a slightly older age range. You have befriended a lost, hungry and slightly awkward, baby dragon. All you have to do now is find his lunchbox, feed him and then guide him home past the obstacles in a maze of caverns. The game helps develop reading and keyboard skills plus logical thought and planning.

PICTURE FRACTIONS. Ages 7 – 10
This game is designed for those who have just started fraction work and who are not yet ready to deal with them in purely numerical form. Questions are presented in the form of pictures from which the player must work out a fraction and then answer in either word or number form.

FRACTION GOBLINS Ages 8 – 13+
A game which gives practice in fractions. Any or all of the rules of number can be selected, as can the difficulty level and type of fraction. The simplest level will allow the most hesitant novice to succeed while the hardest will probably require pencil and paper no matter how good you are.

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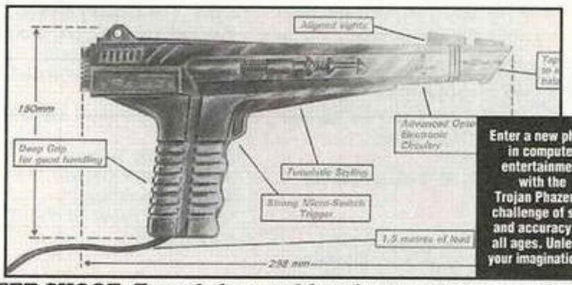

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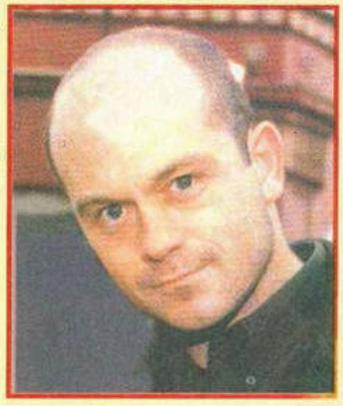
ST FORMAT JAN 1995

FEEDBACK



Having gorged itself on your opinions and comments, all that stands between this behemoth of a page and the sleepy village of *ST FORMAT* is Trenton 'Grant' Webb.

Personal Problems

Dear *STF*

I have found a problem when decompressing *Personal Pascal*. When it does decompress there isn't enough room on the disk for it and the PASLIB file gets chopped, leaving a Read error when linking in *Pascal*. To correct the problem, follow these instructions:

1) Get your blank disk
2) Copy DOSACC to the Cover Disk using the Menu
3) Re-boot so DOSACC installs
4) Activate DOSACC and format the disk as extended format
5) After formatting put in the *Personal Pascal* disk.

Now decompress *Personal Pascal*. You won't have this problem if you have a high-density drive, or decompress on to a large RAMdisk or hard drive.

Adam Robinson, Leicester

stf: *Cheers for that advice Adam. For an alternative method of decompressing your Personal Pascal (ST FORMAT Cover Disk 64b) see this month's Disk pages which start on page 6.*

■ **Having trouble decompacting *Personal Pascal*? Fret no more!**

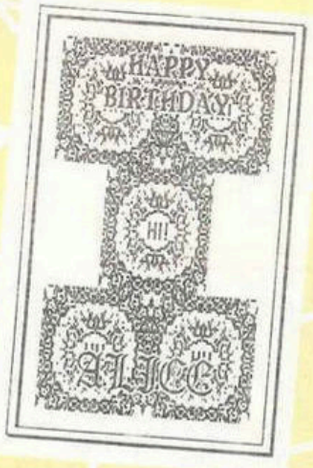
A right card

Dear Trenton

Could you inspire a programmer to produce a program similar to *Printmaster Plus* (from Unision World) but with colour graphics and borders. This would mean that Atari users could make things like greetings cards that utilised A4 paper, not slightly larger (as per sample from *Printmaster Plus* enclosed).

F Edmonson, Burnely

stf: *Well I can't, but your plea may be answerable by other readers. Come on folks, anyone out there got a solution to Mr Edmonson's troubles?*



■ ***Award Maker Plus* (see PD Sector) supports colour printing, but only of certificates, not greetings cards. Sorry!**

STACks of games

Dear *ST FORMAT*

Some time ago I had *STAC (The ST Adventure Creator)* but it broke and I couldn't load it at all. Then in issue 63 I noticed that you talk about *STAC* and other game creators. Is it still possible to get hold of it? I have been looking for *STAC* ever since it broke but I can't get hold of it. Could you help?

Michael Tedstone, Glasgow

stf: *There are no supplies that we can find directly, but keep your eyes on the Reader Ads section on page 70 or even send in your own appeal. It won't cost you a penny and it might find you a copy.*

Clarissa Explains It All

Dear STF

I have been a subscriber to and purchaser of *ST FORMAT* since the first issue of *ST Amiga FORMAT* many years ago. It was good to see on the November issue that there was a useful utility (programming language) included that would run on a 512K machine, as I have an unexpanded 520STFM. Keep up the good work and continue to support lesser machines.

Now for a 'gem' of information! There was a picture at the

MUNCHIES

To Trenton 'Grant' Webb

Hi, first let me thank you for your review of my program *Munch*. It's nice to know that I have not spent the last year and a half on something totally useless! There are two things I would like to point out though.

Edward Munch was a *Norwegian* painter. We haven't got that many, so we at least need credit for him (he's the one with the *Scream* painting, so at least you got the miserable part right).

Also, you never stated in your review that *Munch* can work with pictures up to 2,500x3,500 pixels in size! As this is a feature not found among many of its competitors I feel it is an important to point this out. This means an A4 page in 300 dpi resolution can be worked on.

Since *Munch* was sent to you I have written another program for registered users only, called *Madonna* (after another painting by Munch) – a GDOS-based printing program. GDOS, NVDI and SpeedoGDOS can all be used.

Currently I'm working on *Munch 2*, a total rewrite of the entire program. It will be Multi-TOS compatible, GEM-based, run in all resolutions greater than 640x400, in colour (although it will still be a mono program) and do weird things to SpeedoGDOS fonts. It will also have many more tools. I hope it will be finished this winter, and all registered users will be entitled to a free update.

Greetings from Norway

Vegard Hosføy, Trondheim

stf: *First things first. You don't get EastEnders out in Norway do you? Next – okay, you got us banged to rights, Munch was in fact Norwegian. Sadly all our GCSE Art History lessons failed us and all we knew was that he was from 'somewhere up north'. More importantly we couldn't name another painting he'd done, which means that you answered two of our questions in one letter. Hurrah.*

Good shareware programs like Munch underline the benefits of registering programs. What a brilliant offer: a Munch upgrade and access to Madonna. Now that's worth £22 of anyone's money (Visa, Mastercard and Eurocard are also accepted). Get yourself an International Money Order and send it to: Vergard Hofsøy, c/o SA Jensen, 3630 Rødberg, Norway, or see the REGISTER.DOC file on the Munch Wonder Disk. The program can be also obtained from Ad.Lib BBS on ☎ 0191 370 2496.

■ **Our production editor on deadline day. Er, sorry. A famous painting by a Norwegian painter called *Munch*.**

Sadly Trent's only claim to fame is that he once invited the now Miss World (Miss Trinidad and Tobago) to a party. She never came. Odd that.

bottom of page 42 of the November issue of two people you didn't recognise. The girl on the left is an 18-year-old American actress Melissa Joan Hart, who's on Sky in a programme called *Clarissa Explains It All*. I assume the bloke in the picture with her is one of her fans. I thought you might like to know that!
Roger Shrimpton, Aylesbury

stf: *We aim to please with our Cover Disks, and always try to ensure that as many ST users as possible can use the programs we put on it. As for the info on obscure but no doubt quality TV, that's always appreciated.*

ST FORMAT is read by thousands of people every month, and some of you must have great trash TV claims to fame (a limp-on part in Casualty or perhaps 23rd roundhead from the left in the Weetabix ad). If you have, go ahead – share your 15 seconds of fame with the ST world. Why? Because you can!

Dyn and blast it!

Where can you get two STE joystick adaptors so that you can plug joysticks into the two extra ports on the side? I've just bought *Dynabusters*, which enables you to have six players at the same time. If you can't get them anywhere could you print the connections so I can make them myself.
Rob Fellows, Wolverhampton

stf: *Yeah, you can obtain just such an adaptor from WeServe ☎ 01705 647000 for just £5.88. As for the connections for a home-made job, Clive's suggested we do it as a DIY project in a future issue. Well, no promises but we'll try.*

Moondance

Dear *ST FORMAT*
Since playing *Moonstone* on an Amiga at my friend's, I was dying to buy this gory game for my Atari 520STFM which has been upgraded to 1MByte. I tried all the companies in *ST FORMAT* 63 and 64, and others, only to find that the company (unknown) that made *Moonstone* stopped it several months ago, but that it was out for the Atari priced at around £20-25. Is there any way of getting the game re-released, even for a short spell, or getting hold of this game?
Greg Capon, Grimsby

stf: *You're a braver man than me! I wouldn't dare take on Moonstone for pleasure – it was stupidly tough. Still I think the only real way you're going to realistically stand a chance of getting hold of a copy of Mindscape's knights-and-dragons hack-'em-up is to use our Reader Ads section on page 70.*

Dream letter

To *STF*
Could you please send me a working copy of the September Cover Disk as this version has a boot sector error. Could you also send me information on subscriptions in Europe for *ST FORMAT*.
Martin Wardeill, Germany

stf: *If I were to make letters up, this would be top of my list, although I'd probably wibble on endlessly and never quite get to the... well suffice to say I'd beat around the shrubbery for a goodly while. Anyway, it gives me the opportunity to go into 'explain' and 'market' mode. So thank you.*

As with all faulty disks you have to send it back to the labs (where they're made) because we don't keep a stock of them in the office. Pop your duff disk in a Jiffy bag, along with your name and address and send it to: ST FORMAT September Disk Returns, PO Box 21, Daventry, NN1 5BU. Don't worry about a stamp – we pay the

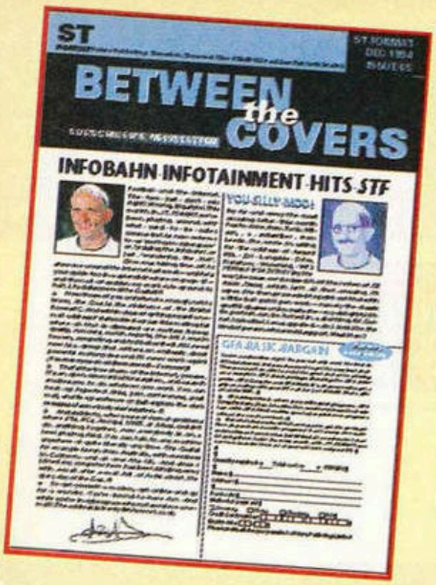
Dynabusters+, the Gold-rated multi-player blow-'em-up from last issue (see page 86 if you missed it). Find out how to get six players going at once.

DISK-CUSS

Dear *ST FORMAT*
I have just gone out and bought your mag, looking forward to testing the *Ishar 3* demo you said would be on issue 62. But to my horror it was not there. I looked to see if it had fallen off but it had not and was just not on your mag. One of the other ST mags had a demo of the game but I'm loath to buy a mag just for a demo. Could you tell me where it went and if you are going to put it on another issue?
NJ Russell, Eastbourne

stf: *First off, apologies for raising your hopes over the Ishar demo, but I hope I can explain some of the mechanics behind our disk production. Firstly we try to offer exclusive demos on our Cover Disks, because this way you get better value. Secondly there is the question of space. ST FORMAT is a broad-based magazine, with readers interested in everything from programming through to games. If we soak up all the available disk space with one large game demo then this gives our non-gaming readers nothing and is hardly fair. Ishar 3 fell into both these camps – not only was it was huge, but we couldn't guarantee the exclusivity of the demo, even though at the time of printing the 'next month' feature we were under the impression it was ours alone. It was also for 1MByte users only. These factors conspired against us running said demo. Sorry about that.*

Ishar 3 didn't appear on *ST FORMAT's* Cover Disk for a number of reasons, all of which are explained on the left. Now, good sir, if you'll just let me past, I'm late for the Annual General Meeting of 'Mad Looking Warriors' in the Dog and Duck Tavern across the street.


ST

ST FORMAT DEC 1994 ISSUE 63

BETWEEN the COVERS

INFOBAHN INFOTAINMENT HITS STF

■ We could fill the subs' letter with wit and humour. But we don't. We use it for Wonder Disk instructions instead.

WYSIWOT?

Dear *ST FORMAT*
I am writing to correct an error made by Simon Forrester in his review of *Protext 6.5* in issue 63. He claims that there is still no WYSIWYG feature in this program, yet I use *Protext 4.3* and can tell Simon that there most definitely IS one! It's another reason why *Protext* is so good. Simon states that "text styles like italics and enlargements aren't displayed on screen in their final form, and instead are displayed in control codes..." an effect he says "ruins all ideas as to what the final printout will look like". In *Protext 4.3* you can easily turn off the control codes, which results in their effects being seen in *1st Word* style; so, for example, italic text is seen sloping, and bold effects are shown as bold. The only fault is that the enlarged text doesn't appear enlarged, but since this is only used for headings it's not really a problem. In all other respects *Protext* is WYSIWYG!

I suspect Simon's slip up comes from his admission that he has not "experienced anything other than the original release version to any great extent". It's no wonder that he rounds up by saying that *Protext* is a "reet pig to master". I personally have always found it to be one of the easiest, most flexible and natural word processors to use. The text on screen is almost exactly what you will get when you print it out.
Christopher Hester, Shipley

stf:* *Well yes. Simon was in fact referring to what can only be described as 'true WYSIWYG' where the look of a document on screen is exactly the same as what pops out of the printer. Protext 6.5 is not WYSIWYG because to work at its best it really needs to run with control codes rather than the straight facsimile (although this is optional), and also because pictures imported into the document are not displayed.

As for his comments concerning the unfriendliness of the package, he is right, but so are you. The power of Protext makes it a fearsome text-cruncher – and one of my personal faves – however for those used to packages like That's Write it is an intimidatingly brutal interface. Once you get the hang of it, though, Protext proves to be one of the most truly flexible word processors going.

postage. Naturally overseas returns will take a little longer but they will get to you.

As for Europe, you can subscribe for the bargain price of £60.95 and the whole package – magazine, Cover Disk, subscribers' newsletter and Wonder Disk will be airmailed to your door every single month. For more details on subscriptions see page 72.

Come clean and prosper

Dear Trenton
Having read the feature in *ST FORMAT* issue 64 about demo groups, I just want to clear up the comments that demo groups should produce games and utilities rather than non-interactive material. A number of demo groups are producing or have produced software (both utilities and games). A number of new games coming out such as *Obsession* and *Utopus 2* are made from demo groups. Aggression, for example, spent a lot of time producing demos and are now producing games.

Another point to bear in mind about software is that even though there are not many large software houses left producing Atari software, there is a large amount of new software available through the shareware system. For £5-10 you get a lot more from the people that produce the software, and they also offer a lot more user support and free upgrades for their software. I have sent off to several shareware programmers and the response I have received from them has been excellent.

Giving shareware programmers a donation shows that they get something in return for their work. The software is also five times cheaper and sometimes a lot better than full-price software.
Philip Konlack, Nairn

stf:* *Too right. Our demo feature sought to explore the reasons why people still seem to focus all their efforts on non-interactive programs. ST FORMAT encourages this kind of coding, because it is an excellent arena in which people who are developing their coding skills can gain valuable programming experience. However considering most of the programmers in the demo scene appear to be fearsomely capable coders, it's a little galling to have our appreciation limited 'ooohing' and 'ahhhing' at their latest creation.

As for shareware, you could not be more right – it's the ideal way to buy software. It's written by machine-specific experts and comes with a great deal of close customer support. The shareware market is far from rosy though, with an increase in piracy and code theft (see our full report on page 74) despite the good intentions of the authors and the ridiculously low price of the programs.

Pay now, play later?

Dear Sir
I've come across an old issue of *ST FORMAT* (May 1992) in which you had a campaign for more games on the ST. I don't know if anything came of this but two of the games mentioned therein *(F-117A* and *Secret Weapons of the Luftwaffe)* have definitely not appeared. It appears that games publishers have abandoned the ST, their reasons including a small user base and piracy.

Do you think companies would be more willing to produce games for the ST if owners were to pay for the games before they were released? This way companies would have an assured order and us ST game players would get some great games.

Perhaps if a magazine (hint, hint), ST dealer, User Group or even a reputable PDL were to support/organise such a scheme the games publishers would be willing to listen. Obviously this would be far more involved than I am making out, but there must be a way, surely? The number of titles would be limited to a few titles per month and there are more than enough titles to create demand out there. My list would include *Birds Of Prey, TFX, Gunship 2000,* to name but a few. So is there any support out there in STland?
Stuart Munro, Fife

***stf:* *An ingenious idea, but I personally would be cautious of such an approach. Firstly paying your money in advance would leave you, as the consumer, with little or no power, particularly if the finished game turned out to be a bit of a dog. Furthermore certain games (for example) demand such high-end systems with hard drives and accelerators that the user base would indeed be limited – namely Clive. What's more, games take a long time to produce properly. I'm not sure I would be willing to cough up £30 now to get a game just before Christmas 1995 – I'm just not that patient! Would anyone else be interested in such a scheme though? Let me know.* stf**

■ England, way back when they were really good at football. In other words, before Nick, Jill and Simon were born. Tragic isn't it? *(No, not really – Jill)*

Make the behemoth even more behemothy next month! Write in and have your say about anything to do with the ST, *ST FORMAT* and the eternal RVF vs RF900R debate. Jot your thoughts down and send them to: Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon, BA1 2BW. "The world will hear from me again!"

TWILIGHT ZONE

ANOTHER COMPO?

AND NOW, FROM THE HALF-LIT world of semi-darkness (stands to reason, really), we bring you the Twilight Zone Animation Festival! That's right, it's another one of those competitions. This month sees the birth of a brand spanking new fad, similar to Pixel Painting, that gives you the opportunity to show off your work to the world. Except this one's animation rather than still piccies. All you have to do is re-read this issue's main feature, and put together a top animation of absolutely any kind, whether we've covered it here (I should hope so, or we'll be in deep trouble) or not.

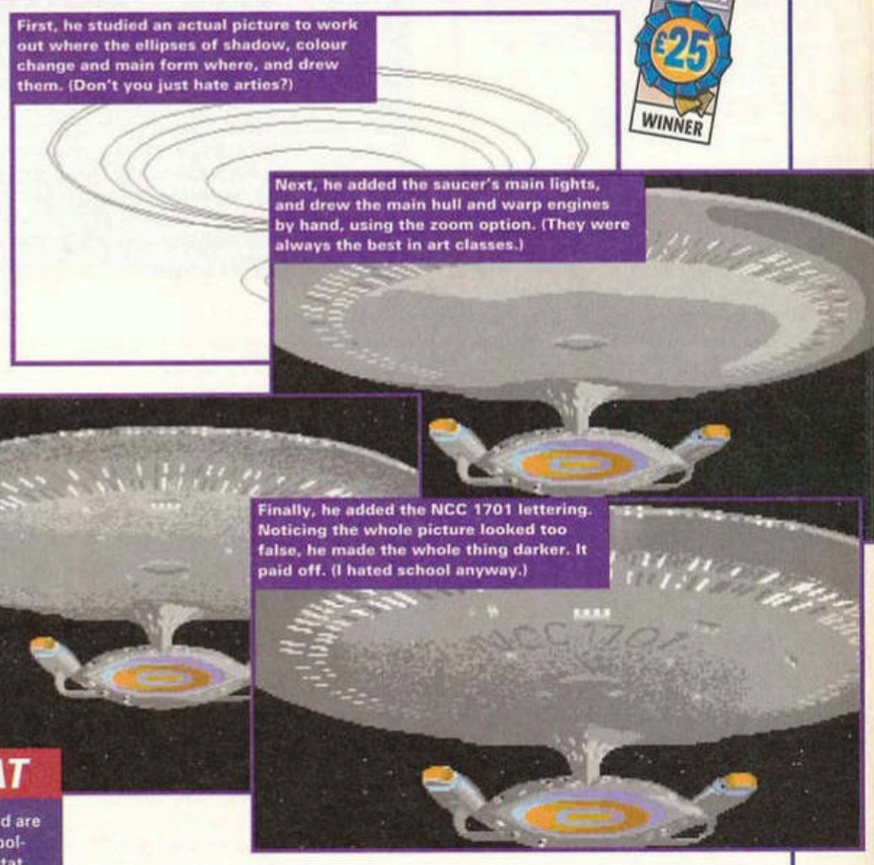
The award is yet another £25, so get filming. As long as it's on an ST and it moves, you stand a chance of getting your work seen by the masses, and getting some cash into the bargain. Send your entries in marked: 'Cinematographicatory Contributionalisation'. What are you waiting for? The address perhaps? Oh, okay. It's *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon, BA1 2BW.

PIXEL PAINTING

ST FORMAT £25 WINNER

This periodical's piece of pixellated perfection comes from Jonathan Mortimer of Yorkshire, whose subject is the Starship Enterprise. Propeller-heads will be disappointed to learn that I can't actually quote the ship registration off the top of my head, but suffice to say it's the *Next Generation* model, with new doors 'n' everything.

Jonathan spent five hours slaving over *Prism Paint*, taking four main steps in drawing this picture, as you can see...



First, he studied an actual picture to work out where the ellipses of shadow, colour change and main form where, and drew them. (Don't you just hate arties?)

Next, he added the saucer's main lights, and drew the main hull and warp engines by hand, using the zoom option. (They were always the best in art classes.)

Finally, he added the NCC 1701 lettering. Noticing the whole picture looked too false, he made the whole thing darker. It paid off. (I hated school anyway.)

Jonathan had trouble getting the main hull's shading right, but managed in the end with a spray can and patience. (While I was always rubbish.)

DON'T MISS OUT ON *ST FORMAT*

MAG*SAVE

There are two kinds of people in this world. The first kind are cool, calm, collected. They live in airy apartments with polished wooden floors. They lounge around on their Habitat, off-white beds on a Sunday, eating croissants. They wear natural fibre clothing, kind of relaxed but at the same time incredibly trendy. They never get caught in the rain without an umbrella. They don't have problems hailing taxis, and they never seem to get splatted with water as cars speed past them on puddly roads. These people don't have to hunt around newsagent after newsagent, desperately looking for a copy of their favourite mag, a week after on-sale date. No, they fill in the form below and hand it to their local newsagent; the one just round the corner. Then they wander in, cool as a cucumber, and collect it. No problems. You don't want to know about the other kind of people.

Cut out this form (or a photocopy) and hand it to your newsagent
Please reserve/deliver *ST FORMAT* each month, beginning with the February issue, which is on sale Tuesday 10 January 1995.

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To the newsagent: *ST FORMAT* is published by Future Publishing ☎ 01225 442244 (Circulation)

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A NEW WORLD ORDER

AS YOU MAY OR MAY NOT BE aware, Future Publishing, the home of this wonderful magazine you're reading, has just been purchased for a princely sum of £loads. The new owners are a company called Pearson, and they're the people behind the *Financial Times*, BSkyB, Thames TV, Alton Towers and Madame Tussauds. It's obvious that with credentials like that they're going to want to make a few changes to the mag you know and love:

- If you had hassle getting the larger-than-A4 mags into your binders then it's time to start worrying – we're going broadsheet.
- The magazine will be presented by an American with wide lapels and an even wider smile.
- The screenshots will now be shot from incredibly bad, arty angles.
- We'll be carrying out in-depth studies on how to clean out negative-G vomit from a Stacy keyboard while screaming around the Thunder Looper.
- Our editor will be replaced with a life-size wax reproduction.
- But no one will notice.

...AND IT'S CRAP

On Monday 24 October, Garry Bushell wrote a piece for *The Guardian* on multimedia, opening the piece with, among others, the sentiment: "I've got an Atari, and it's crap." Well, Garry, we've read your column in *The Sun*. And it's crap.

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ST FORMAT

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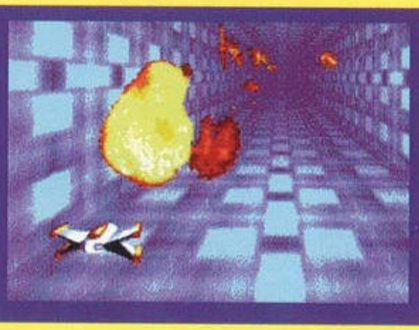

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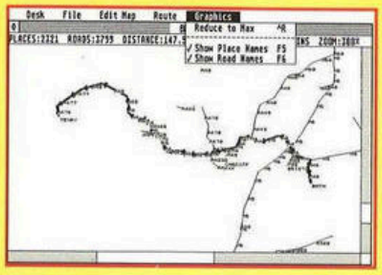

Get from A to Z faster. You won't ever have to use a dodgy road map again.

CALENDAR

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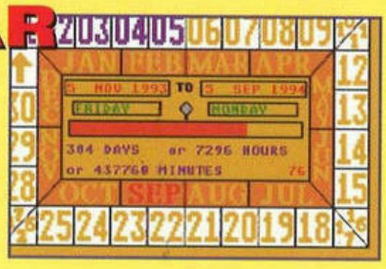

ENDURANCE

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Backup and Menu programs

ANIMATE 4

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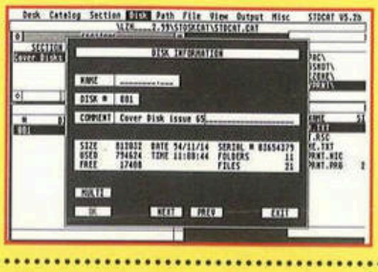
DISK CAT



Keep tabs on your disks effectively using this handy utility.

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Create your own bitter and twisted wordsearch. Fun for all the family!

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