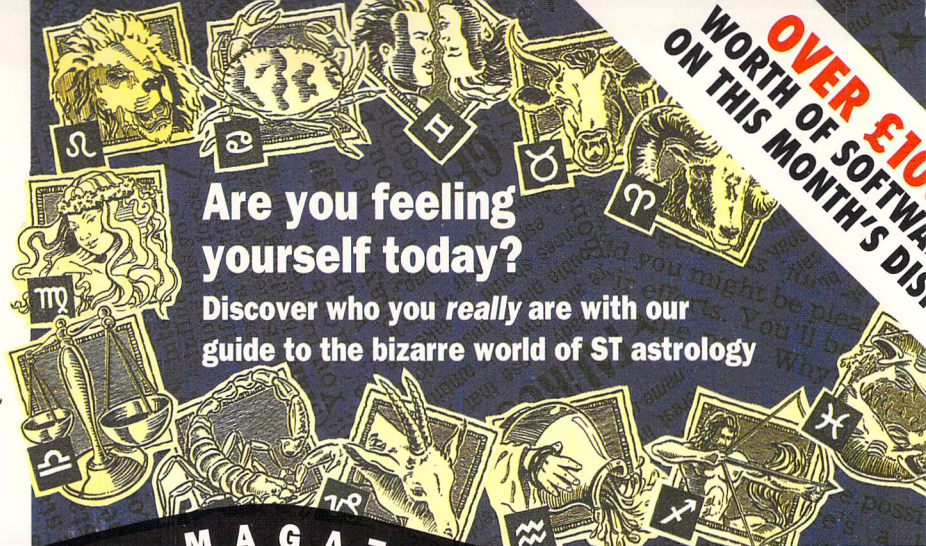


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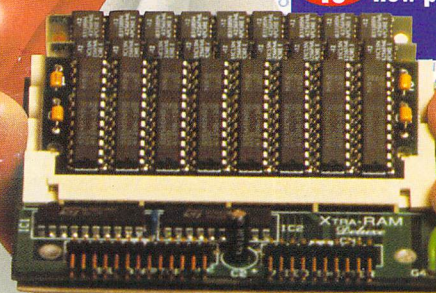
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360

OTHER REASONS TO
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- 170** items in our buyer's guide
- 111** totally unbeatable tips -
- 40** Public Domain programs rate
- 17** games under the microscope
- 12** Cover Disk programs
- 10** new packages reviewed

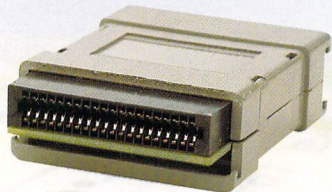


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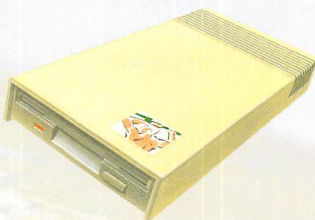
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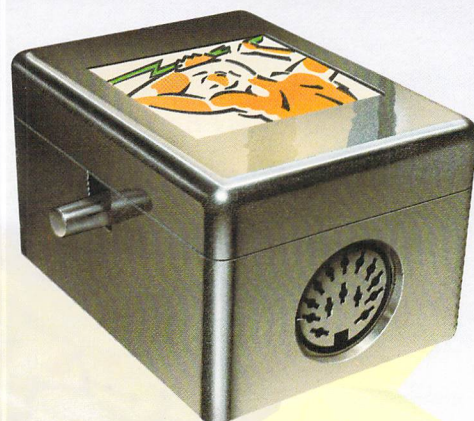
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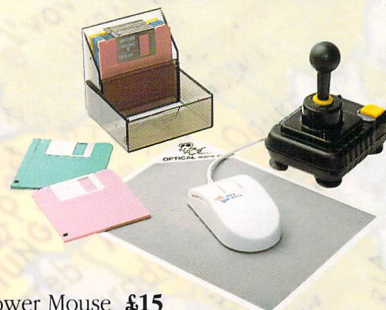
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Atari ST Power Scanner



Following the huge success of the Amiga Power Scanner, we have been hard at work to produce a product of the same high quality for the Atari ST, and are proud to present the new Atari ST Power Scanner.

This compact unit plugs into the Atari cartridge port and allows scans to be taken at up to 400dpi using the supplied M105-PLUS hand scanning head.

The unit is supplied with the 'PowerScan ST' software-a powerful and user-friendly utility boasting features normally only found on far more expensive products including:

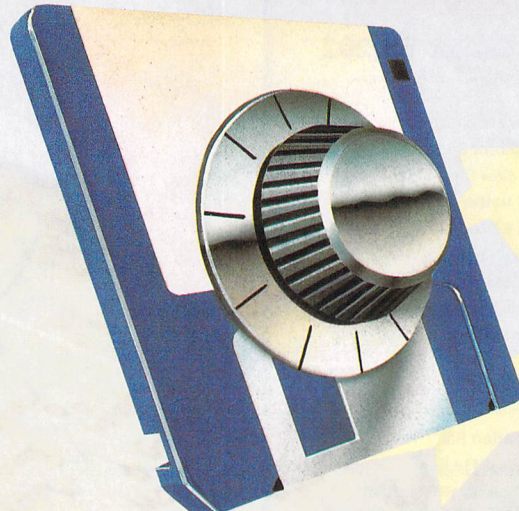
- Auto scan rate detect
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Watch out for our regular software updates with many exciting new features, available only to registered users **£99 inc.VAT**

*Still being finalised, may not operate at all resolutions

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The Ultimate Cartridge will break into any Atari ST program. Whether you're programmer, hacker, games player, or just curious about your Atari ST, The Ultimate Cartridge gives you the power that you need. Updates available with new software.

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- Print memory
- Disassemble
- Disassemble to disk
- Edit memory
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- Search for sprites
- Edit screen configurations
- Set up colour palettes
- Alter plane configurations
- Load and save screen displays
- Run external TOS programs
- Load TOS programs

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- Low level disk editor
- Disk analyser
- Examine formats
- Format analyser
- File editor
- Directory editor
- Formatter
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- Look for music
- Play music
- Load and save music
- Search for soundtracker music
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The cartridge the ST has been waiting for **£25 inc.VAT**

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 the time goes, eh? Just yesterday we were tripping up the
 path of 1985, and now here we are in '92, wondering
 where all this European business is. Makes you think.

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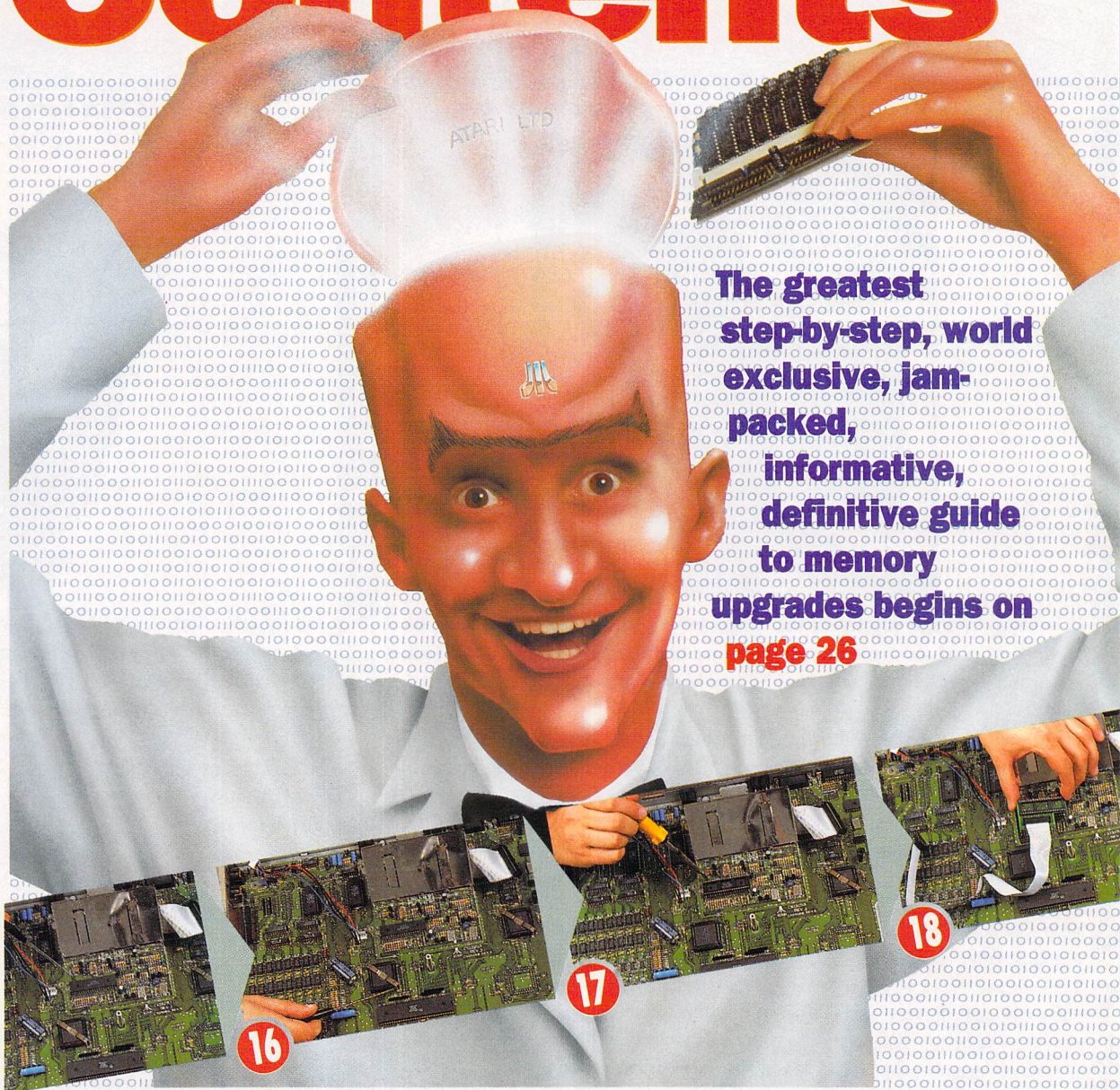
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 PCW Plus • Total!

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The greatest
 step-by-step, world
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 find out how to use them to
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116 HOUSE OF THE RISING SUN

What will you be doing next week? Our guide to ST
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 entire history of the
 Universe just got better.
 Turn to page 14 and find
 out why



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32 PUBLIC SECTOR

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 whopping 40 Public Domain programs!

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Make sure you guarantee your copy of next month's
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Memory upgrades? Check. Printer drivers? Check.
 Write-On manual? Check. Don't miss these bargains

63 TIPS GALORE

It's the greatest tips guide ever. Printers,
 comms, programming, games... it's
 all here

83 SCREENPLAY

Before you treat yourself to a game,
 make sure it's worth your hard-earned cash by read-
 ing our definitive game guide



SO WHAT'S SO SPECIAL ABOUT THIS ONE, THEN?



Welcome to yet another action-packed issue of *ST FORMAT*. By now you've probably noticed that the cover is weighed down by two Cover Disks, each bursting at the seams with great software – over £100 worth of complete packages from GFA is just for starters! Play with the graphics features of *GFA*

Raytrace, learn to program with *GFA Basic 3.5*, then create more complex programs with *GFA Assembler* – it's all here. To help you make the most of these programs, we've got a four-page guide beginning over the page and the start of a special Chaos programming series (page 46) written by Conrad Bessant, author of *Computers and Chaos*.

Several months ago, we ran a questionnaire in which over 50% of you said you wanted a feature on memory upgrades. Well, this month we're giving you exactly what you want. Step-by-step guides, photographs of just about every type of ST circuit board in existence, and a helpful guide to buying upgrades make it an essential read. Turn to page 26 and I'm sure you'll agree that no magazine has ever before presented such a thorough guide to the jargon-packed subject of memory upgrades.

Then, for those of you who are interested in putting your ST to more unusual uses, catch our astrology feature on page 116. With the help of our Cover Disk programs we show you how to use your ST to define your astrological chart and then interpret the information.

This month we're also starting a new series on music for beginners. If you've always wanted to discover why your ST is supposed to be good for music but never felt brave enough to plough through the jargon, then this series is going to take all the hard work out of it – see page 54. Finally, don't miss some serious debate about the future of the computer industry in this month's Feedback pages, starting on page 122.

As ever, if you've got any criticisms or comments regarding this issue of *ST FORMAT*, please feel free to write to me at *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Thanks again for investing in this packed issue. Auto-
graphs later, please.

Mark Higham, Editor.

120 SEQUENCER ONE

More in our series helping you explore the full potential of *Sequencer One*



122 FEEDBACK

Share your views with 65,000 other readers. The Editor gets his chance to answer all your letters

132 BUYERS' GUIDE

Before you buy any hardware or software for your ST find out what we thought of it

146 TWILIGHT ZONE

A behind the scenes look at what's happening in the ST world. Plus next month's goodies revealed

SCREENPLAY

The latest ST games reviewed and rated – page 83

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25 great games cheated in *Gamebusters* – page 74

THE GREAT ST COVER DISKS

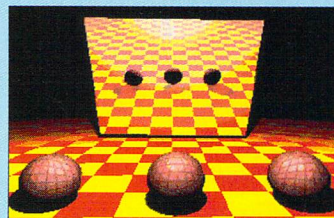
Turn the page now!



ABSOLUTELY TREMENDOUS!

This month we're giving away not one, not two, but a whopping *three* full and complete commercial packages.

- *GFA Basic 3.5* – the definitive BASIC programming language with over 350 commands – the fastest BASIC you're likely to find anywhere.
- *GFA Raytrace* – raytrace your own realistic 3D animations.
- *GFA Assembler* – create super-fast programs of your own with this ultimate programming language.



See the exciting images you can create with the *GFA Raytrace* complete package on our second disk.

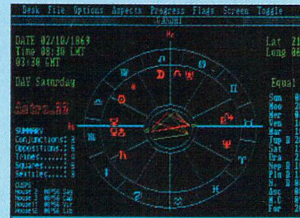


EVEN MORE COMPLETE PROGRAMS!

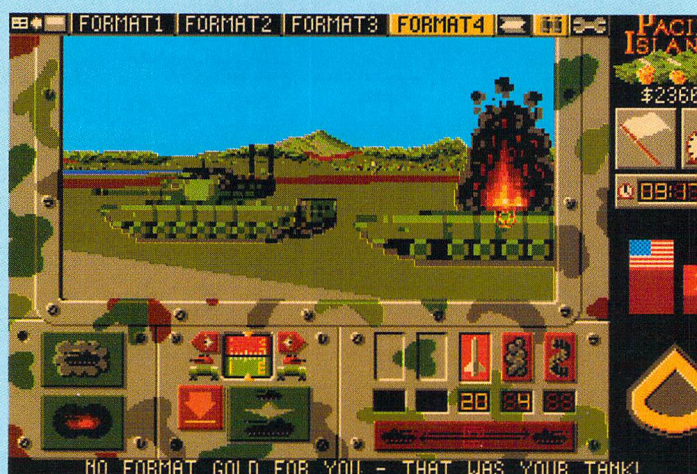
Don't miss the goodies on this month's bulging Cover Disk:

- A complete mission in *Pacific Islands*, a state-of-the-art battle simulator
- Exclusive! *Astrocalc 22* to generate and interpret your birth chart
- A fully configurable database, a flashing pattern generator, plenty of handy utilities, a cheeky Desk Accessory – and much more – are all yours

Turn straight to page



Create your very own astrological chart with our exclusive Cover Disk program and full guide.



IT'S WAR!

Can you save the world from ruin with this month's playable preview of *Pacific Islands*?

ST FORMAT

GFA SPECIAL
THREE COMPLETE PACKAGES
WORTH OVER £100

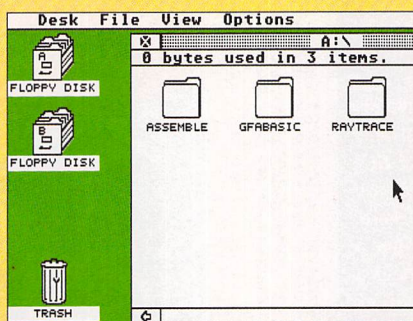
THREE FABULOUS PACKAGES WITH OUR COMPLIMENTS
GFA BASIC 3.5
Create your own programs. This is the fastest and best BASIC language ever!

GFA ASSEMBLER
Produce lightning fast programs in machine code

GFA RAYTRACE Create your own incredibly detailed 3D pics in 512 colours on any ST

We scoop some of the best software for our superb second Cover Disk

WHAT'S ON THE SECOND COVER DISK?

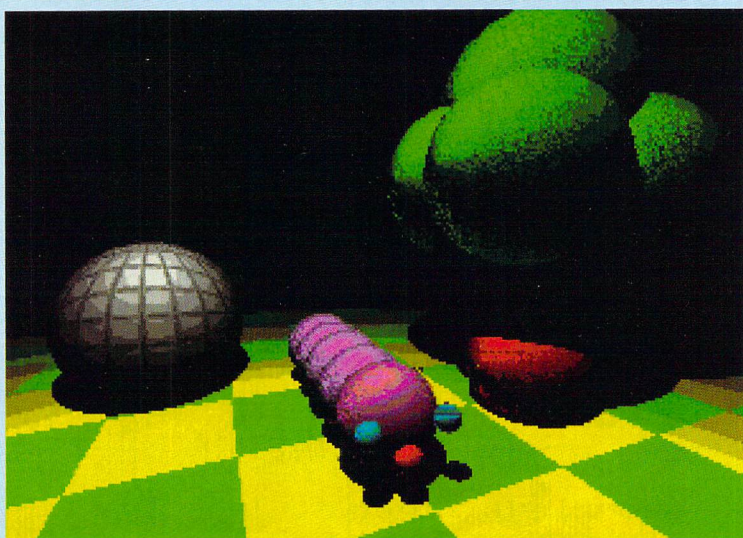


When you switch on your ST with the second Cover Disk in the drive, you're presented with three folder icons called **ASSEMBLE**, **GFA BASIC** and **RAYTRACE**. Click on the **ASSEMBLE** icon to open the **GFA Assembler** folder, which contains **GFA-ASM.PRG** and everything you need to create and compile assembly language programs, including some example code.

The **GFABASIC** folder contains the **GFA Basic** program and a document called **GFABASIC.TXT**. This file contains a full list of the commands used by **GFA Basic 3.5**, so you can get straight into it.

The final folder in the window is called **RAYTRACE** and contains the **GFA Raytrace** package which enables you to produce stunning 512-colour raytraced pictures and animations like those on this particular page.

GFA Raytrace



● 512K pictures, an easy-to-use set of options and a slice of imagination are all you need to generate fabulous pictures like these on any ST.

There are very few packages available on the ST which enable you to generate raytraced pictures. Those that are available are Public Domain programs which might be competent enough but are far from easy to use. **GFA Raytrace** is about to change all of that.

GFA Raytrace enables you to build up objects from simple basic shapes, assign colours, attributes and textures to these shapes and then illuminate them with one or more light sources.

Raytracing is an effect which tracks individual light rays from the light source to the objects, and calculates all reflections from other objects. In this way, a realistic picture is built up with objects, light sources, shadows and reflections following the laws of physics. This requires tons of calculation – fortunately your ST does this for you, you just build up the objects and

place them into the “world” created by the program (see our full raytracing feature in issue 33. If you missed that, see page 44).

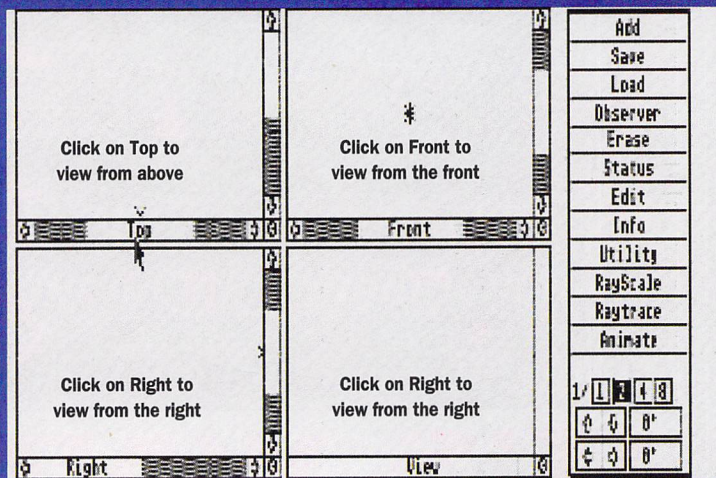
A full screen picture typically takes an hour or less to raytrace on the ST, much faster than any other program.

IT'S LOADED, BUT HOW DO I USE IT?

GFA Raytrace enables you to create 20 objects on a 512K ST and up to 60 on STs with more memory. These shapes include triangles, rectangles, ellipses, spheres, pies, ellipse segments, cylinders, cylinder segments and cones. You can build up complex shapes by adding different basic shapes together.

You can add other elements to raytraced pictures – walls, lamps (for illumination), the ground, the horizon and the sky. When you place an object into the picture, you must define three points: the point of origin (O) and the second and third points (A and B) which, together with the first point, describe the object. With some shapes, a fourth point (C) is needed, for cones, cylinders and cylinder segments. Some objects also need angles to be defined (a and b), with (a) being the start angle and (b) the end angle.

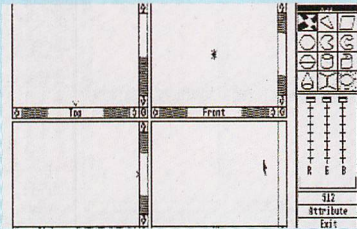
DESIGNER RAYTRACING STARTS HERE



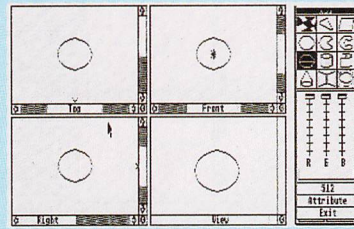
The main editor screen where you design and place your objects. Each window shows a different view of your design

| | | | |
|-----------------|--|-----------------|---|
| Add | Switch to the Add Object menu | Info | Displays current drawing info. |
| Save | Saves raytraced screens or data to disk | Utility | Call up a set of disk utilities |
| Load | Loads raytraced pics or data. Degas or Neo pictures can also be imported to paste onto objects | RayScale | Zoom in and out of your GFA Raytrace “world” |
| Observer | Changes the position of the point of view | Raytrace | Switch to Raytrace. Use <F2> |
| Erase | Switches to the Erase menu | Animate | Switch to Animate. Use <F3> (below Animate icon) Coordinates are displayed here |
| Status | Displays program parameters | | |
| Edit | Enables you to edit individual objects in your drawing | | |

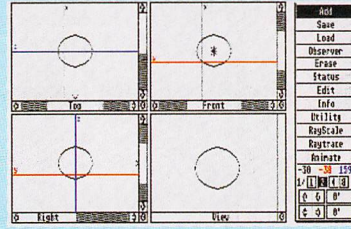
THE STF INSTANT GUIDE TO RAYTRACING



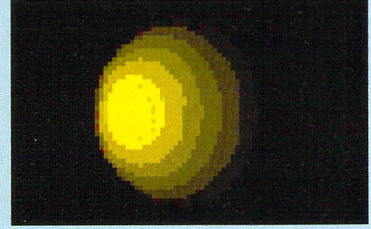
1. This is the Add Object menu – all the objects used are added from this menu.



2. Creating and placing a sphere from the Add Object menu.



3. Below Animate you can see the coordinates set up to place the new lamp.



4. The sphere as it appears after raytracing is complete.

CREATING A SPHERE

After you've run the program and the title picture has appeared, press any key to move to the 3D Editor menu. The initial work screen appears as four GEM windows with a menu bar down the right side of the screen. The four windows represent the top, the front, the right and the overall 3D views. This menu can be reached at any point during the program by pressing <F1>, except during raytracing. Follow these simple steps to produce your first picture.

Move the mouse pointer to the Add option on the menu (see **pic 1**), then click once with the left button. Select the Sphere option by clicking on the circle with the cross through it. You may now specify the various parameters of the sphere, but we are going to use the default parameters as follows:

Colour or greyscale: White
Material: Dull
Reflectivity: Zero

Click the right mouse button once to place the sphere. Press <Help> and the vertical and horizontal bars in the windows are labelled x, y and z as appropriate.

The numbers at the bottom of the right side of the screen represent the current x, y and z coordinates. They are shown in black, red and blue on colour systems. Moving the mouse to the right increases the x-axis coordinates so that the vertical black bar in the front, and top view windows move to the right. Moving the mouse up increases the y-axis coordinates – shown by the red horizontal bar in the front and right windows. Finally, holding the right mouse button down and moving the mouse

upwards increases the z-axis coordinates which are shown by the blue bars moving in the top and right view windows.

When setting coordinates, it is best to fix the z coordinate first because this remains unaltered as long as the right mouse button is not pressed.

Move to coordinates 0,0,159 and click the left mouse button. A sphere with a radius of 25 appears in the first three windows. Move the mouse to the right until the radius of the sphere is 45. The radius can be seen in the position where the x, y and z coordinates were previously displayed. Now click on the left button to fix the sphere in position. The sphere now appears in the main view window (**pic 2**).

If the picture was raytraced now, it would be completely black because no means of illumination has been set up. Now you can add light sources to the picture.

Move the mouse to the lamp symbol in the bottom right corner of the Shapes menu, and click the left mouse button. If you have a colour system, change the lamp to yellow. Mono systems only have white lamps. Move the mouse to the right-hand colour slider (blue). Click and hold the left button to drag the slider right down, then release the button. The colour indicator bar turns yellow. Click the right mouse button to place the lamp. Move the mouse until the coordinates read -100, 0, 21. Click the left button to place the lamp. Remember that the z coordinate can only be adjusted by pressing the right mouse button while moving the mouse (see **pic 3**).

Click on the Exit option at the bottom of the menu bar to leave the Add menu.

Now select the Raytrace option to switch to the Raytrace menu.

Move the mouse pointer and click the left button on the box marked "2" at the bottom of the raytrace menu. This selects the scale of the picture to be raytraced – the smaller the scale, the faster the raytracing takes place. There are four scales available from full scale to an eighth. In this case, we have selected a half scale. Select the Do Raytrace option.

On a mono system, the picture gradually appears in nine shades of grey, known as 9G-mode. Pressing <Esc> aborts the raytracing after completing the next line.

On colour systems, a wire-frame of the drawing appears and, after a few seconds, raytracing commences in 16 colours. After the picture has been rendered, it's displayed in 48 colours per line mode. If you want a preview press <Help>. After a few seconds, a 48 colour per line preview of the current status of the picture is displayed. Pressing any key apart from <Esc> continues the rendering process. Pressing <Esc> aborts the procedure after the current line is complete. If you produce a picture at full

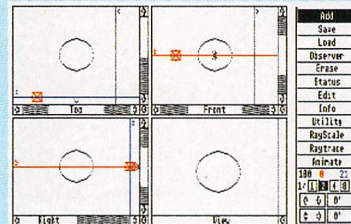
scale, press the right mouse button to view the whole picture (see **pic 4**). Press any key in order to return to the Raytrace menu bar.

You can save pictures using the Save Screen option – use the file extender .SCL (Screen Compressed Low) if you're using a colour system, and the extender .SCH (Screen Compressed High) on a mono system. Experiment with other scales and note how the rendering times change – the higher the scale, the longer it takes to raytrace.

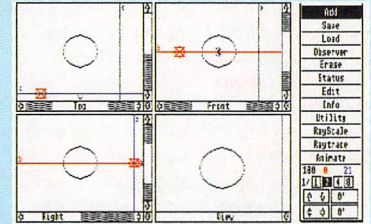
Now add another lamp to the picture – cyan on colour systems and white on mono systems. Press <F1> or select the Editor option to return to the 3D editor.

Select the Add option and move the R (red) slider right down and the B (blue) slider up. This selects cyan (see **pic 5**).

If the lamp symbol isn't selected then click on it with the left mouse button. Press the right button and use the mouse to position the lamp at 100, 0, 21 (**pic 6**). Use Exit to leave the Add menu. Press <F2> to go to the Raytrace menu and Select Do Raytrace to calculate the picture. Now save using Save Screen.



5. Now add a cyan lamp to the picture from the Editor menu.

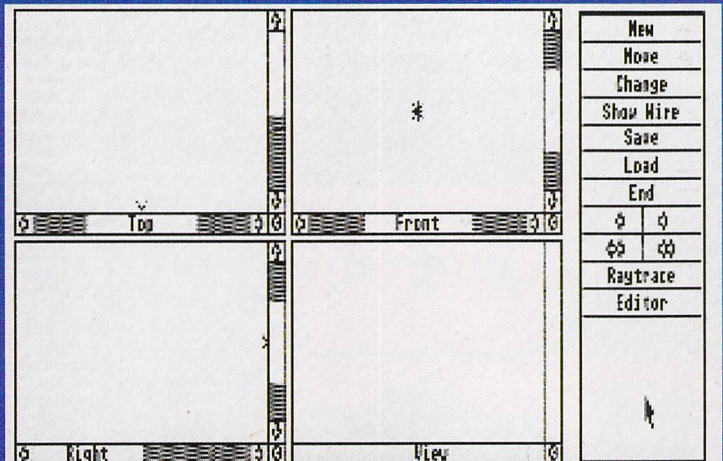


6. Two lamps have now been added – one yellow and one cyan.

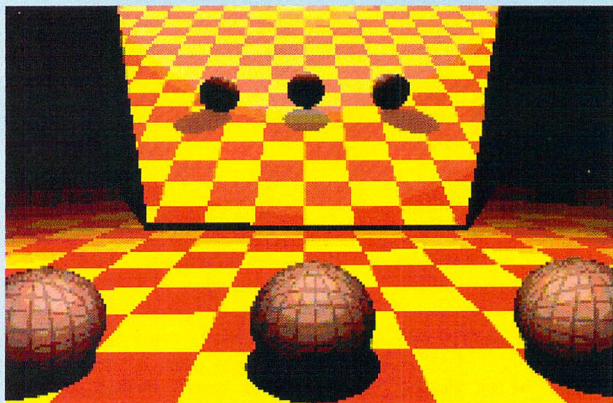
MY GOD, IT JUST WON'T STOP MOVING!

Create raytraced animations from the animation editor screen. You design your picture in the main editor, then switch to this screen where you can slightly move an object, then save the data. Thus you create a series of frames and save them as a data file. You can re-edit individual frames to move other objects later

| | | | |
|------------------|---|-----------------|---|
| New | Clears animation in memory | End | Sets the number of animation frames – the default is 10 |
| Move | Moves an object as part of an animation sequence | Step | Step frame by frame through an animation |
| Change | Defines the parameters of an object in an animation | Step | Step from first to last frame |
| Show Wire | Shows a wire-frame version of your animation | Raytrace | Switches to the Raytrace menu, also accessed by <F2> |
| Save | Saves animation data to disk | Editor | Switches to the Editor menu, also accessed by <F1> |
| Load | Loads animation from disk | | |



CREATING MORE COMPLEX SHAPES WITH GFA RAYTRACE



● With a little imagination and some of the 3D effects, some quite stunning results are possible.

Now to produce another picture. You must return the program to its default conditions by selecting the Erase option (see **pic 1**). A sub menu appears – select the Erase All option to clear everything in memory, and the default scale returns to a quarter. In the new picture, you create and place a cylinder, use the Observer function, and set the viewing direction to create different views. If you have a mono system, set two lamps, and if you have a colour system use three coloured lamps.

To place a cylinder, select Add from the Editor menu and select the cylinder shape (see **pic 2**). Colour systems should have all three colour bar sliders at the top of their scales, so that white is selected. On mono systems, select the white square from the greyshade menu box.

Initiate placement of the cylinder by clicking the right mouse button. Move the mouse so that the coordinates 0, -66, 159 are displayed and click the left mouse button. This defines the centre of the ellipse (point O) which forms the base of the cylinder. You now have to specify two points, A and B, lying on the circumference of the ellipse in relation to the centre point, O. Place point A by moving the mouse to coordinates 25, -66, 159 and clicking with the left button. Now move to 0, -66, 196 and click to place point B. The base of the ellipse is now fixed.

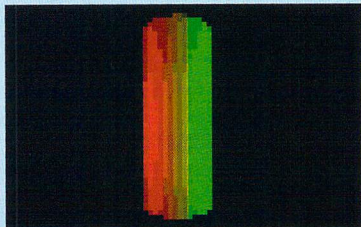
Moving the mouse moves the outline of the cylinder to define the height (**pic 3**).

Set the mouse coordinates to 0, 86, 159 and click the left mouse button to fix. You now return to the Add menu.

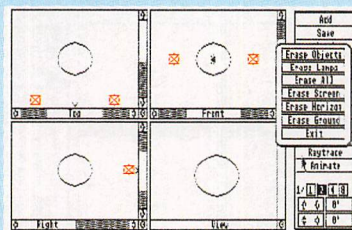
VIEWING FROM DIFFERENT ANGLES AND POSITIONS

The next section deals with the placement of lamps on colour systems – a red one and a green one. If you have a mono system, ignore the colour references but follow the other instructions. You can select the colour in two ways, either by means of the RGB sliders or by clicking on the 512 option in the Add menu – this brings up a screen which shows the 512 colours on a standard ST. Move the arrow to the colour red (RGB 700) and click the left button on it. Right click to return to the Add menu. Select the lamp symbol by left clicking on it and then right click to begin placing it.

Move to -160, 0, -1 and left click to



4. This is what the cylinder should look like after raytracing with a red and a green lamp.



1. The Erase menu in the Editor menu. Discrete elements of the pic or all the data in memory can be erased this way.

place the lamp.

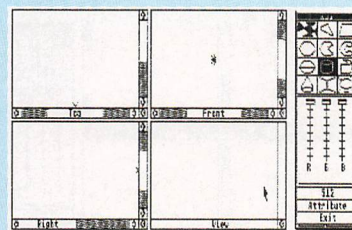
Set the colour to green by moving the green slider to maximum and the red and blue sliders to minimum.

Right click to initiate lamp placement and place the lamp at 160, 0, -1.

Now select the Exit option to return to the Editor menu. Go to the Raytrace menu by pressing <F2> or by selecting the Raytrace option. Select Do Raytracing to start raytracing the new picture (see **pic 4**).

You have to wait while the picture is raytraced. When finished you see a vertical cylinder lit by a red lamp on the left and a green lamp on the right. Now you can change the viewing angle of the program to view the cylinder from the left hand side, which is lit red on colour systems. Press <F1> to go to the Editor menu and select the Observer function by left clicking on it.

Move the mouse to -160, 0, 0 and left click to fix the position (see **pic 5**). This moves the point of view to the far left of the picture. You cannot see the cylinder in the main view window because the point of view is still looking "into" the picture from



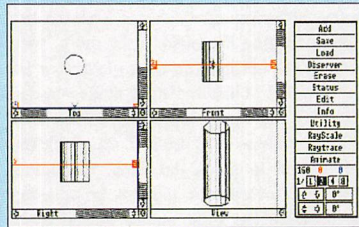
2. Selecting a white cylinder from the Add object menu.

the front, so you have to change the viewing angle to look to the right – this brings the cylinder back into view. The viewing angle is determined by two angles – horizontal and vertical. These are controlled by four arrows at the bottom of the Editor menu bar: left, right, up and down arrows. Click on these to change the angles.

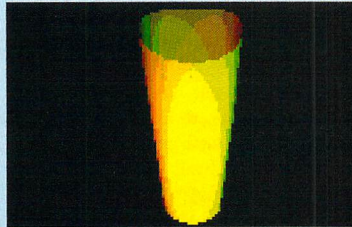
Click on the right arrow until the angle displayed is 314 degrees. The cylinder gradually moves into the view window. Select the Raytrace option and then select Do Raytrace to produce the new picture.

When the picture is complete, you can see that the cylinder is red with green edges. View it from the other side. Press <F1> to return to the Editor menu. Click on the left arrow and change the viewing angle to 54 degrees. Select the Observer function and change the coordinates to 160, 0, 0. Press <F2> to return to the Raytrace menu and select Do Raytrace again.

When complete, the picture shows a green cylinder with red edges. On mono systems, the cylinder looks as it did from the left because both lamps are white. On



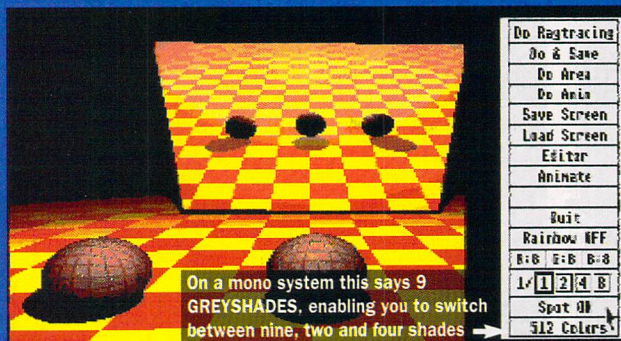
5. Altering your viewing point coordinates from the Editor. The arrows at the bottom adjust the viewing angle.



6. The new view of the cylinder created using three lamps and viewed from above.

RAYTRACING FOR THE MASSES

The raytracing menu screen – here you start drawing pics. Set the size of the final picture from here. If you select a small scale, the picture is produced faster than a full screen version – useful if you need to see a design progressing



On a mono system this says 9 GREYSHADES, enabling you to switch between nine, two and four shades

| | |
|---------------|--|
| Do Raytracing | Starts the raytracing function |
| Do & Save | Raytraces and saves pic to disk |
| Do Area | Raytraces a portion of the pic |
| Do Anim | Raytraces data created by Animation menu |
| Save Screen | Saves screen to disk |
| Load Screen | Loads screen from disk |
| Editor | Switches to Editor. Use <F1> |
| Animate | Switches to Animate. Use <F3> |
| Quit | Exits from GFA Raytrace |
| Rainbow OFF | Turns off the Rainbow function |
| 5:6 5:6 5:6 | Select 512, 256, 128 or 64 colour modes |
| 1/1 2/4 8 | Scale of rendered pic – full to one eighth |
| Spot ON | On: lamps affect texture-mapped objects. |
| | Off: texture-mapped pics keep original colours |

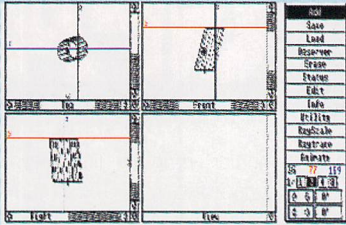
OTHER 3D

By using Rayscale and changing the observer-to-object distance, you can create other amusing effects. To increase the 3D effect, decrease the distance to the object and decrease the Rayscale.

Press <F1> to return to the Editor menu. Select Rayscale and set it to 2 – from its default setting of 5. The display in the main view window becomes smaller.

Select the Observer option, move the coordinates to 0, 84, 72 and fix by left clicking. This moves the viewpoint closer to the cylinder.

Press <F2> to return to Raytrace and select Do Raytrace. This gives a stronger 3D effect. You can now reduce the 3D effect. Press <F1> to return to the Editor menu. Select the Observer function and



3. Adjust the height of the cylinder until the you get the right coordinates.

colour systems, you can add a yellow lamp to alter the picture again.

Select the Add option. Select the lamp if it's not already highlighted. Select yellow by moving the red and green sliders to maximum and the blue slider to minimum. Press the right button to place the lamp and move the mouse to coordinates 0, 0, 0. Fix the lamp by left clicking.

Raytrace the pic and you get a cylinder that's green on the right and yellow on the left. Now change the viewing angle to look down the cylinder from above, on both colour and mono systems. Press <F1> to return to the Editor and select the Observer option. Move the mouse until the coordinates read 0, 160, 0 and left click.

Change the view direction by clicking on the right arrow until the horizontal angle is 0 degrees and click on the down arrow until the vertical angle is 318 degrees. Press <F2> to return to the Raytrace menu. Click on 2 in the scale box to change to half scale and raytrace the pic.

When the pic. is complete, you can see the increased 3D effect (see pic 6).



● These are the kind of results that can be achieved using GFA Raytrace.

EFFECTS

place the coordinates at 0, 0, -167. Left click to fix. The point of view is now further away and the cylinder is displayed at a reduced size in the view window.

Select Rayscale and change it to 8. Change the vertical angle to 0 degrees using the up arrow. Change the window scale to 2, then press <F2> to return to Raytrace. Now select Do Raytrace. You can see less of a 3D effect.

You can save your pics either as raytraced pics or as raw data, using the Save option from the editor menu. *Degas* and *Neochrome* pics can be imported and be pasted into the sky or ground, or texture mapped onto objects like triangles, rectangles, ellipses and cylinders. Experiment and have fun!

GFA Basic v3.5

The full and latest version of GFA Basic v3.5, is also yours with STF this month. GFA Basic is one of the fastest and most popular BASIC Interpreters available for the ST with over 350 commands. We last gave away GFA Basic 2 on Cover Disk 19, but GFA Basic v3.5 is very much faster and more versatile.

A BASIC Interpreter takes the lines of BASIC code entered into it and automatically converts them into a form that the processor can understand, called assembly language.

A BASIC Interpreter cannot create programs to be run directly from the Desktop by double-clicking on them – a separate program – a Compiler – is required to convert BASIC code to stand alone programs and Desk Accessories. Also on the second Disk is a text file which contains details of all the BASIC commands used by GFA Basic v3.5, excluding the Xbios and Bios commands which are used in more advanced programs to access the ST's internal routines.

USING GFA BASIC FROM SCRATCH

If you're new to GFA Basic, you may be surprised to learn that the Editor doesn't use line numbers when creating BASIC programs. Don't worry, though, your program runs without any problem. Another unusual feature is the fact that there is only one command per line instead of the several allowed in other BASIC interpreters. The Editor automatically deals with mundane features like capitalising words and indenting program lines

within loops when <Return> is pressed. Note that, when entering lines of code, spaces must be entered between keywords or else the Editor treats them as labels or variables instead of commands.

These differences aside, many of the commands in GFA Basic are similar to other implementations of BASIC so it's simple to get up and running quickly.

When you run the program, you see a blank screen with a menu bar running across the top. This screen is called the Editor and the menu bar acts as the interface between you and the BASIC interpreter. You can access the 20 commands on the menu bar either by a mouse click or the function keys, both shifted or unshifted. Clicking on the Atari Fuji symbol in the top left hand corner, enables you to access Desk Accessories and a small menu which enables you to save and load BASIC files.

If you press <Esc> while you're in the Editor, you switch to the direct mode of the program. This enables you to enter commands which are executed immediately. This can be useful for getting a disk directory, checking how a command is to function before you put it in the listing, or finding out the contents of a variable when you're debugging a program.

At the right end of the menu bar, there are two number displays – the top one is a clock and the lower one shows the current line number.

The best way to learn how to use the Editor is to enter and run a short program. Type in the following listing and press <Return> at the end of

each line – we've used the ↵ symbol to indicate that you don't need to hit <Return> – we just couldn't get the entire line into our narrow columns.

```
deffill 1,2,8
repeat
  while mousex=1
    pbox mousex,mousey,↵
    mousex+30,mousey+30
  wend
until mousex=2
```

After you've typed in this short listing, click on Run at the top right of the menu bar. The mouse pointer appears on a blank screen. By pressing the left button and moving the mouse around, a rectangle is painted onto the screen. If you press the right mouse button, the program ends. This listing contains some of the most basic elements of a GFA Basic program.

The DEFFILL command sets the type of pattern to be drawn. The commands MOUSEX, MOUSEY and MOUSEZ contain information relating to the mouse. These are variable names built into the interpreter. The commands REPEAT, WHILE, WEND and UNTIL are loop instructions – they make the program repeat until certain conditions are fulfilled.

While entering the program, do not worry about typing in commands incorrectly – the Editor checks that commands are entered with the correct syntax and refuses to accept mistakes.

● Please note that GFA are distributing GFA Basic 3.5 under licence to provide a single copy with this issue of STF – this does not mean that it is Public Domain, so please don't copy it.

THE GFA BASIC MENU

| | | | | | | | | | | |
|------------|------|---------|------|-------|--------|--------|------|--------|------|----------|
| Atari logo | Save | Save, A | Quit | New | BlkSta | Replac | Pg ↓ | Direct | Run | 19:14:42 |
| | Load | Merge | List | Block | BlkEnd | Find | Pg ↑ | Insert | Flip | 5 |

On the main editing screen, all the major commands can be accessed from the double menu bar at the top of the screen. The actual code of the programs you write is entered directly into the main editing area below the menu bar

Atari logo Switches to GEM so you can access Desk Accessories

Save Saves a GFA Basic listing to disk with the file extender .GFA

Load Loads a GFA Basic listing from disk with the file extender .GFA

Save, A Saves a GFA Basic listing as an ASCII file with the file extender .LST. This can either be loaded into a text editor or else Merged into GFA Basic v2

Merge Loads a GFA listing from disk as an ASCII file with the file extender .LST. This may be a program prepared in a text editor or saved as ASCII from GFA Basic v2

Quit Exits from GFA. This command can also be typed into your program code with the same result

List Prints out the current listing held in the Editor on a printer. GFA Basic listings are extremely well-structured with only short lines of code

used. But this means listings take up reams of paper

New Deletes the current listing from memory

Block Enables you to perform actions on marked blocks of text. Block functions are Copy, Move, Write to disk, List, go to Start, go to End, Delete block and Hide block

BlkSta Marks the start of a block so that you can cut it out, duplicate it or copy it elsewhere in your program – see Block

EDITOR KEYBOARD COMMANDS FOR GFA BASIC

Don't spend hours trying to work your way around *GFA Basic 3.5*. Here's a full list of the keyboard shortcuts so that you can move about more easily in your program code

CURSOR KEYPAD

Generally used for movements within a page of program text.

| | |
|-------------------|--|
| Left arrow | Moves cursor left one character |
| Right arrow | Moves cursor right one character |
| Up arrow | Moves cursor up one line |
| Down arrow | Moves cursor down one line |
| Insert | Inserts a blank line |
| ClrHome | Moves cursor to top left corner |
| <Control> ClrHome | Moves cursor to start of program listing |
| Help | Using <Help> procedures and functions can be folded and unfolded (hidden). Place the cursor at the start of a procedure or function and then press <Help>. The procedure compresses to a single line |

NUMERIC KEYPAD

Used for larger movements within the program and inserting and deleting lines.

| | |
|-------------|----------------------------------|
| <Control> 4 | Moves cursor left one character |
| <Control> 6 | Moves cursor right one character |
| <Control> 8 | Moves cursor up one line |
| <Control> 2 | Moves cursor down one line |
| <Control> 7 | Jumps to start of program |
| <Control> 1 | Jumps to end |

| | |
|-------------|---------------------|
| <Control> 9 | Moves one page up |
| <Control> 3 | Moves one page down |
| <Control> 0 | Inserts a line |
| <Control> . | Deletes a line |

The numeric keypad can be switched to a mode where it is not required to press <Control>. This mode is toggled on and off by pressing <Control> and the <-> key on the numeric keypad.

| | |
|-----------------|--------------------------------------|
| <Delete> | Deletes character at cursor position |
| <Backspace> | Deletes character to left of cursor |
| Tab | Moves cursor right eight characters |
| <Control> <Tab> | Moves cursor left eight characters |
| <Return> | Moves cursor to start of next line |
| <Enter> | Moves cursor to start of next line |
| <Esc> | Enter Direct Mode |

OTHER EDITOR COMMANDS

Also used for moving through the program and calling the block commands.

| | |
|---------------------|---------------------------------|
| <Control> <Delete> | Deletes line which cursor is on |
| <Control> U | Un-deletes line |
| <Control> Y | Deletes line which cursor is on |
| <Control> N | Inserts blank line |
| <Control> Q | Call Block menu (as <F4>) |
| <Control> B | Mark start of block |
| <Control> K | Mark end of block |
| <Control> R | Page up |
| <Control> C | Page down |
| <Control> E | Replace text |
| <Shift> <Control> E | Find replaced text |

Turn to page 46 for our guide to programming fractals in *GFA Basic 3.5*

| | |
|-----------------------|--|
| <Control> F | Find text |
| <Control> left arrow | Cursor to start of line |
| <Control> right arrow | Cursor to end of line |
| <Control> up arrow | Page up |
| <Control> down arrow | Page down |
| <Control> Clr Home | Cursor to start of program |
| <Control> P | Delete character right of cursor |
| <Control> O | Undelete text deleted with <Control> P |
| <Control> Z | Cursor to end of program |
| <Control> Tab | Cursor left eight characters |
| <Control> G | Move to line number display |

EDITOR MARKS

Used for marking positions in a program listing that need to be accessed quickly.

| | |
|---------------|---|
| <Control> n | Where n = 0 to 6 marks a position |
| <Alternate> n | Jumps to marked position n, except: Cursor to the last cursor position before RUN |
| <Alternate> 8 | To start of program |
| <Alternate> 9 | Cursor to start of last search |
| <Alternate> 0 | Cursor to position of last change |

GFA

Another program included is *GFA Assembler*. The program runs in medium and high resolutions, so everyone can use it. Using this program, you can write fast assembly language programs, and, because of its interactive Editor, *GFA Assembler* is an ideal program for the beginner and the experienced programmer.

This is not intended as an assembly language tutorial, but as a guide around the features of the *GFA Assembler* Editor to help you familiarise yourself with the program.

On the main editor screen, the top line is the status bar leaving the rest of the screen available for entering data. Lines longer than 80 characters scroll off the edge of the screen and are indicated by an arrow – clicking on the arrow scrolls the text into view. The arrow in the top left corner is the <Escape> arrow which gives you access to the menu bar. Next to this is a clock display which shows the current system time – you can set the time by pressing <F1>.

The edit mode is shown next – there are three possible modes available. Insert 1, everything to the right of the cursor is moved to the next line when <Return> is pressed. Insert 2, only the cursor moves to the next line when <Return> is pressed. Overwrite, characters are overwritten by the cursor and only the cursor moves to the next line when <Return> is pressed. Pressing <F2> or clicking on the mode display changes between modes. Finally there are the page up and down arrows, the column display and the current file name.

THE GFA BASIC MENU

BlkEnd Marks the end of code located between the two pointers inverted. The block is inverted

Replac Replaces a text string. You're first prompted to enter text to search for and then asked for some text that this should be replaced with

Find Finds a text string

Pg up Scrolls listing up one page

Pg down Scrolls listing down a page

Insert Inserts a blank line into the listing so that you can add a new command into the middle of your program code

Direct Switches to direct mode. Here, you can type commands directly

| | | | | | | | | |
|---------|-------|-------|--------|--------|------|--------|------|----------|
| Save, A | Quit | New | BlkSta | Replac | Pg ↑ | Direct | Run | 19:44:42 |
| Merge | Llist | Block | BlkEnd | Find | Pg ↓ | Insert | Flip | Test |

into *GFA*. For example, Print A\$ would show you the contents of A\$. This is useful when debugging a program

Flip Flips to the program screen so that you see the last display achieved by the program

Run Runs the program currently held in memory. Note that a Test is carried out first. Any errors encountered are reported and the program is not executed

Test This tests syntax and also checks that procedures and loops are correctly entered and exited. A test is automatically carried out before you Run a program

Clock Shows current clock time. It updates every two seconds.

Line number Shows the current line number that you're editing. Click here and type in a number directly to go to a specific line number in your program

Each of the menu items can also be called up by hitting the corresponding function key. To call up items in the top row, hold down <Shift> and then hit the corresponding function key. Hit the function key on its own to get the items located in the bottom row. For example, Load is <F1> while Save has the keyboard equivalent of <Shift> + <F1>. Simple really.

IT'S A GOOD

The main screen area shows the files present in the current path.

<Escape> arrow This key takes you to the main assembly editor after a file is loaded

File name The current file selected or in memory

Status The current operation in progress

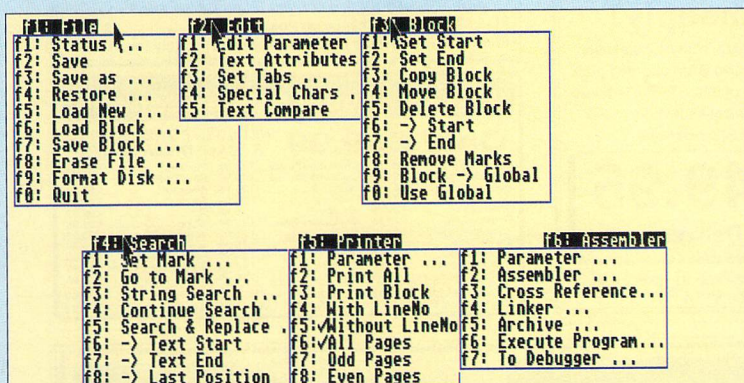
Page up/down Pages the file listing if more than 69 files are in the current path

Bytes free Amount of free space on the current disk

Assembler

WHAT'S ON THE MENUS

All the functions of *GFA Assembler* can be accessed via the drop down menus. Each menu and menu option can also be called up by pressing a function key



● The complete set of menu options offered by *GFA Assembler*.

THE FILE MENU

- F1 Current status of file in memory
- F2 Save file to disk in directory
- F3 Save file with new name or to new directory
- F4 Reloads last saved version of current file
- F5 Loads new file
- F6 Loads a block of data to the present cursor position
- F7 Saves a marked block to disk
- F8 Erase file from disk
- F9 Formats disk
- F0 Exits *GFA Assembler*

THE EDIT MENU

- F1 Adjust program setup
- F2 Switches between *Assembler* and *ASCII* editing modes
- F3 Sets up tabs
- F4 Enables entire character set to be used

- F5 Compares two texts to each other in order to find differences

THE BLOCK MENU

- F1 Marks start of block
- F2 Marks end of block
- F3 Copies marked block to present cursor position
- F4 Moves marked block to present cursor position
- F5 Erases marked block, can be undone by pressing <Undo>
- F6 Cursor moved to the beginning of a marked block
- F7 Cursor moved to the end of a marked block
- F8 Unmarks block
- F9 This enables blocks to be copied to other files that are already in memory
- F0 Global block can be copied into current text

THE SEARCH MENU

- F1 Makes a mark at a set position to be moved to by a set keystroke
- F2 Moves cursor to a set mark
- F3 Searches for a string of text
- F4 Continues search for further matches
- F5 Replaces an old string with a new string
- F6 Moves to beginning of text segment
- F7 Moves to end of text segment
- F8 Moves to the previous cursor position

THE PRINTER MENU

- F1 Sets printer parameters
- F2 Prints all text in memory
- F3 Prints a marked block of text
- F4 Enables line numbers on a printout

- F5 Disables line numbers on a printout
- F6 Prints all pages
- F7 Prints all odd numbered pages
- F8 Prints all the even numbered pages

THE ASSEMBLER MENU

- F1 Sets up general assembly parameters
- F2 Assembles file in memory
- F3 Creates a cross-reference list
- F4 Links external code into a program
- F5 Used to create a library of routines
- F6 Loads and runs an external program
- F7 Calls the memory resident debugger

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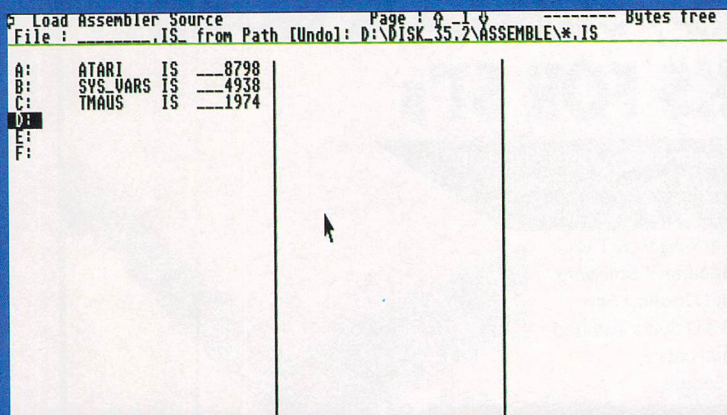
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VIEW FROM UP HERE



● This is the first screen you encounter when you load *GFA Assembly*. Don't be put off by it though – it offers you an option to check certain statistics.

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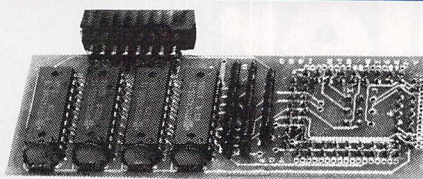
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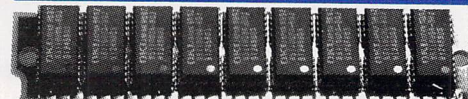
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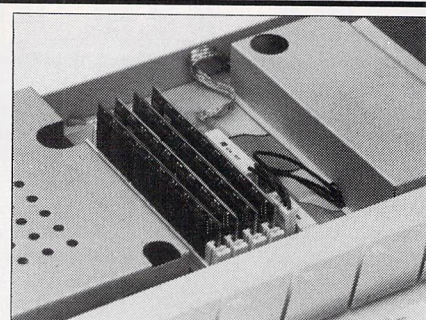
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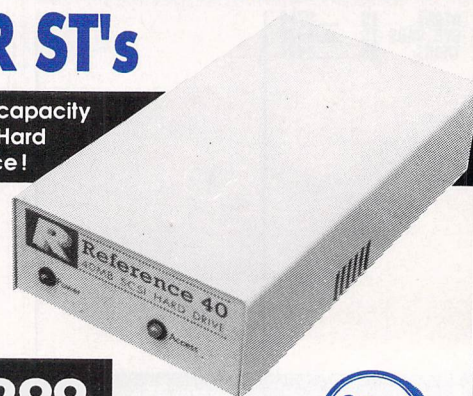
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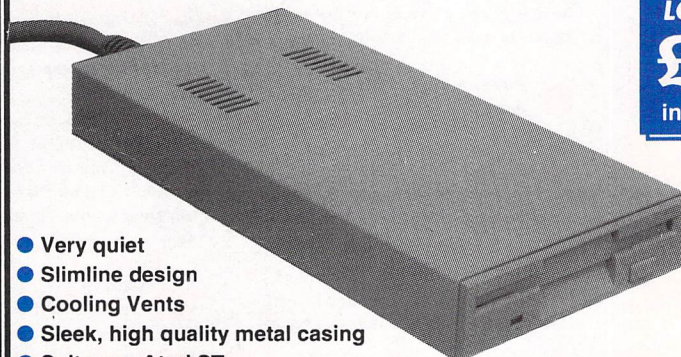
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Cover Disk 35

A fanfare, a roll on the drums, a largish crowd running around shouting... Yes, it's time for Chris Lloyd to forge a path through this month's glorious collection of software, lovingly culled from all over the shop and expertly compiled onto *ST FORMAT's* legendary Disk

It's got what?

Pacific Islands – Get seriously tank-like with this mission from Empire's state-of-the-art battle sim.

Astrocalc 22 – Exclusive version! Roll your own birth wheels and find out who you really are. **Page 18**

● See this issue's special ST astrology feature on page 116

Super Card 2 – Latest version of the fully configurable database with a zillion functions. **Page 16**

Thingy – Get hypnotised with this wacky thingy from Mr Whackiness himself, Jeff Minter. **Page 17**

● See our interview on page 51

Trip-A-Tron Utilities – Utility for defining maps and wave forms for Jeff Minter's light synth. **Page 17**

Eyes – Invite a friend to stay on your Desktop with this frivolous Desktop Accessory. **Page 18**

GFA Draft Utilities – Four programs to help you get more out of GFA Draft Plus. **Page 17**

● GFA Draft Plus was yours last issue – see page 44 if you missed it.

Populous 2 Cheat – See every corner of the world in the god of god-games. **Page 18**

Chaos Source Code – Enter the fascinating realm of fractals with these GFA Basic 3.5 listings. **Page 17**

● See Create Chaos on page 46

Assembler Source Code – Indispensable assembly listings **Page 17**

● For full details, go to page 72

Back-Up – No hassles backing up the Disk with this foolproof utility.

Pacific Islands

BY: EMPIRE

RESOLUTION: LOW ONLY

FOLDER: ISLANDS

FILES: TY2.TOS and data folder

READ: BACK_UP.DOC

GET STARTED WITH: TY2.TOS

We've all fantasised about being in control of 54 tons of heavy metal, haven't we? Clanking around the countryside keeping the world free from those commies. Not the Russians, of course; they're now our comrades and not communist at all. No, these

are those other Reds – you know, the bad ones. *Pacific Islands* is a state-of-the-art tank sim, putting you in control of four platoons of expensive American hardware. The Cover Disk demo is a complete training mission with plenty of opportunities for the odd spot of mayhem and blasting.

To get going, double-click on TY2.TOS inside the ISLANDS folder

WHERE YOU ARE ON THE MAP SCREEN

This is the main map where you can move your tanks about. Just click on the map and a little cross appears. Then you just select a speed using the slider and off you trundle

1 **Platoons** – Click on these to switch between your chaps

2 **ETA** – Once you've set your destination and speed, this tells you your estimated time of arrival

3 **Cash** – Important for some obscure reason to your commanders, who get upset when you blow a few million in some spectacular explosions

4 **Map scroll** – Use the little arrows to move round the map

5 **Surrender** – Get real! You'd never do that, would you? Better to die horribly in a burning tank! Us men are so tough, eh?

6 **Pause** – Well this sort of pauses you, really

7 **Zoom** – Click on these two to zoom in and out of the map. The number in between is the current zoom

8 **Formations** – Click on one of these to choose your platoon's formation – single file means faster

travel along the roads. The two top icons dictate the groups' spacing

9 **Time** – Most missions have got a time limit, so don't dawdle about shooting the tree for too long. In this preview of *Pacific Islands* you have an entirely ample 40 minutes in which to win

10 **Morale** – Our bar is taller, so we can see that our morale is higher than those nasty commies – yee har!

11 **Dead stop** – Just that. Brings the platoon into a "non-movement mode"

12 **Speed** – Click on this to select a platoon's speed. Even the huge main battle tanks can move pretty quickly, particularly on the roads

13 **Gold shape** – Your rank – shows how high up you are in the scheme of things



FOR FULL DETAILS OF THIS ISSUE'S FANTASTIC SECOND DISK,

EVERYTHING YOU REALLY NEED TO KNOW BEFORE YOU BEGIN

Protect and survive!

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

Read all about it!

Space on the Cover Disk pages is limited, so you may often find text files on the Disk with more information. These have the file extension DOC – the three

letters after the full stop. It's always a good idea to read these for more information on the program. Just double-click on them and select Show to display the text on-screen. If you find that half the text disappears off the right-hand side of the screen when you try to read a DOC file in low resolution, then change to medium resolution and try again.

Back it up – the easy way!

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

Because we use a special disk for-

mat to squeeze even more goodies onto the Disk, you can't do a direct disk to disk copy – you can't just drag the Floppy Drive A icon over the Floppy Drive B icon. But fear not: we've made life easy for you with a specially-commissioned backup program. Just follow the instructions below and you can't go wrong! Now there's no need to risk damaging the data on your original Cover Disk or losing it ever again!

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

Single-sided drive?

ST FORMAT is now using a double-sided disk format. If you are one of the few ST owners still with a single-sided internal drive and no external drive, then you're out of luck – you can't read STF Cover Disks, or, for that matter, virtually any current software. This is because single-sided drives are now obsolete, and it is well worth upgrading. Replacement drives are cheap – as little as £35 – and easy to fit. At a stroke you can double the storage capacity of your disks. We brought you a detailed guide to fitting new internal drives in STF 32 – turn to page 44 to order it if you missed it.

and prepare to enter battle. On the first screen, click on one of the names from the filing cabinet and enter your own name. Make sure you run the demo from a back-up copy of the Cover Disk – there's no excuse not to, with our *Back-up* program. Leave your disk write-enabled (with the little black tab blocking the hole) and your commander is saved to disk. Right, then, after typing in your name, click on the imaginatively-titled Play icon to play.

Next comes a piccie of the island to be conquered. Follow the instructions and you're sent to the Weapons Selection screen. It's probably best to accept the default settings – you get a full load of monsters to terrorise the locals with. Nearly there: click on the icon at the top left to enter the briefing session and, from there, the training session for real. Now, we want a good clean mission. Watch out for "friendly fire" and too much "collateral damage." (In other words, try not to kill your own men or blow up the local hospital – war is hell, eh?) Good luck!



● **You want something economical and easy to park, but comfy on a long trip? Sorry, we've nothing like that – but how about something good at demolishing shops and making everyone else go on long trips?**



● **The briefing screen. Click on the little red arrow at the bottom for more information and the eye icon at the top for the details on your mission. Then just blow the hell out of them!**

Cover Disk Back-Up

BY: BRIAN TILLEY

RESOLUTION: ALL RESOLUTIONS

FOLDER: BACK_UP

FILES: BACK_UP.TOS,

BACK_UP.DOC

READ: BACK_UP.DOC

GET STARTED WITH: BACK_UP.TOS

Backing up your valuable STF Cover Disks can be a bit of a pain, right? All that mucking about dragging folders to drive B and swapping disks. We thought so too, so here's a little chap who does the fiddly bits for you. Now before you do anything, write-protect your original Cover Disk – move the little black tab so you can see through the hole. This stops anything untoward happening, because nothing can be written to it. Now get a new disk ready – it doesn't have to be formatted (*Back-Up* does that for you), but ensure you don't mind losing all the data on it. Then double-

click on BACK_UP.TOS to run *Back-Up*. From the menu press <1> and off you go, swapping disks when prompted.

To minimise disk swap, *Back-Up* uses all your ST's available memory. If you have over 1MByte of RAM you can do everything with one disk swap. The source disk is the disk you are making the copy of – the Cover Disk. The destination disk is the intended back-up disk. If you have two drives, drive A is the source and drive B the destination.

Back-Up can also be used to back up other disks. To see if this is possible with a particular disk, load the program, press <2>, and then, when prompted, insert the disk you want to copy. *Back-Up* tells you if it can do the job. Don't expect to be able to copy commercial games, though – they use all sorts of clever tricks to stop you doing this.

Now there's no excuse for not doing a backup – it saves a lot of teeth gnashing if you should ruin the disk.

GFA Chaos listings

BY: CONRAD BESSANT

RESOLUTION: LOW OR HIGH

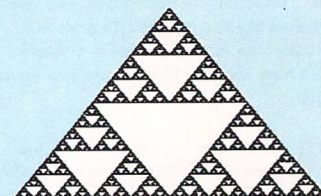
FOLDER: CHAOS

FILES: SERP_HI.GFA, SERP_LO.GFA

TO GET STARTED: Load into GFA

Basic v3.5 on the second Cover Disk

This month we start a programming series involving the fascinating world of integrated functions and fractals. Er, what? Better check out page 46 for the first instalment and an explanation. The source code you need is written using the powerful GFA Basic v3.5, which is yours on this issue's second Cover Disk. If you're using a high resolution monitor, then load in SERP_HI.GFA; if you have a colour monitor or TV wired up, then make sure you are in low reso-



● **To go with the first section of our fractal programming series are two GFA Basic listings that draw these creatures. This may look like a triangle made of smaller triangles but it actually involves a very clever bit of mathematical iteration that creates – er, a triangle made of smaller triangles.**

lution and load in SERP_LO.GFA. The programs draw something called a Sierpinski triangle.



● **See that burning tank? That's your tank, that's where you live, that is. *Pacific Islands* puts some nasty equipment into your control. For details of all those techie-looking controls, have a look at our review on page 90.**

SEE PAGE 6. NEXT ISSUE: YET ANOTHER COMPLETE PACKAGE!

Super Card 2

BY: B WARE

RESOLUTION: HIGH OR MEDIUM

FOLDER: CARD 2

FILES: S_CARD_2.PRG,

READ_ME.NOW

READ: READ_ME.NOW

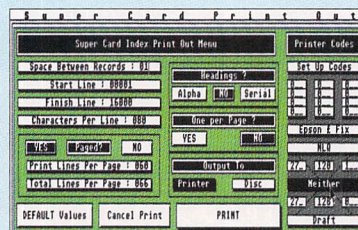
TO GET STARTED: SEE BELOW

Super Card 2 is a versatile and powerful card-based database. Each card can hold up to 32,000 characters and 16,000 lines – more than you're ever going to need, probably. There is no set field size or layout restrictions. You can input any data you want in any order, and each card can be individually tailored. Cards can be sorted into ascending or descending order and searched through using a comprehensive filtering system. Up to 20 macros can be defined, you can read disk directories directly into the database,

read and save ASCII files, encode files and more. Phew! Isn't that feature-packed or what?

To squash more programs than you can shake a small bundle of sticks at on our Cover Disk, *Super Card* has been specially archived. This is a method of compressing lots of files together into one file. Have a spare formatted disk ready and run S_CARD_2.PRG. When prompted, insert your new disk. After formatting, the program automatically decompresses all the files you need and writes them onto your new disk. Bingo! You now have a working version of *Super Card*.

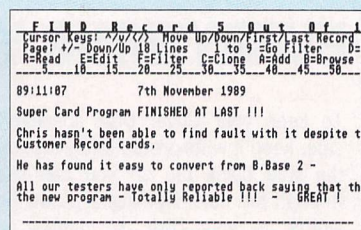
This is the latest version – everything is fully working. The only restriction is a small sulk every now and again and an upper limit of 100 cards. If you register for an oh-so-reasonable five to 15 quids you can install a magic number and the pauses and card limit dis-



● The printer control menu – from here you can set things up and arrange how you want the final output to look. It's all self explanatory – you can print any group of cards laid out to suit.

appear. You also get manuals and disks of goodies. Check out the READ_ME.TXT text file for more details. As with most powerful applications, it's worth getting hold of the manual to get the most out of *SuperCard*.

After you've loaded the main program, you are greeted by a setup screen where you can select the maximum number of records and whether you want backup files of your data.



● The card screen. The keyboard commands are displayed at the top. The cursor keys move through the records on the Find screens or move the cursor about the record on the Edit screen.

Then it's on to the main event. It might look a little daunting at first, but all the functions are simple to use and, once mastered, make manipulating data a real doddle.

ON TODAY'S MENU

1 Add – Add a new card to your database – just type it in. The keyboard controls for this section are shown at the top of the screen.

2 Edit/read – Take a look at or edit the cards in the currently loaded database. Clicking here brings up the filter menu to narrow down the selection of cards you want to look at.

3 Sort – Puts your cards into alphabetical order, ascending or descending.

4 Print – After tangling with the filter menu to sort out which cards you want, you find yourself at the printer control menu.

5 Rename title – If you don't fancy the title of the database much, click here to give it a new one.

6 Details on data loaded – This information box shows you the title of the file loaded, its disk file name, how many records it contains and how much free memory you've got left.

7 New – Clears a database from memory – have you saved first?

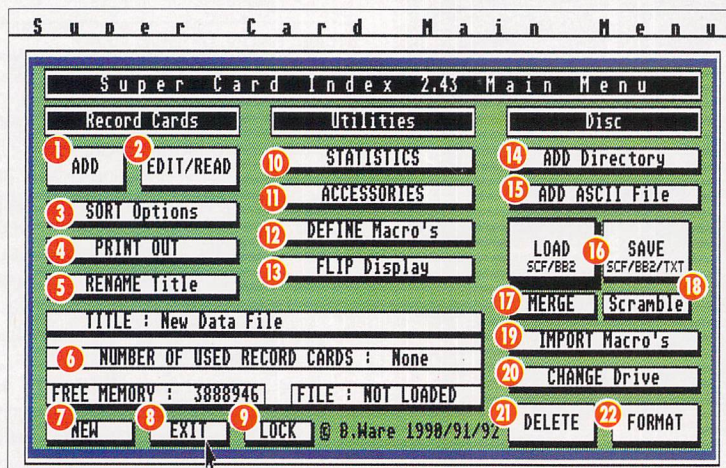
8 Exit – Had enough? Click here.

9 Lock – Adds a code to stop people from fiddling with the program.

10 Statistics – Gives you a lowdown on your database after fiddling with the filter screen.

11 Accessories – Enables you to get at any of the Desk Accessories you have loaded. Simply select "Return To Main Menu" to get back to *Super Card*.

Super Card's main menu – where all the action happens. Just click on a button with the mouse and away you jolly well go



12 Define Macros – This handy function can save a heap of typing. Assign any common bits of text to one of the Function keys. Whenever you want to add into your card, tap the appropriate Function key – now, that's handy.

13 Flip screen – Inverts the screen colours if you fancy doing that.

14 Add directory – Reads in the files on a disk into a card. Makes cataloguing a disk collection a piece of cake.

15 Add ASCII file – Imports a standard text file. All halfway decent word processors have the option to save text as an ASCII file, so you can import virtually anything into a *Super Card* database.

16 Load and Save – Click here to load or save data files. These end with "SCF." There are a few examples on the disk. Try loading them in and having a read first. Before you can save a file, you see the filter menu.

17 Merge – Turns two database files into one. Just use the fileselector to add a file to the one that's held in memory.

18 Scramble – Enables you to keep that data safe from unwanted eyes by adding an eight-character code. Don't forget it.

19 Import macros – Enables you to load in the macros defined for another database file – no need to type it all in again.

20 Change drive – If you have two disk drives or a hard drive, you can tell *Super Card* to look there for files rather than Drive A.

21 Delete – Zaps a database from disk – use with caution!

22 Format – Formats the disk. For God's sake, be careful out there. Clicking on this kills everything on the disk and there's no chance of getting it back, so do make sure there's nothing of value on it.

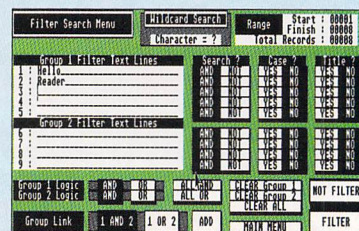
IT'S A WHAT?

A database is a method of storing data. The data can be anything you want – your fluff collection, a list of addresses, details of every episode of *Star Trek*. The data is held in records or cards. These can be sorted into order and searched through so you can get at any information held in the database.

FINE FILTER

The filter menu looks hideously complex, but it isn't really, much. If you want to just look at the records in order, click on Not Filter. To narrow down the selection, type in the bit you want into the Filter Text Line. If you are looking for records that contain a reference to Spock, then type that in. The Search? buttons dictate the logic of the search: And includes all the records with the search string, Not selects those without it. Case? selects whether you want the search to take capital letters into account or not. Title? determines if the card should start with the search string or not.

There are two groups of search strings to narrow things down a bit further – these can be combined in a number of ways using logic gates. 1 AND 2 means both sets must be satisfied; 1 OR 2 means one or the other. The search strings in each group are managed in the same way. When things are all set up, click on Filter and *Super Card* does its stuff and sorts it out for you. You're then presented with the first record that meets the filter. The keyboard commands for this section appear at the top of the screen. Just press the right and left cursor keys to move through the selected records. Once you get to grips with the powerful filtering system, you can easily get at all the cards you want. Neat, eh?



● Don't those options look scary? But they're not – see above for details.

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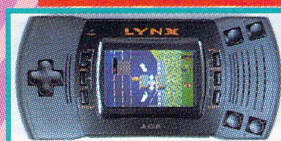
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GFA DRAFT UTILITIES

On the stonkingly good value *ST FORMAT* last month, we brought you the complete and latest version of the state-of-the-art 2D Computer Aided Design program *GFA Draft Plus*, capable of knocking out professional quality drawings. If you missed out, then start sulking now – or you could turn to page 44 and check out our back issue service.

This issue we're giving you still more – a couple of useful utilities to help you get even more out of *GFA Draft Plus*.

GFA Draft to DXF Convertors

BY: GFA

RESOLUTION: HIGH OR MEDIUM

FOLDER: GFA DRAFT

FILES: DR3DXF.BAS,

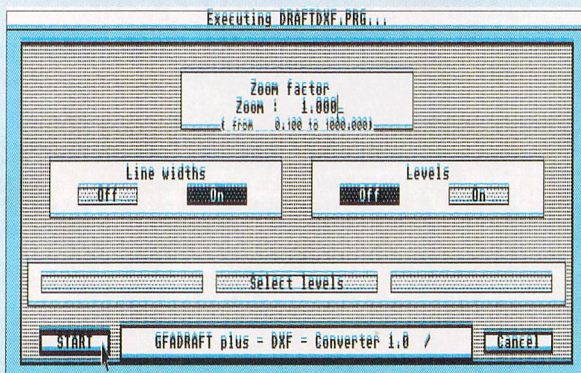
DRAFTDXF.PRG, DXFDRAFT.PRG

TO GET STARTED: SEE BELOW

If you want to import files from other Computer Aided Design programs or export files from *GFA Draft Plus*, then these two little utilities can easily do the trick for you. They convert between *GFA Draft Plus* and DXF format

files. You need GFADRAFT.INF from last month's *GFA Draft Plus* Cover Disk in the same directory and folder as the drawings you want to be converted. DXF to Draft conversion is then just a simple matter of entering the name of the picture to be converted.

For Draft to DXF file conversion, you need to click on Select Levels in order to assign the levels to be saved. You can also suppress the display of line widths and choose a zoom factor should you want to enlarge or shrink the picture.



● Being able to convert from *GFA Draft Plus* to DXF format and vice versa gives you access to a whole mass of files from other machines.

Metafile Convertor

BY: GFA

RESOLUTION: HIGH OR MEDIUM

FOLDER: GFA DRAFT

FILE: META.PRG

TO GET STARTED: SEE BELOW

A **GEM metafile** is a resolution-independent picture format that can be resized without any distortion. Most of the better desktop publishing packages and a good few word processors are able to load them in and print them. This metafile convertor converts your

GFA Draft Plus files into metafiles. Make sure that you've got the files ASCII and GFADRAFT.INF in the same directory. GDOS, Atari's program for controlling graphical output to screen and printer, also needs to be installed, along with META.SYS.

GDOS comes with programs such as *Timeworks* and *Hyperpaint* or alternatively they can be bought separately from Atari (☎ 0753 533344). The controls for metafile conversion are almost identical for those you have to use for printing.

File Splitter

BY: GFA

RESOLUTION: HIGH OR MEDIUM

FOLDER: GFA DRAFT

FILE: SPLIT.PRG

TO GET STARTED: SEE BELOW

After converting a DXF file you may find the result is over the 64K limit for

GFA Draft Plus – or a drawing may just grow too large and generate "Out of memory" messages. *Split* lives up to its name and chops these outsized files down to a more manageable size. All you have to do is select the file to be split and a number of smaller sections is automatically created.

Trip-A-Tron Map and Wave Definer

BY: ANDY MORRISON AND FERGUS PARTRIDGE

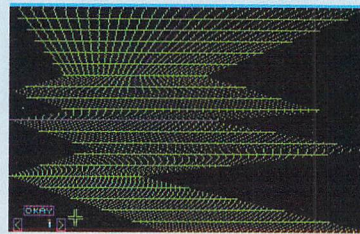
RESOLUTION: LOW ONLY

FOLDER: TRIP

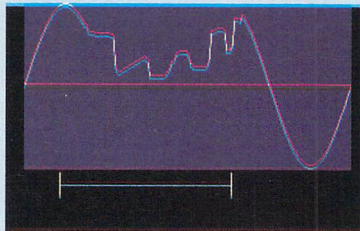
FILE: UTIL.KML

TO GET STARTED: Load into *Trip-A-Tron* (not included)

That nice Mr Minter character created a program called *Trip-A-Tron* and with it a whole new breed of software. *Trip-A-Tron* (£34.95 Llamasoft ☎ 0734 814478) is a light synth – it creates beautiful visual effects and can be "played" like a musical instrument. It's a difficult program to describe but looks stunning, with flowing iridescent patterns – real wow material. Among its tricks are maps and waves. Waves are used to modulate all kinds of effects. Maps can be used to remap screens onto objects and can create eye-popping transformations. The editing program for the waveforms can be a bit limiting and there's none for those juicy map files. Now, two dudes from Light Synth Displays have got to grips with things and produced this number which makes both a doddle. Load the UTIL.KML file into *Trip-A-Tron* and press the number keys on the main keyboard



● A finished map ready for optical jangling. Press <M> for the definer, then click with the mouse in constrained mode to define areas. The program does the maths for you – choose what shape you want and away you go.



● Weird waves? No problem. Press <1> to <8> on the keyboard to select a waveform. Click to select the start point and again for the end point, then draw the new wave with the mouse.

to edit the waves or <M> to create a map. Once finished, don't forget to save the respective files.

Thingy

BY: JEFF MINTER

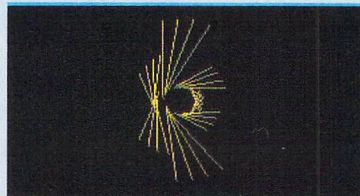
RESOLUTION: LOW ONLY

FOLDER: THINGY

FILES: THINGY.PRG, PINKFLOY.D

GET STARTED WITH: THINGY.PRG

Thingy is a flashing graphical pattern... er, thingy. After loading it looks for a file called PINKFLOY.D, which holds all the preset patterns. Try pressing a few keys – go on! Start with <D> or <G> or even <Q>. Moving the mouse around changes the parameters of the pattern, and holding down one of the buttons while doing it changes another set of parameters. Have a good experiment! When you find a pattern you like, you can assign it to one



● *Thingy* doesn't look like much here, but imagine the pattern moving about, transforming itself and flashing in a lots-of-colours type way. But why not actually run it and see for yourself!

of the keys by pressing <Shift> and that key. You can then recall the pattern by just pressing that key. Hitting the <#> key saves all your patterns to disk as a new PINKFLOY.D file. Don't do this on your original Cover Disk – you wouldn't want anything untoward to happen to it, would you? Have fun!

Assembler source code

BY: ROGER PEARSON

RESOLUTION: ALL RESOLUTIONS

FOLDER: ASSEMBLE

FILES: DEGAS_SV.S, PASSWORD.S

TO GET STARTED: SEE BELOW

In this month's thrilling instalment of *ST Answers*, there's a picturesque little section called Assembly Pointers. Here we delve into the murky world of flags,

addresses and stacks. All of this sounds distinctly strange, but it is apparently meaningful to a group called "assembly programmers." The source code on the Cover Disk deals with saving a *Degas* compatible screen to disk and setting up a password protection system. If you belong to the "assembly programmers" group, then take a look at page 72.

PROBLEMS? WHERE TO FIND HELP

1. MY COVER DISK WON'T LOAD!

Before anything else, check that you don't have a single-sided drive (one older than 1988, that can't format any disks to more than 360K) – they can't read new **ST FORMAT** Cover Disks. Single-sided drives are obsolete and it's well worth upgrading. Replacement drives are easy to fit and cost as little as £35. We covered fitting new internal drives in **STF 32** – turn to page 44 to order a copy if you missed it.

Drive okay, but still no joy? **ST FORMAT** duplicates hundreds of thousands of Disks every month. Inevitably a few are defective or damaged in some way – the Disk just won't load, or you can't open a window at all, or there's nothing in it, or the folder names are gobbledegook. It doesn't happen often, but if you're unlucky, sorry. You're guaranteed a free replacement if you return the Disk to:

ST FORMAT June Cover Disk Returns, TIB plc, 36-50 Adelaide Street, Bradford, Yorkshire BD5 0EA.

Enclose a sturdy self-addressed envelope (unstamped – we'll pay the postage) and a brief letter explaining the problem. TIB promise to replace your defective Disk within one week of receiving it. (If you're worried about trusting your precious Disk to the mails, the Royal Mail's Recorded Delivery service costs only 30p on top of the normal postage.)

Please don't send your defective Disk to any other address – we have no stocks of Disks in Bath.

2. THIS COVER DISK PROGRAM DOESN'T LOAD!

If only part of your Disk won't load, TIB invite you to ring their Cover Disk Helpline and talk through your problem before you send back a perfectly good Disk. Telephone 0274 736990 during normal office hours and ask for Sam Hiah, **ST FORMAT** Cover Disk Helpline.

3. I CAN'T WORK OUT THIS COVER DISK PROGRAM!

Your Disk seems okay, everything loads, but you've got a problem with one of the programs. Make sure you've read all the relevant Cover Disk pages and any document files on the Disk. Try consulting your **ST Owner's manual** – that may have the information you need. Still got a problem? Then give us a ring on Wednesday afternoon. Telephone the **ST FORMAT** Cover Disk Hotline ☎ 0225 442244 on Wednesday 2 – 6 pm only.

We don't write the Cover Disk programs ourselves and don't know as much about them as the programmers, but we'll do our best to sort your problem out.

Please note that this line is for Cover Disk problems only. If you have any other queries, read on!

4. I CAN'T WORK OUT THIS OTHER PROGRAM I'VE BOUGHT!

The best place to start is the distributor of the program. Most software houses run some kind of helpline service – check the bump that came with your software for the number.

5. I'VE GOT AN ST PROBLEM!

If you've still got a problem – you suspect your machine may be faulty, or you're not sure about some procedure, or you need an answer to a more general query – then you have two options.

(a) Ring the official Atari Helpline ☎ 031 332 9323 on any weekday 8 am – 11 pm.

(b) Write to **ST Answers** using the Freepost coupon on page 73 – you don't even have to pay postage! – and let **ST FORMAT's** team of experts tackle your problem in the pages of **STF**. We guarantee to reply to every query we receive as soon as space is available.

THE COVER DISK NEEDS YOU

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

Name

Address

Daytime phone

Program title Total size in K

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

Don't forget 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 wads of cash. We pay well for programs we use, but our poll tax is overdue.

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

Astrocalc 22

BY: D K WILKINSON

RESOLUTION: HIGH OR MEDIUM

FOLDER: ASTRO

FILES: ASTRO.TOS, COLOUR.TOS, MONO.TOS

TO GET STARTED: SEE BELOW

Love it or hate it, astrology is becoming increasingly popular. **Astrocalc 22** can make a good job of it too, drawing your birth chart and doing a spot of interpretation, giving you an insight into the target's character.

Be warned: you can't run **Astrocalc 22** directly from the Cover Disk – the program would have taken up most of the Disk, so we've compressed it into three files. This is what you need to do.

1. Get a blank formatted disk and copy the file **ASTRO.TOS** to it. If you are going to be using a colour monitor or TV, then copy across **COLOUR.TOS** as well. If you have a high resolution monitor wired up to your ST, then copy across **MONO.TOS** instead.

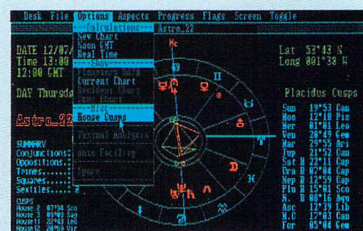
2. Now run both of the programs. They decompress the files you need automatically. Be patient – there's an awful lot of them.

3. Once the programs you need are

decompressed, turn off your ST, then switch it back on with your new **Astrocalc** master disk in the drive. This is to make sure all the Desk Accessories **Astrocalc** needs are properly loaded.

For details on entering the strange world of planetary aspects and houses, see the guide on using **Astrocalc** in our astrology feature starting on page 116. And take that sceptical look of your face – you may well be surprised.

● Although we've tested the self-extracting archives, it can still cause problems because there are so many files involved. Ensure you only have the two files you need on an otherwise blank disk. If things don't work, try again. Then, if you still have problems, ring the TIB Cover Disk Helpline ☎ 0274 736990.



● **Astrocalc 22** is a powerful astrology program that generates and interprets a birth chart. Also included is a Desk Accessory to set up your printer for a hardcopy of your natal wheel.

Eyes

BY: JASON DOBBS

RESOLUTION: ALL RESOLUTIONS

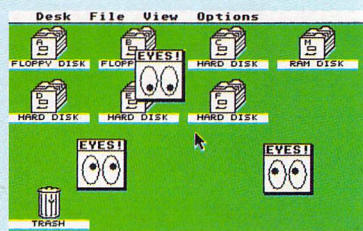
FOLDER: EYES

FILES: EYES.ACC, EYES.DOC

READ: EYES.DOC

TO GET STARTED: SEE BELOW

Eyes is a pointless bit of fun – little eyes on your Desktop follow your mouse around. It's a Desk Accessory, so your ST loads it in when it is first switched on. Copy the **EYES.ACC** file to the root directory of a formatted disk – that is, not in any folders – and switch on with that disk in the drive. Done



● Isn't he cute? **Eyes** puts a little friend on your Desktop. If you make two copies of **EYES.ACC** you can have two sets of eyeballs, or more. That? Right then, select **EYES!** from the Desk menu and up pops a little box. Select Open and click on the box with the eyes in on the right and up they pop on your Desktop. To put them to sleep again, just select Close.

Populous 2 Code Generator

BY: CHRIS BROOKES

RESOLUTION: ALL RESOLUTIONS

FOLDER: POP2CODE

FILES: CODES.DAT,

POP2CODE.PRG, README.DOC

READ: README.DOC

GET STARTED WITH:

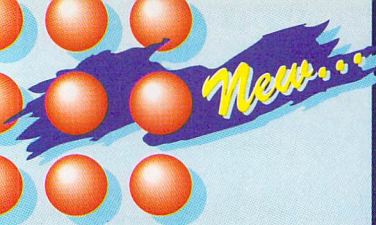
POP2CODE.PRG

If you fancy a bout of playing god and interfering with the lives of poor mortals, then **Populous 2** is the game to do it with, scoring a massive 95% rating when reviewed in **ST FORMAT 30**. Stun-

| | | | | | |
|----|---------|----|--------|----|--------|
| 0 | BUEGAL | 24 | VEPEAR | 48 | PEHE |
| 1 | BAWDAK | 25 | TIHDAK | 49 | SUSOAK |
| 2 | LONEAL | 26 | UXCLAF | 50 | ERTUAK |
| 3 | SCMEAB | 27 | IMAT | 51 | ITADAT |
| 4 | OPJLAD | 28 | PDISAC | 52 | ESLAD |
| 5 | AKSUAF | 29 | MIUPAK | 53 | CUKAD |
| 6 | APL YAG | 30 | ETHAB | 54 | ITODAD |
| 7 | AGLIAC | 31 | SOERAB | 55 | HNFE |
| 8 | OPOAK | 32 | LDHAP | 56 | PEHAK |
| 9 | UMHEAB | 33 | NO IAC | 57 | NETAK |
| 10 | THODAD | 34 | ABAL | 58 | ISAFAT |
| 11 | UBTUAF | 35 | ADUAK | 59 | ITUNAD |
| 12 | DEAK | 36 | ADUAK | 60 | ITUNAD |
| 13 | UJESTAC | 37 | AFEGAB | 61 | JTPE |
| 14 | UJESTAC | 38 | AFEGAB | 62 | JTPE |
| 15 | UJESTAC | 39 | AFEGAB | 63 | JTPE |
| 16 | UJESTAC | 40 | AFEGAB | 64 | JTPE |
| 17 | UJESTAC | 41 | AFEGAB | 65 | JTPE |
| 18 | UJESTAC | 42 | AFEGAB | 66 | JTPE |
| 19 | UJESTAC | 43 | AFEGAB | 67 | JTPE |

● Level codes eh? Don'tcha love 'em? (No I don't – 'specially not Lemmings ones – Ed.) Every world of **Populous 2** is now yours to choose from.

ning stuff indeed. To get to each of the thousand worlds, you need the password. Getting to the end could take a bit of time and effort, even if you are god. This neat program gives you the codes, all of them. Now, isn't that benign?



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| CITIZEN | DOT MATRIX PRINTERS | No. Pins | DPI | SPEED | Dot/Min | No. Fonts | Bigger | Columns | |
|------------------|---------------------|----------|--------|-------|---------|-----------|--------|---------|---------|
| 1200+ Mono | 9 | 240 | 120/25 | 2 | 4 | 80 | | | £139.99 |
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| 124D/Swift24 | | |
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● Atari to exploit games potential of STE ● FSM GDOS ready for release in UK ● Developers writing for MultiTOS

Atari take the lead with STE-only games

by Clive Parker

Since the release of the STE over three years ago, we've been waiting to see new games which take advantage of all the enhanced features of this incredible machine. Atari are now finally taking the lead and writing a series of games which fully exploit the potential of the STE.

According to Product Manager, Bob Katz, the decision to produce STE-only games came from the top. Sam Tramiel, boss of Atari US, wanted to produce STE-only games in a move to increase programmers' awareness of the hardware potential of the machine.

Atari have acquired the rights to several major coin-op games to convert for use on the STE only, taking full advantage of the machines' custom hardware. The first two games to be converted are *Road Riot Four Wheel Drive*, an off-road driving game, and *Steel Talons*, a 3D polygon based helicopter simulator. The arcade

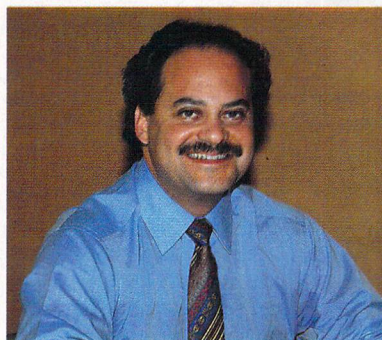
coin-ops use 256 colour hardware graphics boards. Although the STE comes with a palette of 512 colours, only 16 can be displayed on-screen at once. Atari are, however, using a palette-switching technique in order to overcome this hurdle and give 48 colours per line – doing this achieves an accurate representation of the arcade graphics.

The games will take full advantage of the blitter chip to shift graphics around the screen at high speed and they will come with full 8-channel DMA stereo sound.

More importantly, the STE's built in hardware scrolling abilities will be supported, so these games are certain to be some of the fastest you've ever seen on the ST. Each game is to be fully compatible with the Mega STE and TT range, automatically detecting which type of machine it is running on and adjusting itself to take advantage of increased clock speeds and the TT's 68030 processor. Bob Katz said "These games will be the first that really thrash the STE's hardware."

The games are being developed under the Atari Games umbrella and they will only be produced for Atari machines, with no other formats planned for release. Each game has a dedicated development team working on it.

More STE-only games are planned for the future – both coin-



● Sam Tramiel wants to produce STE-only games to increase awareness of the hardware potential of the machine.

op conversions and original designs. If Atari are able to prove that there is an eager and enthusiastic market for STE-only games, other software publishers are much more likely to follow suit.

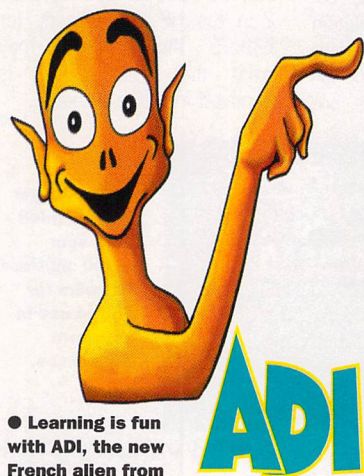
EXCLUSIVE

BITS...

● Genlock Ltd have taken over the distribution of the German genlocks from GST. You need one of these devices if you want to mix your ST graphics over the top of video as is done on the TV. They come in two varieties: the STPAL for £249.99 and the STPAL-YC – which can handle Super VHS – for £279.99. Both work on STEs and STFMs, although the FM version needs an adaptor over your video shifter chip. Genlock are on ☎ 0257 472866.

● Kuma have just released *C-manship Complete* – a book to help you learn C, the trendy, but difficult to learn, programming language that can produce powerful and fast programs. It leads you from the basics through to complex GEM applications. Gemming up on C will set you back £14.95. Contact Kuma on ☎ 0734 844335.

● Microprose have just signed up Spectrum Holobyte and will be distributing their games in the coming months. They're the team who programmed the definitive ST flight sim, *Falcon*. The titles you can look forward to include *Super Tetris*.



● Learning is fun with ADI, the new French alien from Europress.

Teachers from space

A new range of educational software from Europress Software (☎ 0625 859333) promises to add some character into lessons on the ST – the little character in question being ADI, who's a cute little alien who interacts with students. There are four initial releases: *ADI Maths 11* and *ADI English 11* which are aimed at 11 year olds, and *ADI Maths 12* and *ADI English 12* which are aimed

at 12 year olds. They each cost £25.99. Similar versions for 13 and 14 year olds and French for 11 to 14 year olds are to follow in the autumn.

ADI encourages students to get through each lesson – he pulls faces, whistles and even goes to sleep if he gets bored. If you do well in a lesson, you're rewarded with a session on a game. All the student's activities are logged and

teachers or parents can check on progress at any time. The lessons are geared towards the National Curriculum targets. ADI has been popular in his home country of France and has helped to sell well over 100,000 programs there. Europress hope that the interactive compu-teach approach will be equally successful on this side of the channel and make learning on the ST a lot more fun.

GUARANTEE YOUR COPY OF ST FORMAT – TURN TO PAGE 44

AND...

● Atari US's sales dropped by a massive 37% from \$411.5 million in 1990 to \$258 million in 1991, according to their delayed financial reports. In 1990 they made an operating loss of \$25.2 million, but 1991 saw this fall to \$18.7 million. The sale of their manufacturing plant in Taiwan raised \$40.9 million. Atari President Sam Tramiel said, "The company has restructured its overheads and is focusing on the improvement of its balance sheet and the development of new products." Let's hope this has some effect.

● Words and Music have just released three disks containing works from composers such as Beethoven, Bach, Chopin, Gershwin and Musorgsky, so if you've been searching for classical music among the pre-recorded MIDI song file production companies, look no further. If these don't tickle your ivories, a fourth disk features no less than 20 ragtime tunes, cunningly titled *It's Ragtime*. One disk retails at £8.95, two at £16.95, three at £23.95 and all four for £29.95. The tunes are saved as standard MIDI files and include full documentation. Contact Words and Music, ☎ 091 529 4788.

● Games are great fun, but getting stuck or repeatedly killed at the same point is annoying and frustrating. The answer is to get yourself some help. Kuma have released what they call "the bible for computer gamers." Corish's *Computer Games Guide, Third Edition* contains more than 12,000 hints, tips and pokes for over 1,250 games. Freedom from frustration costs £14.99 from Kuma ☎ 0734 844335.

FSM GDOS ready for release

by Clive Parker

A cut-down version of the font scaling module, FSM GDOS, is available here with the full version expected in about a month.

Atari are poised to release the full version of their revolutionary new GDOS replacement first in America and then in the UK. The official price for the US version has been set at

\$49.00 (about £30.00).

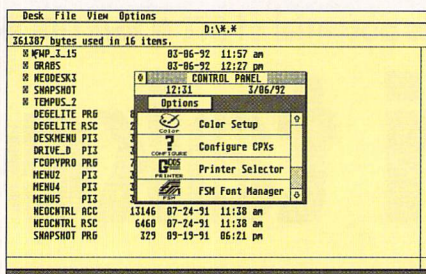
According to Atari US's Director of Communications, Bob Brodie, the US version of FSM GDOS will be available for sale as a separate package by the end of the month. Atari UK's Bob Katz told *ST FORMAT* that Atari are looking for ways to distribute the package in the UK "with the minimum amount of fuss."

FSM is a direct replacement for GDOS which has been marketed for the ST since it's conception. GDOS offers a range of fonts for any ST, but has been heavily criticised for being too slow. As a result, very few fonts have

been created and only a handful of programs make use of GDOS. That's set to change once FSM GDOS is officially released. This re-written version is faster and much easier to use and, according to Bob Brodie, "the output speed of FSM GDOS on an Atari Laser printer is very fast, as fast as *Calamus*." Over 100 fonts are already available.

Any program which already uses GDOS will work perfectly with the new FSM GDOS. Word processing and desktop publishing packages are certain to be the main beneficiaries, though programs like *Degas Elite* are already geared up to make use of much of the new technology.

The full version requires at least 1MByte of memory to run, but Atari have produced a cut down version for 512K machines. The cut down version, called Font GDOS, runs on all 512K machines. This program is a direct replacement for the old version of GDOS and is substantially faster in operation and much easier to set up. All the currently available GDOS fonts work with Font GDOS. New printer drivers have been written finally enabling owners of the Deskjet 500, Canon BJ-10e and other high resolution output devices to be used to the full. Font GDOS and the full range of printer drivers are



● FSM GDOS is loaded here into the XControl Panel Accessory on Atari's new ST Book.

SOUNDS GOOD, BUT WHAT CAN FSM GDOS REALLY DO?

FSM GDOS brings high resolution scaleable outline font technology to ST owners. Outline fonts enable characters to be enlarged to any size with no loss of resolution because each letter is stored as a set of data. If a letter is required at a larger point size, it is simply redrawn at the larger size from the basic data. Only one set of files is required for all sizes of a font instead of a different file for each point size. Another point to note is that, because the screen and printer fonts use the same information, the resulting printout is exactly the same as the screen display.

The basic package contains the installation program, standard bitmapped Dutch and Swiss fonts, the 13 font Lucida family, FSM accessory and CPX, FSMPrint printer selector accessory and CPX, FontGDOS accessory and CPX and 12 printer drivers. Printers covered include Atari Lasers, Canon and HP inkjets, Epson FX, HP LaserJet, the NEC P-series, HP Paintjet, Okimate 20 and Star printers.

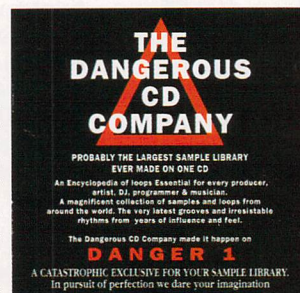
The Third MIDI Music Show

The ST, Mega STE and TT were all very much in evidence at the biggest MIDI music show yet – held at London's Novotel from 24 to 26 April – with over 75% of the stands using at least one Atari machine to demonstrate their music.

Audio Visual Research (☎ 0582 457348) demonstrated *Replay 16* – their new 16-bit sound sampler for the ST which is going to retail for a remarkably low £129.95 – the previous 16-bit sampler from AVR cost £350.00. The editor software is almost complete and the whole package should be available in a few months.

As sampling becomes more common in the MIDI world, companies are now producing CDs full of sounds, drum loops and FX that can be played on a normal CD player and then sampled by your own software. The Dangerous CD Company have just released their *Danger 1* CD (£49.95) which consists of over 1,000 digitally mastered samples. Contact Kendal Whalley on ☎ 081 368 8271 for details.

Harman Audio will be distributing all Steinberg products in the UK from 1 June of this year. Contact Kiera Leeming on



● The *Danger 1* CD is filled with over 1,000 digitised samples for you to use in your own sequences.

☎ 0753 576911 if you want any more information.

Next year's show is to be held at the Wembley Conference Centre. Contact Westminster Exhibitions (☎ 081 549 3444) if you want to book a stand.

Out of memory

Distributors of the Xtra RAM upgrade board, Frontier Software, have gone out of business. A new company, Marpet Developments, has taken over all rights to their hardware.

In the past three years 15,000 memory expansion boards have been manufactured and distributed by Frontier – and Marpet are prepared to take on the remaining warranty. So, if you own an Xtra RAM upgrade, you can get written confirmation of your warranty and details of new special offers by sending £4.99 to Marpet Developments, Meadowfield Farm, Fellbeck, Pateley Bridge, North Yorkshire. Contact Marpet on ☎ 0423 567140.

available from the ST Club on GDOS Disk E for £2.95. The ST Club have got a GDOS distribution licence from Atari and you can contact them on ☎ 0602 410241 for more information.

In the US, the full FSM GDOS is supplied with *Wordflair 2* – a word processor which makes extensive use of the features of this font scaling module. An earlier version of *Wordflair* is distributed by Hisoft (☎ 0525 718181) in the UK. Hisoft's David Link confirmed to *ST FORMAT* that they intend to release *Wordflair 2* in the UK very shortly for £99.95 – though Atari UK may insist that FSM GDOS is removed from the package.

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GRAFTGOLD
Creative Software

Developers already writing for MultiTOS

In a fresh mood of openness, Atari UK demonstrated their new MultiTOS to *ST FORMAT*, confirming many of the details that we were able to reveal exclusively to you last month.

MultiTOS enables you to run several applications at once in separate windows on

an ST or TT. Several programs were demonstrated running simultaneously in five separate windows on a TT. Well-behaved ST programs run under MultiTOS, but most applications are going to have to be tweaked slightly to respond to MultiTOS commands. Most major UK software developers have

already started to upgrade their major applications to run under MultiTOS.

On 68030 machines – the TT and the Falcon – MultiTOS takes advantage of built-in memory protection commands. This means a program does not try to use an area of memory being used by another

application or process – this prevents any loss of data. However, on the 68000-based ST machines memory protection is not available, so software needs to be converted to recognise these commands.

The MultiTOS program is still under development and is not likely to be available until

late in 1992. It will be available to all existing Atari owners as a disk-based upgrade.

Atari US are still insisting that the new machine – the Falcon '030 – is due for release in late autumn, in which case, MultiTOS is not very likely to be included on ROM as part of the operating system.

...PIECES

● HCS now sell a double-sided drive upgrade for the STFM – it has special spacers to raise the drive to fit older STs with a single-sided drive and large eject button. The only modification you may have to make is to widen the eject button hole. You get a 14-day money back guarantee and a one year guarantee. So, if you still have single-sided disk drive in your ST, it's time you upgraded to take advantage of all new software and STF's Cover Disks. The unit costs £47.00. HCS ☎ 081 777 0751.

● Dr T's Tiger Cub sequencer has just been upgraded. V2.0 of this very popular first-time sequencer now sports 24 tracks, system exclusive recording and editing, advanced quantisation as well as synchronisation to song position pointers. Contact Zone Distribution on ☎ 081 766 6564.

● Sonic Curves have now gained the rights to distribute extra sounds for the budget MIDI expander, so if you're an Evolution EVS1 owner looking for new sounds, this could be your lucky day. Their new disk features 120 voices and 120 groups and costs £19.95. Sonic Curves also have got plans to release a Casio VZ editor and a Casio CZ librarian program. Contact Sonic Curves at 19 Roseberry Drive, Great Ayton, Cleveland. TS9 6EQ.

And now in Technicolour™...

Panasonic's printer range is about to be expanded (again) by the addition of two new colour models, the KX-P2123 24-pin QuietPrinter and the KX-P2180 9-pin version.

The KX-P2123, at £340.00, and the KX-P2123 at £270.00 both offer a palette of seven colours: magenta, blue,

violet, yellow, red, green and, of course, black. They come with six letter quality fonts (Courier, Bold PS, Prestige, Sans Serif, Roman and Script) while the KX-P2123 also includes a "Super Quality" Roman font.

The quoted print speed is 240 cps in draft mode – around average for a dot

matrix. Panasonic claim that both printers are quieter than many laser and inkjet models. Their models apparently produce sound in the 44-48 decibel range whereas they quote figures of 54 to 64 decibels for other makes of dot matrix printers. This decrease in noise could be vital if the printers are going to be used in an office where the noise of a standard matrix printer could be rather intrusive.

The KX-P2123 emulates the Epson LQ-860 and IBM Proprinter X24E, while the KX-P2180 can emulate an Epson FX-850/EX-800 and an IBM Proprinter 3. Most serious ST software includes Epson and IBM printer drivers, so using the printers with one shouldn't be a problem – although obviously you won't be able to take advantage of the colour range.

Panasonic can be reached on ☎ 0344 853915.



● The new Panasonic colour printers: the KX-P2123 on the left, the KX-P2180 on the right, and at the front – er, a carnation. Bulky beasts they look too, but both come with paper-parking facilities so you can use both continuous and single sheet stationery at once.

They're only Human

by Ed Ricketts

They're a new software house to the ST, they're called Mirage and they're just a tad ambitious. Because for their first three games, they aim to simulate the evolution of the human race.

The *Humans* trilogy of games takes in three Ages of Man: caveman, Medieval man and future spaceman. Little has been decided on the latter two, but the first is almost finished.

Introducing *The Humans* is described as cross between *Lemmings* and *Chuck Rock*. It's an arcade game with strong puzzle elements in which your job is to guide primitive man in his quest



● One of the Humans gets to know a dinosaur a little too well. What are dinosaurs doing cavorting about with human beings, anyway?

for knowledge. At the beginning of the game, the humans have no specialist knowledge at all, and are only able to support each other (to form human ladders), climb rockfaces (if you've found a rope) and pick up objects.

Using these three skills, it's possible to progress further around the landscape and find the other objects you need to get anywhere: fire and the wheel. Once you "discover" fire, the humans have the knowledge of to use it. For instance, a burning brand can be – er, brandished at a dinosaur to keep it at bay while the other humans move on to a different section. But, of course, the brand only has a limited time to burn – in effect, creating a

time limit. The wheel is even more useful. It can be rolled along the ground and be pushed off ledges to crush nasties, or used to bridge impassable gaps. You can also ride it, with the result that you leap over chasms and run from foes. The wheel's powerful but needs practice.

There are other objects to be found. The rope enables you climb but, more obscurely, it also enables you to catch dinosaurs so you can ride on them. You can obviously use the spear to fend off nasties, but it's also useful for jumping by using it as a pole vault. As these objects are found, the collective knowledge of the humans and thus the evolutionary process is advanced.



● The smartass human with the wheel shows off to his mates until he's stopped by the enquiry: "Yes, but what else does it do?"

There are two special characters among the humans. The King is – er, the King, so all his subjects do as he says. By controlling the King, you can control the entire mass of humans at once. The Shaman is a magic man who can use magic to summon spears, burning brands, ropes, wheels and even other humans – but you need to sacrifice a human for each spell.

Humans looks like being intriguing and original. The graphics are larger than those in *Lemmings* and more humorous. If there are sufficient puzzles, it could be a serious rival to that corking *Psygnosis* classic. Expect to see a demo of *Humans* on next month's Cover Disk..

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| 520STE 4Mb | £370.00 |
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| Mega STE 0mb | £529.00 |
| Mega STE 1/2 Mb | £549.00 |
| Mega STE 1Mb (no hard drive) | £599.00 |
| Mega STE 1Mb, 48Mb | £799.00 |
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| Mega STE 2Mb, 48Mb | £849.00 |
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All TT's come with colour monitors

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WORD PROCESSORS

| | |
|-------------------------|---------|
| That's Write V1.4 | £29.00 |
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| Protext | £109.00 |

MISCELLANEOUS

| | |
|---------------------------------|--------|
| Neo Desk 3 | £28.00 |
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| Data Manager Pro | £29.00 |
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| Architectural Design Disk | £10.00 |
| CAD 3D | £10.00 |
| The Navigator | £10.00 |
| Kemit | £10.00 |
| Flash | £10.00 |
| G.I.S.T. | £10.00 |
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"THIS MONTHS SPECIALS"

**GASTEINER 105Mb
(QUANTUM) 11ms£399.00**
**4Mb ATARI RAM UPGRADE
FOR STE, STFM
OR MEGA ST£149.00**

GASTEINER, Unit 3 Millmead Business Centre, Millmead Road, London N17

Tel: 081 365 1151. Fax: 081 885 1953. Mon-Fri (9.30am-5.30pm) Sat (9am-2pm)

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Prices subject to change without notice. Goods subject to availability. Specification subject to change without notice.

On the up!

Upgrading your ST's memory is probably the most useful thing you can do to expand its capabilities – you can use more powerful programs, run them faster and gain more workspace – and it's never been cheaper or easier. Clive Parker takes you on a step-by-step guide to upgrading your ST

When the ST was introduced in the mid '80s everyone was amazed that it boasted 512K of RAM as standard. At that time the memory capacity of home micros was just reaching the "massive" 128K stage and it was felt that 0.5MByte of memory was so large that it could never be fully utilised. Now more and more serious applications coming onto the market require a minimum of 1MByte of RAM, and some programs actually require 2MBytes. Having 1MByte of memory installed in your ST opens up the world of professional music and MIDI applications, desktop publishing, graphics and much more. 1MByte is coming to be seen as the standard requirement, so it makes sense to upgrade now – or risk being left behind and missing out on the latest software.

And that's not all. When you've installed extra memory there's no limit to the number of Desk Accessories and memory-resident programs you can have. A good example is *Degas Elite*. On a 512K machine

you can run *Degas* with a couple of Accessories and have two workscreens available for your drawing. With 1MByte installed you can have all six Accessory slots filled and have the full eight workscreens available.

Programs run faster and more efficiently, DTP programs can load more fonts and pages, MIDI programs can create much longer sequences, you can make longer sound samples, and animations can have twice as many frames – your available workspace may increase by up to fivefold! This is because with a typical program installed on a 512K ST about 180K is used by the machine's operating system and 200K by the program. This leaves 140K of workspace for files, samples, animations and so on. With an extra 512K of RAM installed your workspace is dramatically increased to 650K.

UPGRADING THE STE

So what's the easiest way to upgrade your machine's RAM? If you have an STE the process is simple: you

THE ATARI LASER PRINTER AND RAM

The Atari SLM605 Laserprinter (£1,056.00 Atari 0753 533344) is another reason for increasing the memory capacity of your machine. Most lasers use their own built-in memory to build up a page image, but to be different the Atari SLM605 takes over 1MByte of the ST's own RAM to build the image. This saves time when printing pages from word processors or DTP packages, a full page of text typically being printed in 10 seconds. This means that you need a minimum of 2MBytes of RAM to use the printer.

buy two 256K SIMM memory cards, open up your machine and plug them in the two empty SIMM sockets. This changes your 520STE to a 1040STE instantly – there is no internal difference between a 1040STE and a 520STE apart from the number of SIMMs installed. Later you may wish to increase the size of your STE's RAM to either 2MBytes or 4MBytes. Once again all you have to do is insert some plug-in SIMMs. Because of the design of the STE, SIMMs can only be installed in pairs and it is impossible to mix 256K SIMMs with 1MByte SIMMs. Therefore the only possible RAM configurations for an STE are 512K, 1MByte, 2MByte and 4MByte.

However, there are a very few early STEs which did not have SIMM sockets for the RAM. Instead they used SIPs boards which are soldered directly to the main circuit board. A SIP is very similar to a SIMM except that instead of an edge connector it has legs which need to be soldered to the circuit board. A machine with SIPs can be identified by the fact that it has a row of 30 small holes in the circuit board

TEN COMMON QUESTIONS

1 If I upgrade my machine to 1MByte can I upgrade it to 2 or 4MByte at a later date?

Yes. With an STE you just plug in more SIMMs. The simplest way to upgrade an STFM is to use an upgrade board which uses SIMM memory cards and sockets.

2 Can I install different size SIMMs in an STE to create 1.5MByte or 2.5MBytes of memory?

No, in the STE you can only install SIMMs to create 0.5MByte (2x256K), 1MByte (4x256K), 2MByte (2x1MByte) and 4MByte (4x1MByte).

3 Do I have to do any soldering to install the upgrade?

Not very likely – most upgrades use plug-in connectors. If you have a rare version of the STF or STFM, the Video Shifter chip may be surface mounted, so you might have to desolder it and fit a socket. There are also some circuit boards which have non-standard MMU and GLUE chips. Plug-in upgrades cannot be used with these machines.

4 Does fitting an upgrade affect my guarantee?

Leading suppliers gave us conflicting replies, so check at the place where you got your machine – they may be able to fit it for you. In this case, the guarantee should be valid, but check before any work is done. All STFMs are over a year old and out of guarantee anyway.

5 Would a 1MByte upgrade mean that I'll have 1.5MByte of memory in my machine?

No, the terms "1MByte upgrade" and "0.5MByte upgrade" both refer to upgrading an ST to 1MByte of memory. It's always a good idea to make sure of what you're getting whenever you order an upgrade.

6 I have seen adverts claiming to give 2.5MByte of memory on an STFM. Surely this is impossible?

It is possible to have 2.5MByte of RAM on an STFM. However, some machines have a different MMU chip, numbered 100109, which does not allow this configuration. STEs cannot support 2.5MBytes of RAM.

7 Is there an upgrade which plugs into the cartridge port on the ST like older 8-bit machines?

No, there is no such upgrade available because the cartridge port does not carry the necessary signals.

8 What is the difference between a 1MByte x 9 SIMM and a 1MByte x 8 SIMM? Can I only use 1MByte x 8 SIMMs in an ST?

You can install both types of SIMM in the ST – the 1MByte x 9 SIMMs are peculiar to the PC-compatible. The extra bit is ignored by the ST because it doesn't need parity checking. 1MByte x 9 SIMMs are more expensive.

9 When I run a memory check program on my 520ST it only shows about 330K available. Why is this?

The ST's operating system is loaded into RAM when you boot up, taking over a large chunk of memory. Upgrading to 1MByte helps you overcome any memory shortage problems like this.

10 How much is upgrading going to cost me?

As little as £17.50 – see the special offer on page 60. But it depends on your machine – some pose special problems that require more expensive solutions, like special adapter boards. See if you can find your machine among the variations covered here, then check with the suppliers.

A STEP-BY-STEP GUIDE TO UPGRADING YOUR STFM TO 1MByte

The painless easy-to-follow guide to expanding your machine's RAM.

Upgrading the memory for most STs couldn't be simpler, but in the unlikely event that you should damage your ST, contact the supplier who will be happy to repair it for you

WARNING!

Computers and semiconductor chips are static-sensitive devices. Before touching any part of the inside of your machine, dissipate static by touching a grounded metallic object – a radiator, a metal table leg or a water pipe will do. Alternatively use an anti-static wrist strap. These can be obtained from electronic stores such as Tandy or Maplins for around £2.00

DISASSEMBLY
How to take your ST apart

INSERTION
How to install the extra memory

instead of SIMM sockets. If you do have a machine with SIPs instead of SIMMs then contact the companies named on page 28 – they can install the upgrade for you or supply SIMM-to-SIP adapters which simply plug into the holes.

SIMMs can be obtained from most computer suppliers and prices range from £17.50 to £25.00 for a 512K upgrade (2x256K SIMMs) and from £25.00 to £40.00 for a 1MByte SIMM board. Prices vary because of the varying speeds of RAM available – the faster the RAM speed the higher price. When buying SIMMs for the STE look for the speed of the RAM on the back of the SIMM board – 100ns or less for the best results.

Remember, if your machine is less than one year old, opening it may break the guarantee. Check with the supplier of your machine before opening it up.

UPGRADING THE STM, STF AND STFM

The task of upgrading the pre-STE machines is not quite as simple as upgrading the STE, although in 95% of cases no soldering should be involved. Several companies supply plug-in upgrades for the older style of STs, and most offer an installation service for those who feel nervous about opening their machine. Installing an upgrade to 1MByte is very straightforward, with no modifications required to the main circuit board. Upgrades to over 1MByte do entail some cutting of resistors and installation of links to disable the original RAM banks in the machine – so let's concentrate on upgrades to 1MByte.

There are two main types of memory upgrade available: those that use ordinary RAM chips and those that use a SIMMs board. The boards that use standard RAM chips come in three sizes: 512K,



● The basic tools required for a plug-in upgrade. All of these may not be required in some STs – you need a medium cross-head (Philips) screwdriver, a medium flat-blade screwdriver, a pair of long-nosed pliers, a small pair of snips and a static earth strap.



● You may need a soldering iron for upgrading some machines. In this case, you also need a solder sucker and cored solder. Be warned that semi-conductor chips are very sensitive to heat, so aim carefully!

2MByte and 4MByte. They are usually installed by means of plug-in adapters which either sit over chips on the circuit board or plug into a chip's socket with the original chip being inserted into a socket on the adapter. The two chips used by the adapters are the MMU (Memory Management Unit) and the Video Shifter Chip. These can intercept signals from the ST and send them to it via the adapter.

In most cases the MMU and the Video Shifter chip are in sockets, so all you need to do is remove the Video Shifter carefully from its socket and plug in the adapter, then plug the Video Shifter into a socket on the adapter board. The other adapter plugs over the MMU chip and needs to be pressed down firmly and carefully – quite a lot of pressure is required here to prevent the board from popping up.

The other type of upgrade has essentially the same adapters as on the standard RAM boards but adds an extra board with four SIMMs sockets. Standard SIMMs can be used on these upgrades, giving you an easy upgrade path to 2MBytes or 4MBytes.

TYPES OF CHIPS

If your machine has the Video Shifter soldered to the circuit board, there are several options, depending

on the upgrade you use. In most cases the adapter can be pressed firmly "piggy-back style" over the chip, ensuring that the legs line up correctly. Other upgrades supply an extra adapter socket which can be carefully soldered onto the chip; with others you have to desolder and remove the chip and solder a socket in its place.

In all cases, you should not attempt soldering unless you know what you are doing. If you cannot solder then most upgrade suppliers can do the installation for you – contact them to ask how much they charge for this service.

If the MMU is soldered directly onto the circuit board, then another adapter is available. This is essentially an upside-down socket which clips neatly over the chip. It is usually supplied as an extra – contact the supplier of the upgrade. Again, if you are not sure of what you are doing, you can ask the supplier for advice.

There is a third type of MMU, rectangular in shape, which is not compatible with any of the plug-in adapters. In this case you need a solder-in type of upgrade and we recommend that the work is done by the upgrade supplier or a competent electronics engineer just to be on the safe side.



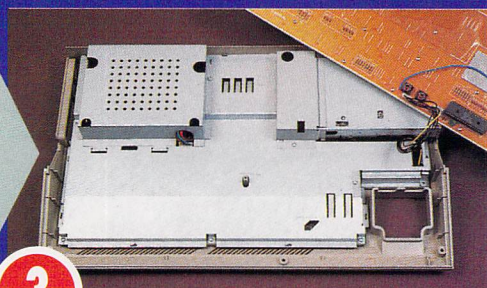
1

Turn your machine upside-down and remove the screws using the cross-head screwdriver. The screws in the square holes hold the lid on and the three screws in the round holes hold the disk drive in place. Store all screws safely. This is important because the screws at the front and rear of the ST are different lengths.



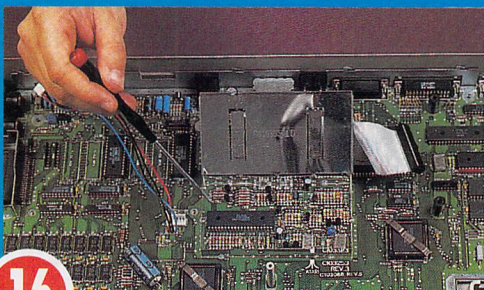
2

Carefully turn your machine the right way up, making sure you keep a good grip on both top and bottom sections. Lift the top from the machine – starting from the left hand side, because the lid has to be moved to the right to disengage it from the disk drive eject button.



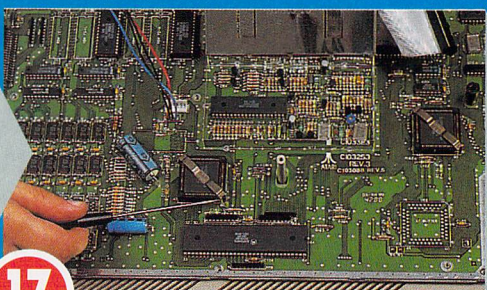
3

Lift the keyboard gently from its supports and unplug the keyboard connector at the right-hand side of the machine. Put the keyboard in a safe place.



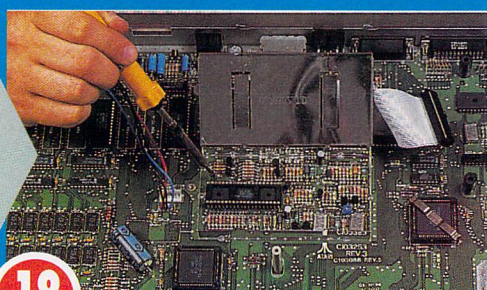
16

This large oblong chip in the box is the Video Shifter. It can be either in a socket or surface-mounted (soldered to the board). This particular one is surface-mounted.



17

Locate the MMU chip. It is usually a square chip numbered 025912 or 100109 and can be either surface-mounted or in a socket. This one is in a socket with a clip holding it in place. Remove the clip by gently twisting the end off of one corner.

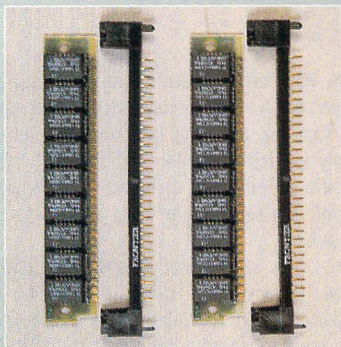


18

We used the Xtra-RAM Deluxe for this ST. The Shifter chip is soldered, so we placed the extra adapter over the chip and pressed down, providing a socket for the main adapter. The legs must line up with the chip. Though the socket fits tightly, solder some of the legs to the chip so it stays put or use double-sided foam tape to fix the socket to the top of the chip.

MEMORY IN A BOX

Xtra-RAM STE 0.5MByte
Machine: All 520STEs
Price: see page 60
From: Marpet Developments
Contact: ☎ 0423 567140



● The Xtra-RAM STE comes complete with memory testing software and a comprehensive instruction manual, highly recommended for those upgrading their STE. It also includes SIP adapters for those few STEs without standard SIMM sockets.

This upgrade is the simplest of all to install, being for the STE. The package consists of two 256K SIMMs, two SIP adapters, a disk containing the memory testing software and a 20 page installation manual. The manual

is well laid out and easy to follow, detailing the complete process of upgrading your STE. The difference between installing SIMMs and the less common SIPs is clearly explained with the circuit board details described. In practice a complete novice should be able to install this upgrade in 40 minutes or under.

STF Rating: 86%

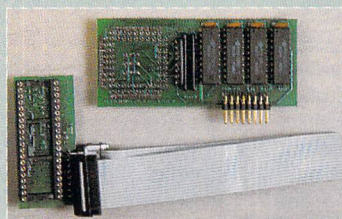
Zydec 0.5MByte solderless upgrade
Machine: 520STM, 520STF, 520STFM
Price: £49.95
From: Evesham Micros
Contact: ☎ 0386 765500

The Zydec upgrade comes in a small box which contains a Video Shifter adapter and an MMU adapter with a small connecting ribbon cable between them. The manual consists of three A5 size pages which describe how to take your machine apart, locate the MMU and Video chips and finally reassemble the ST. Briefly all you need to do is remove the Video Shifter chip and plug in the adapter, piggy-backing the MMU. If the Video Shifter is of the soldered

variety then the instructions describe how to piggy-back the adapter over the chip which should result in a sufficiently tight fit. Any rough treatment of the machine could result in the adapter popping loose. If the MMU is of the soldered variety, then the instructions inform you to contact your supplier for an alternative version of the upgrade with the MMU socket. There is no memory checking software supplied with this upgrade kit.

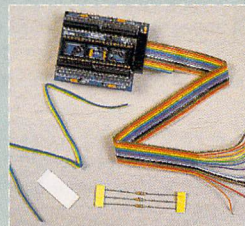
This kit is simple to install as long as you have socketed chips on your machine's circuit board.

STF Rating: 79%



● This is the Zydec 0.5MByte memory upgrade board. If you have got the right chips in your machine, then it's a breeze to install. If you haven't, then it's not quite so easy.

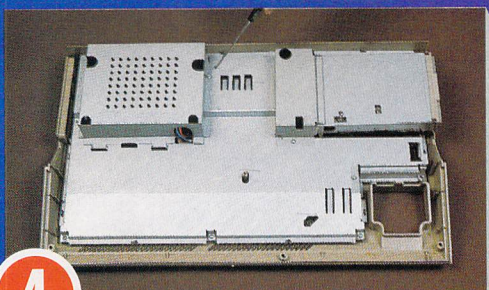
Aries 0.5MByte upgrade board
Machines: 520STM, 520STF, 520STFM
Cost: £39.99
From: Ladbroke Computing
Contact: ☎ 0772 203166



● If you're wondering where the MMU adapter is for the Aries upgrade, don't. The ribbon

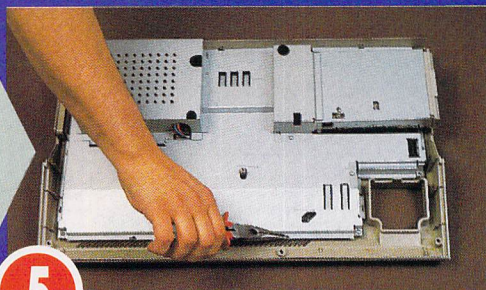
cable is soldered to the ST's circuit board, as are the resistors if they are required. They've even provided a double-sided sticky tab to hold the adapter firmly in the Video Shifter socket!

This upgrade is ideal for machines which contain the non-standard oblong MMU chips, because although the Video Shifter is connected to the upgrade board as usual the other connections are made by soldering a ribbon cable directly to the circuit board. This type of work is definitely not for the amateur electronic enthusiast because the circuit board of any machine can be very easily damaged



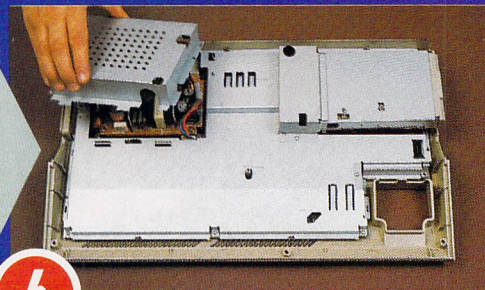
4

Undo the two screws and straighten the tabs which hold down the shield over the power supply at the left-hand side of the machine.



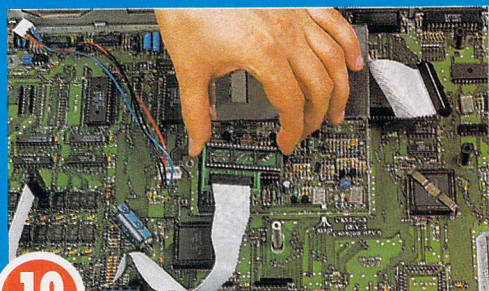
5

Straighten the retaining tabs around the entire shield and remove the three screws that are positioned along the front edge of the machine.



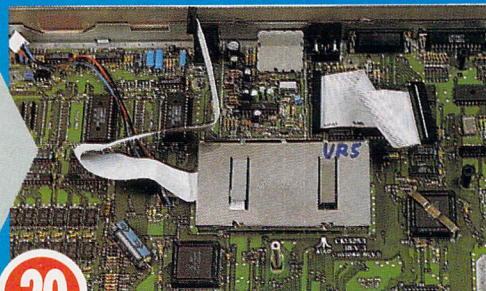
6

Now you have to remove the shield from the power supply and place it to one side.



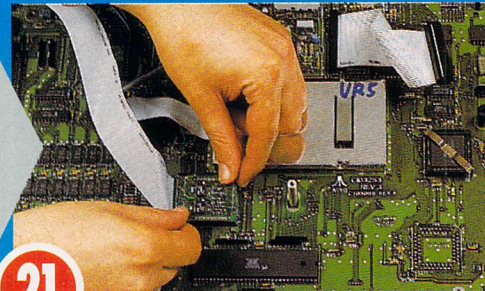
19

The main Shifter adapter can now be inserted into the socket on top of the shifter chip and firmly pressed down.



20

The lid to the Video Shifter housing can be closed with the ribbon cable running out to the left. Ensure the edges of the lid do not cut into the cable. Sometimes it's impossible to close the lid because of the extra adapter used with surface-mounted Shifters, so you have to remove the lid, using some snips to cut the hinges at the rear of the housing.



21

The MMU adapter can now be placed over the MMU chip – make sure it is lined up correctly as described in the instruction manual. It is quite hard to press the adapter onto the MMU properly – a lot of pressure is required.

by the heat of a soldering iron. If the Video Shifter is surface-mounted, the instructions recommend that you send the machine to Ladbroke for installation of the upgrade.

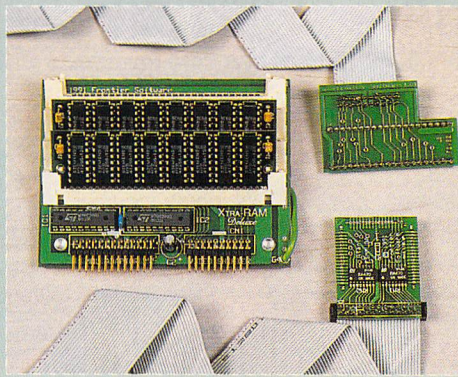
The installation instructions consist of six A4 pages of detailed instructions and troubleshooting tips. The instructions are very detailed but could easily confuse people not used to working with electronic components. If you do have troubles either with the installation itself or with the machine afterwards, there are several pages of hints, tips and diagrams to help you solve the problem. There is also a phone number for Ladbroke's technical help line if you really need help. Memory testing software is provided to check the upgrade after installation.

A good upgrade which does the job, but installation may be a bit daunting for the uninitiated. Ladbroke provide a fitting service for £20.00.

STF Rating: 76%

**Frontier Xtra-RAM ST Deluxe 0.5MByte
Machines: 520STM, 520STF, 520STFM
Price: £64.99
From: Marpet Developments
Contact: ☎ 0423 567140**

This board enables you to upgrade pre-STe machines by means of standard SIMM memory boards. The installation method is the classic Video Shifter and MMU adapter combination, but with extra long ribbon cables to be taken outside of the metal shielding to a SIMM board which can be situated between the power supply and the disk drive.



● The Xtra-RAM upgrade consists of a Video Shifter adapter, MMU adapter and a SIMM board.

The instruction book is extremely detailed, with full information on identifying which type of ST you have. Although we tested the 0.5MByte version with two 256K SIMMs, this board is fully upgradeable to the maximum of 4MByte.

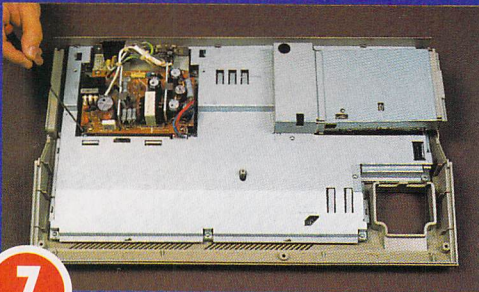
The upgrade consists of a Video Shifter adapter, an MMU adapter, a SIMM board with 512K installed, jumper leads and memory testing software. If any other adapters are required to cater for surface mounted Shifter or MMU chips or both, then these are available free of charge – just contact the supplier. The upgrade can be installed in all machines except those with oblong MMU chips.

Once you have the suitable adapters, the Xtra-RAM can be fitted easily in under an hour following the instructions, even by a novice.

STF Rating: 87%

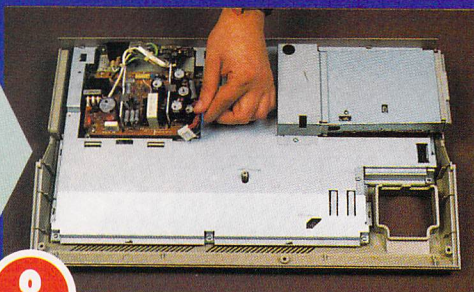
WHAT CAN MORE RAM DO FOR ME?

- 1 ..It enables you to play massive new games that require 1MByte of RAM – like *Populous 2*, *Heimdall*, *Lure of the Temptress*, and *The Secret of Monkey Island*.
- 2 You can run powerful 1MByte-only programs such as *Pagestream 2*, *Populous 2*, *Calamus* and *Railroad Tycoon*.
- 3 You can install RAMdisks to instantly load utilities and applications. A RAMdisk helps with file copying on single floppy systems.
- 4 With 2MBytes of memory installed you can use the Atari laser printers.
- 5 You can create much longer MIDI music sequences and make beautiful music.
- 6 You can create much longer digitised sound samples at higher frequencies, giving you greater quality.
- 7 You can use DTP programs more efficiently – you can hold fonts in memory rather than loading them in and hold more pages of a document in memory.
- 8 You can open more than one large document at a time for editing in WPs. This can be useful for editing files, cutting and pasting parts of several large files into one.
- 9 You can install large memory-resident printer buffers, enabling you to continue with other work while printing large documents.
- 10 Animations can now be longer, you can grab more frames with video digitisers, hold larger scanned images in memory, run more memory-resident programs at once, hold alternative Desktops such as *NeoDesk* in memory, create larger database files – in fact you can use any application more efficiently with more memory.



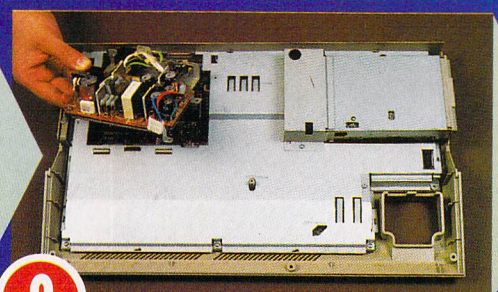
7

Remove the two screws holding the power supply to the base of the machine. These are located on the front left and front right support legs of the power supply.



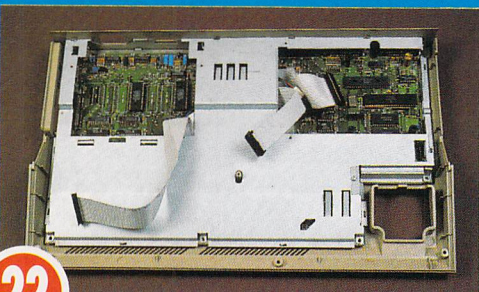
8

Carefully unplug the power supply from the main circuit board – you'll find the plug situated at the front right side of the unit.



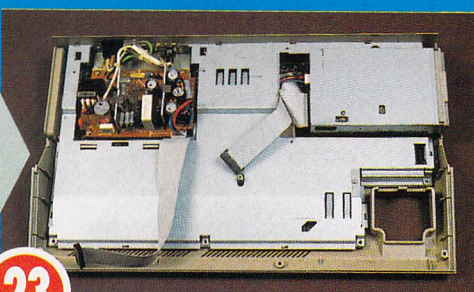
9

Lift the power supply from the base of the machine. It may be a bit fiddly on some machines but it should come out fairly easily. Put this safely to one side.



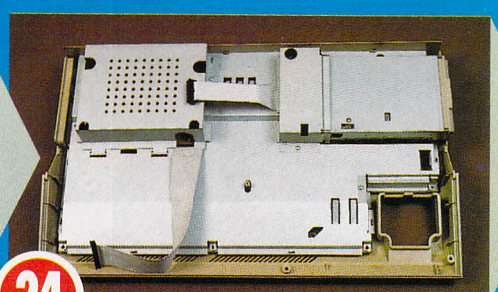
22

You can now replace the main shielding. Run the ribbon cable from the MMU through the power supply hole and the cable from the Shifter through the gap where the disk drive sits.



23

Replace the power supply, checking that the ribbon cable doesn't get snagged. Plug the power supply into the circuit board and refix it. The power supply plug only fits one way easily. If there's a problem, check it's the right way round. Replace and reconnect the power and data cables, ensuring the ribbon cable from the Shifter isn't trapped.



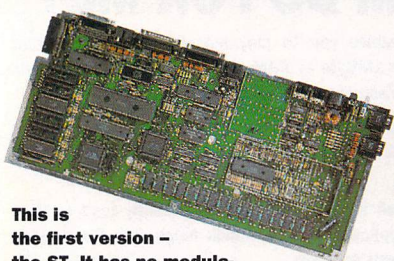
24

Replace and refix the protective cover at the rear of the disk drive with the ribbon cable running out, and replace and refix the power supply shield with the MMU cable running out as shown.

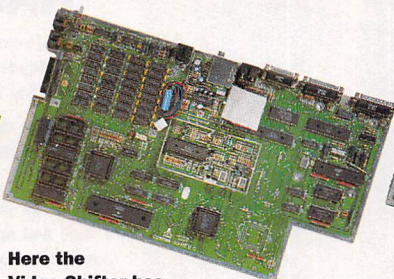
BUT MINE ISN'T LIKE THAT

changes. To help you identify your machine here are the various types of board and the layouts of the ST, the Mega ST, the STE and the Mega STE.

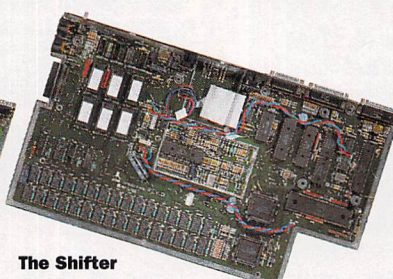
There have been four major circuit board layouts for the Atari STM/STFM because of design changes and modifications, along with several lesser



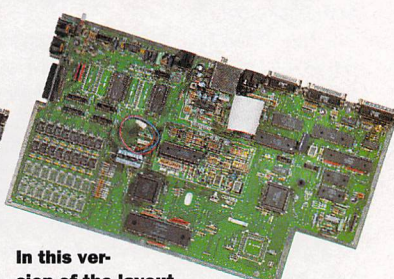
This is the first version – the ST. It has no modulator, floppy disk drive or internal power supply. The Video Shifter is on the right of the machine in the large oblong box. The MMU is the right large square chip, marked either 025912 or 100109.



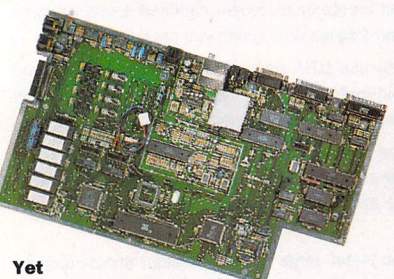
Here the Video Shifter has moved to the centre of the machine and the MMU is the large square chip on the left of the machine. Note the space for the blitter chip.



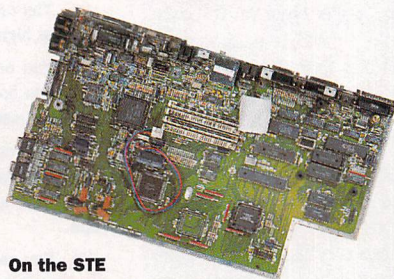
The Shifter remains in the centre on all STFM machines. The MMU is the square chip at the front right-hand side of this machine.



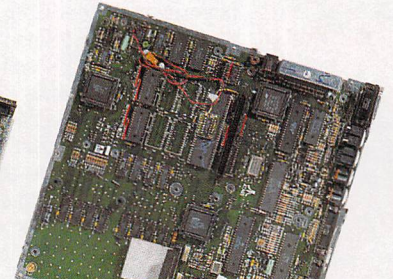
In this version of the layout the MMU has moved to the centre of the machine just below the Shifter chip.



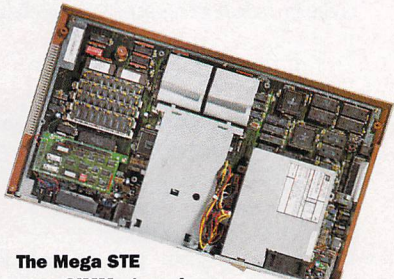
Yet another variation, with the Shifter in its accustomed position but the MMU being the square chip to the left-hand side of the circuit board.



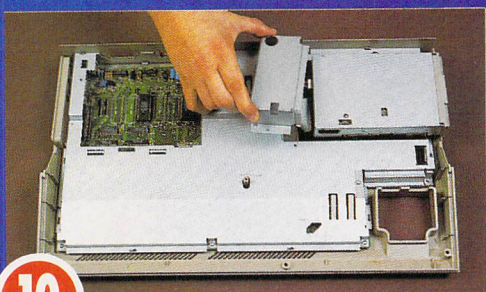
On the STE the SIMM sockets are situated in the centre of the machine, slightly towards the rear. Note the shifter chip has disappeared – it is now combined with the MMU and GLUE into one large custom chip.



In the Mega ST the MMU is at the front of the machine, on the left-hand side, and the Shifter is at the rear directly to the right of the cartridge socket.

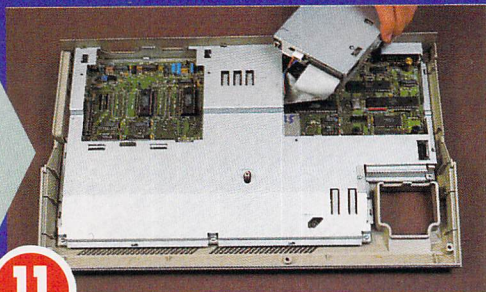


The Mega STE uses SIMMs (sensible) which are on the right-hand side of the machine. The 4MByte limit remains on the Mega STE range of machines.



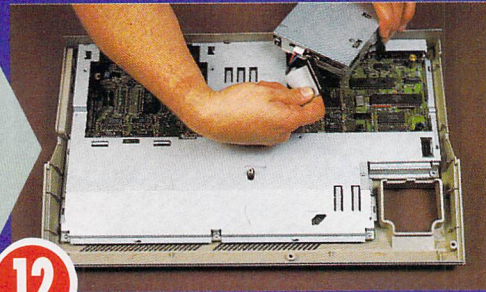
10

On some machines there may be a cover over the left-hand end of the disk drive. Remove the two screws holding it down and put it to one side.



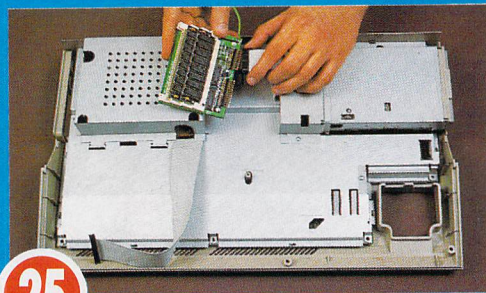
11

Lift the drive from its supporting legs. The drive is connected by a ribbon cable and a power cable. Note the position of the red core on the ribbon cable – it is usually at the front edge of the drive. The cable must be re-inserted the correct way! There is usually a lug which lines up the ribbon cable with the drive but it may be absent on some machines.



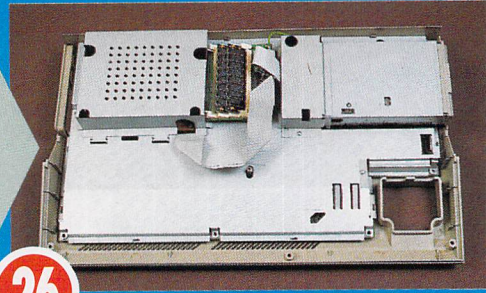
12

Remove the ribbon cable from the disk drive by gently tugging on it. It should disengage quite easily.



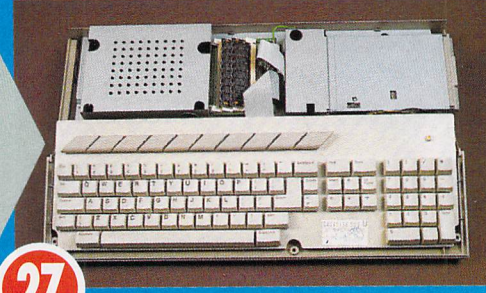
25

Plug the two ribbon cables to the SIMM board with the lugs on the cable uppermost. Connect the green earth cable to one of the screws holding down the power supply shield or the disk drive cover.



26

Stick the board down to the top of the shield using double-sided foam tape and tidy up the ribbon cables so they lie neatly on top of the shielding.

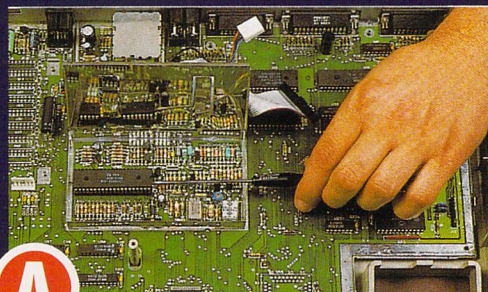


27

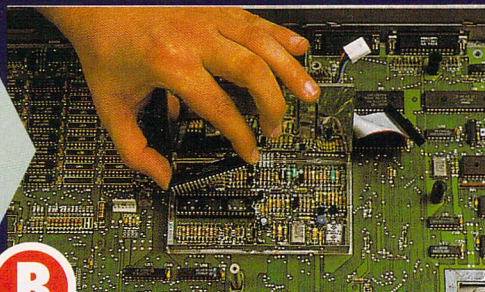
Plug in and replace the keyboard. The cable can only plug in one way around. Replace the top from the right side, ensuring the drive eject button goes into its slot. Keeping a firm grip on the machine, carefully turn it over and replace the screws.

PLUG-IN CHIPS

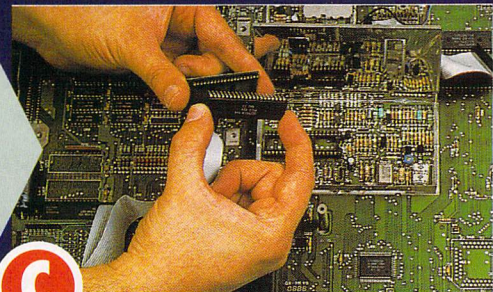
Some machines have a plug-in Video Shifter chip. Here the Zydec board is being installed on one of these. Follow the disassembly instructions as per the Xtra-RAM walkthrough steps 1 to 15.



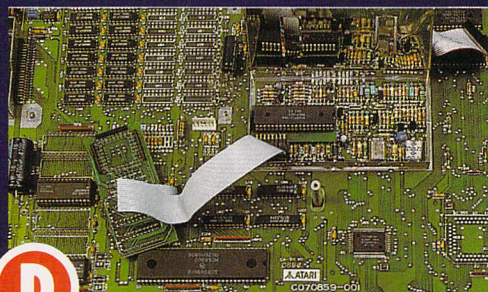
A Locate the plug-in Video Shifter chip in its central housing. Gently slide a small flat-bladed screwdriver between the bottom of the chip and its socket. Pry up the chip, ensuring that you do not touch or bend the legs of the chip.



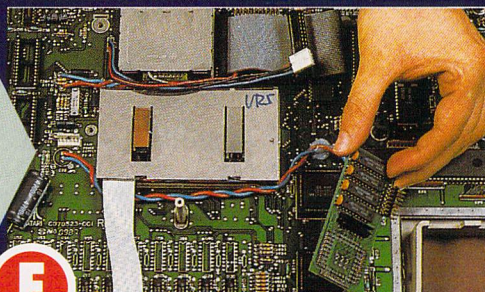
B Gently lift out the Shifter chip, being careful not to touch the legs. Note this board has the non-standard oblong MMU and glue chips.



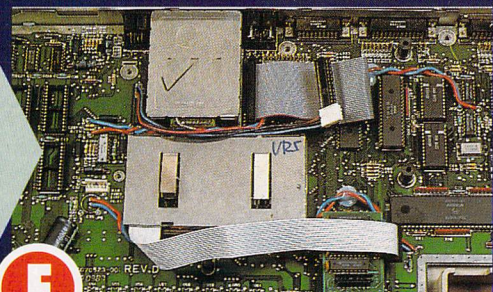
C Insert the chip into the socket on the Video Shifter adapter, ensuring that it is the right way around as described in the installation instructions. Make sure that all the legs of the chip go neatly into the socket and they're not bent.



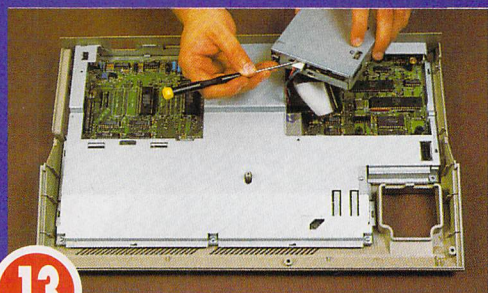
D Insert the adapter into the Video Shifter socket on the main circuit board. Run the ribbon cable out towards the front of the machine and close the lid, ensuring that the cable does not get trapped or cut.



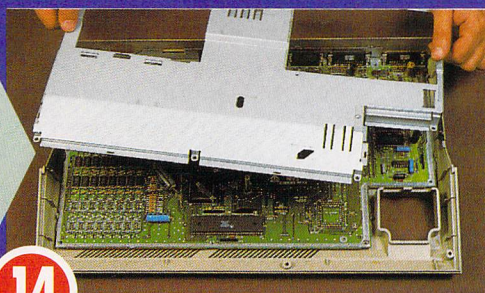
E Locate the MMU chip and remove the clamp, if any. Firmly press the MMU adapter down upon the chip, making sure that it is facing the correct way. Here we've changed boards to a machine with standard chips to show you how the MMU has moved.



F Plug the cable from the Shifter into the MMU adapter and the job is complete. Reassemble the machine as described in the Xtra-RAM walkthrough.



13 You must now remove the power cable from the disk drive. There is a small clip which holds the plug in place – you can open this by inserting a small flat-bladed screwdriver and twisting slightly. The plug should now pull out. Put the drive with the ever-growing stack of components on one side.



14 Remove the upper shield from the machine.



15 In the centre of the circuit board there is a large silver box, containing the Video Shifter chip. Using the pliers twist open the tabs that hold the lid down and open it up.

TURN TO PAGE 2
FOR INSERTION
INSTRUCTIONS

SIMMS FOR STEs

To get the SIMMs into your STE, remove the top of your machine as described in the main step-by-step guide so you have the machine facing you with all the shielding and the keyboard in place. There is no need to remove the keyboard or the disk drive – the only thing that needs to be taken out is the L-shaped section of shield which covers the power supply. Removing this cover reveals the SIMM sockets between the power supply and the disk drive.

Simply insert your two 256K SIMMs into the two empty slots and replace the shield and the top of the machine, and that's it! You now have a 1MByte STE. Upgrading to 2MByte or 4MByte is just as easy: simply replace the 256K SIMMs with 1MByte boards.

JARGON BUSTERS – MY BRAIN HURTS!

MMU – The Memory Management Unit, the chip which controls the running of the RAM inside your ST.

RAM – Random Access Memory, the memory chips where programs and files are stored while in use. When the machine is off all data in RAM is lost.

RAM speed – This indicates how fast the RAM operates and is measured in nano-seconds. The faster the speed the better, and more expensive. Anything faster than 100ns (that is, with a smaller number) is suitable for the ST.

ROM – Read Only Memory, the memory chips containing the operating system.

Shield or shielding – The internal metal casing of the ST. This must be removed to upgrade an STF or STFM. Only the section covering the power supply needs to be removed on an STE.

SIMM – Single In-line Memory Module. A circuit board containing 256K or 1MByte of memory chips. It can be plugged into sockets mounted on the circuit board of STEs and on upgrade boards to be fitted into older STs.

SIPs – Single In-line Package, a variation of the SIMM configuration. If a circuit board has 30 holes instead of a SIMM socket a SIP module must be used. A SIP is a SIMM with legs.

Surface Mounted – This means a chip is soldered directly to the main circuit board and not mounted in a socket.

Video Shifter Chip – This chip converts information from the ST's video RAM into signals readable on a monitor. In 90% of STs the Shifter chip is in a socket and easily removed.

Public Sector

GAMES

VIOLENCE

Riverdene PDL - Disk 982ST



● All right, who was it that mentioned *Xenon 2*? (Um - it was me, wasn't it?) Well, this does look rather like it. Just look at those gun emplacements. Still, *Violence* is a good fast blast with a tough edge for those with a taste for *aliens à la rehash*.

Yes! A Public Domain shoot-'em-up not written in STOS or SEUCK! It shows, too. This blaster is very fast and smooth, particularly the scrolling - there's even some parallax thrown in if you watch the backdrops carefully.

Some real work has gone into designing the sprites for this shoot-'em-up. They've got that professional look - in fact, they look almost exactly like the ones in *Xenon 2*. No sign of originality anywhere but some good stuff on the whole - fast, hard and lots of very intense action (oo (pause) - er). Fine should you feel the need for a good blast but it's not going to test the old grey cells much.

STF Rating - 77%

PD ST AND DEFINITELY NOT RPG BOX

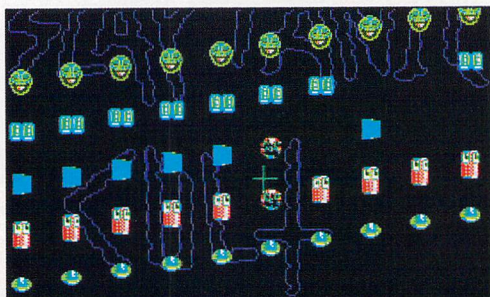
About this time of day we get a craving to know what PD ST's top ten favourite PD programs are. And by an amazing stroke of luck...

- 1 **Fast Copy 3** - GL049. The best copier around. Fast, furry, and unbelievably feature-packed.
- 2 **ST Writer** - GL155. An easy to use and in-depth word processor. Not WYSIWYG, but then, who cares?
- 3 **Ani ST** - GL278. A great animation package. Anything that boasts metamorphic animation can't be bad.
- 4 **Robotz** - GL234. The most addictive game around, save "Whose round is it next?"

- 5 **Eaglestar** - GL297. Huge futuristic adventure. More fun than screaming loudly in church.
- 6 **Double Sentry** - GL236. The all-encompassing accounts program. It even fiddles taxes for you (er, no it doesn't actually - Ed).
- 7 **Supercard** - GL350. The best PD database for the ST. You'll believe a card can fly.
- 8 **Monopoly** - GL185. The classic board game in all its glory - get it before Waddingtons sue.
- 9 **Tennis** - GL034. One of the best sports sims around. No physical exertion needed.
- 10 **Quick Draw** - GL188. Pictionary on your ST. More cries of "What, that's supposed to be a house, is it? Ha ha ha ha ha ha ha ha ha!"

LOBOTOMY INVADERS

Caledonia PDL - Disk STE36



● Oh good, another smooth-scrolling demo with excellent samples. Eh? It's a game? What, you mean those shapes swinging back and forth are aliens, are they? And shooting them is a game? (Stifles mirth.)

First up, note that you need a 1MByte STE for this. Next, note it's written by demo coders Slaytanic Cult, so you can probably work out what sort of game it is - fast, smooth and with good sound.

This is a mutated version of *Space Invaders*. High above the city hang a bunch of aliens which slowly descend towards the buildings. Being aliens, they need to be shot, by you, with a gun - and quickly. It's hard to aim at the aliens - but then, that's the point. Clearing one wave brings on a faster one.

Doesn't sound very interesting, does it? Good, because it's not. Despite wicked samples and some smooth scrolling, this is no more than a demo pretending to be a game. Impressively uninteresting.

STF Rating - 64%

KLAXTRIS

Merton PD - Disk MG47



● Look folks, there are other concepts out there for the taking, you know, as well as *Tetris*. - even if it is called *Klaxtris*. Why not do a 3D version of the *Tron lightcycles* game? How about a decent version of *Phoenix*? Anything! Anything but *Tetris*!

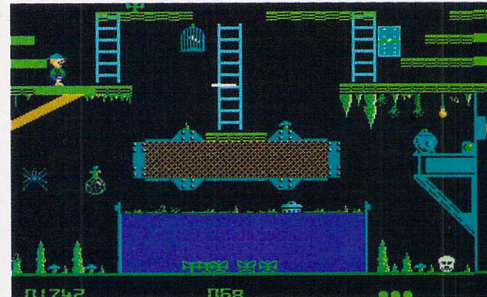
Oh gawd, another *Tetris* clone. But wait! This time it's been crossed with *Klax* to make... *Klaxtris* (bless you). As ever, the pieces fall down but this time in columns of three differently-coloured pieces. The aim is to make a row of similarly-coloured pieces horizontally, vertically or diagonally by rotating the columns and then placing them appropriately. When a row is made those pieces disappear. And so on.

Again, there's nothing really glaringly awful about the game, but it's just very workmanlike and mixes a couple of extremely well-worn concepts with precious little imagination. Bloody *Tetris*. Bloody clones. Bloody hell.

STF Rating - 62%

CLOD HOPPER

Riverdene PDL - Disk BU100ST



● Okay. So it doesn't much look like *Robocop 3*. So it doesn't have the excellent sound effects of *Llamatron*. So it doesn't move like *Starglider 2*. But it's the gameplay that's important, isn't it? Unfortunately there isn't any of that either, so *Clod Hopper* is a bit of a let-down all round, really.

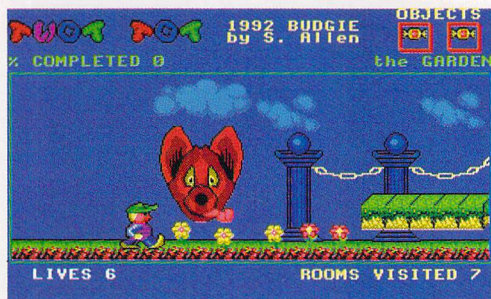
Another interpretation of ye olde cartridge game *Miner 49er* with suitably Vic-20-like graphics. The aim is to cavort about the screen turning all the platforms into a uniform colour by walking over them. Hey, someone's got to do it. Nasties get in the way but can be annihilated by collecting tools and whacking them about the head - while they're in a vulnerable state, obviously. The - er, clod hopper can only fall ridiculously short distances before disappearing in a welter of bad FX.

Graphics and sound are primitive and the gameplay's repetitive. Extremely unlikely to raise anyone's blood pressure much.

STF Rating - 62%

TWOT TOT

Riverdene PDL – Disk BU97ST



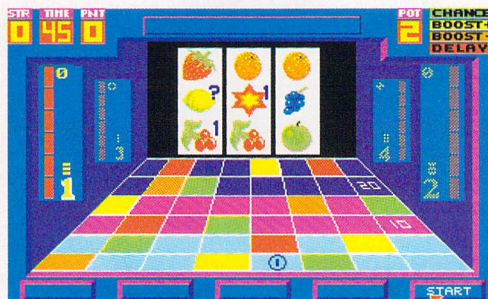
● Well, at least we think it's a dog's head. Either that or some huge red ornamental statue with a toilet roll hanging out of its mouth. *Twot, er, Tot* – *STOS* has never looked more like well, *STOS* really.

Twot Tot? Apparently it's about a kid who's a bit of a... twot. Which might explain why he's wandering about a big old house, followed by a big old garden and a big old cellar, searching for objects to get himself out. You see, there are various exits, but they're all blocked by things like gigantic grinning dogs' heads. The trick is to get the appropriate object and wangle it to the blockage involved in the hope that it moves, enabling you to search further, get more objects and... So it's an arcade adventure, dodging enemies and solving puzzles. The graphics are colourful and smoothly animated, sound is minimal and, on the whole, it's a reasonable little game if you don't feel up to wading through *Pacific Islands*.

STF Rating – 77%

FRUIT PURSUIT

Riverdene PDL – Disk 978



● The orange squares are a representation of futility. The blue ones are a symbol of angst. Red is a simile for missed opportunity, and the lemon means you've got an extra nudge coming. *Fruit Pursuit* – the follow-up to *Vegetable Shadowing*.

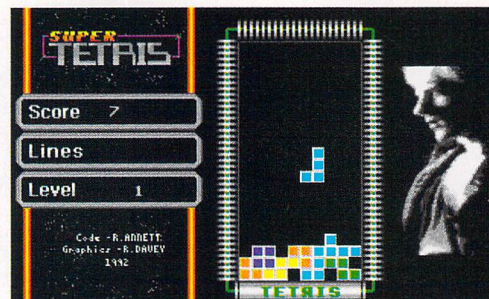
Bit of an obscure concept, this – a fruit machine crossed with a board game. Winning points on the machine means you get the chance to progress further along the board, so you can collect more points, and – er, play the fruit machine some more.

As simulated fruit machines go, this isn't bad. There are plenty of interesting features along with the nudges and holds – the graphics and sound are reasonable too. But why not try this – when (if) you send off your dosh for this Shareware offering, demand that they pay you all the money you've earned so far from the machine in return. That should make people think twice about writing pointless fruit machine simulators.

STF Rating – 73%

SUPER TETRIS

Prophesy PDL – Disk LGM001



● Where are all those TMs then, eh, lads? And what's that geezer doing on the right? Incidentally, have you played Jeff Minter's version of *Tetris*? It's called *Goatris*. Basically, what happens is that whenever a shape appears you shoot it, unless you get the Alpaca bonus, in which case it shoots you. Cosmic.

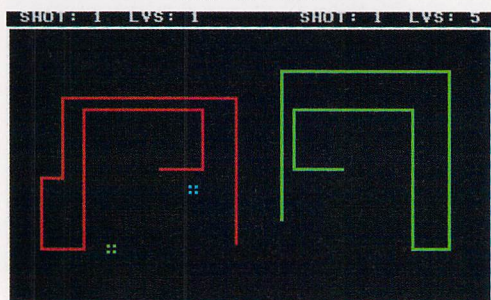
Actually, there's very little *Super* about this at all. It's a bog-standard version of *Tetris*, the only difference being you pull down on the joystick to speed up the piece's descent rather than dropping it in one move. Yes, it's joystick controlled. Oh dear.

There are some samples, a digitised picture or two and some bugs thrown in for good measure (the never-ending sound effects, for instance), but, on the whole, what we have here is nothing more or less than *Tetris*. And doubtless coders Talos Software are about to have their bottoms sued off for using that sacred name without permission.

STF Rating – 67%

SUICIDER 2

Crown Soft – ST122



● Old as the hills and almost as grassy. Er, no, hang on. Old as the hills, but not quite so rocky. There's an appropriate metaphor here somewhere... oh, forget it. Old as the hills but still jolly good, that's *Suicider 2*. (I could be an ad copywriter, me.)

Three games here. *Parachute Attack* is a little shooty number. Swivel a gun in the middle of the screen and take pot shots at passing air traffic, which then spits out a parachutist or two. If these land on you, you've had it. A pathetic game with nothing to recommend it.

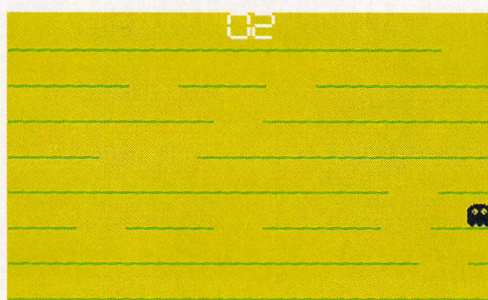
Skirmish has two tanks sitting either side of a hilly bit firing shells at each other by altering their turret's power and angle of elevation. The game looks and plays like a mid-1982 Spectrum version, only without the fun. And the speed. And the graphics.

Suicider 2 is better, a Tron lightcycles game in which you and an opponent (or your ST) whizz around an arena, trying to avoid the trails you leave behind. Simple, dated and enormous fun with two players.

STF Rating – 56%

PIPELINE

Riverdene PDL – Disk BU95ST.



● An actual ST screenshot, as they say on games boxes. Incredible, isn't it – ten years of computer game evolution and this is what we get: *Jumping Ghost*. Yes, but you should see the speed at which the platforms move. Scorching.

Deuce is a recreation of that ancient game where you flip cards in pairs and try to find a match by remembering where they are against a time limit. Passable.

In *Jumping Ghost* a ghostie has to jump up through gaps in a series of moving platforms. A waste of time – nice soundtrack, though.

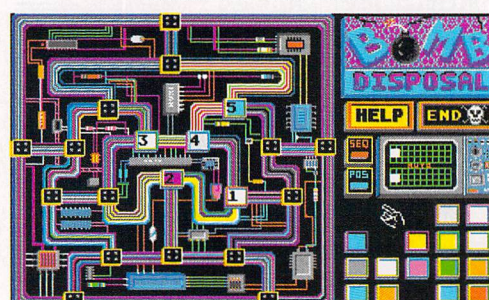
Pipeline is a cross between *Tetris* and *Pipe Mania*. Bits of pipe fall down the screen and you move them into the right position to make an unbroken pipe. The mouse buttons respond too slowly for you to position things in time, making the game unplayable.

Finally, there's a version of the sliding square puzzle where you rearrange letters into order, attractively called *Letters*. Competent, but the real thing is easier.

STF Rating – 54%

BOMB DISPOSAL

Riverdene PDL – Disk BU99ST



● *Bomb Disposal*: we went by the colours of the wires. We translated it all into Finnish, into Morse code and played it backwards using an accordion. We thought. In the end we gave up and made some amusing telephone numbers using the diodes.

What the hell is going on here? This is supposed to be a game of logic, but there doesn't seem to be any logic to it at all. You have to place diodes in a "bomb" by picking them up in the correct order and placing them on the bomb in the right order. You're supposed to be aided in doing this by bar graphs that appear after every placement showing you how close you are in both position and sequence.

This is all incomprehensible. The only instructions are in the game and they skip over the rules with such abandon you don't have a clue what's going on. The best minds of the *FORMAT* office have been on the case and we still can't understand it. Looks like it might be fun if you're the programmer or just insane.

STF Rating – 23%

DEMOS

IMAGINATION DEMO

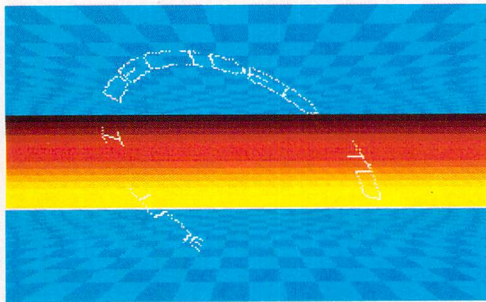
Riverdene PDL - Disk 983



● The *Imagination* demo from the Dynamic Duo has more than just the usual sine waves – included is this whizzo fractal flight generator with variable controls.

LIGHTSPEED DEMO

State 808 PDL - Disk MDEM 54



● A rather flashy rotating scroll line from the *Lightspeed* demo. Some of the language is a little fruity for no apparent reason – a bit pointless.

DECADE DEMO

MT Software - Disk D89



● Nestling in otherwise standard fare of the *Decade* demo, is the *Quartet* screen with 25 songs and 90 minutes of really rather reasonable riffs.

A megademo in the classic mould. Guide a unicycle around a *Cadaver* style world searching out the 11 sub demos. You really need to make a map which is a bit of a pain – looks good, though. The sub-demos are an interesting mix with some juicy 3D swooshing about and a complete shoot-em-up. Unfortunately, it plays like a pig – still, it beats yet another screen of mindless greetings. With a lot of demos, you plough your way through each section because you just have to see what's in each bit, but with *Imagination*, the incentive is the possibility of a genuinely groovy chunk of code. Good going, dudes.

STF Rating – 83%

After a couple of sampled songs – including a Christ-massy montage – it's into the demo selection screen and the megademo proper. You enter the sub-demos by moving the familiar sprite around and pressing the Spacebar in front of the various doors. There are about a dozen little demos with scroll lines, rasters and full screen stuff which is all cleverly coded. There are some good screens among the usual wibble, including a few attractive raster effects from the *Untouchables* and *Torment*. Far too many scroll lines and a fiddly selection screen let things down a bit. The sound has you reaching for the volume to turn up the good sampled bits and turn down the manic chip bleeps. Not bad all round, but the format is getting jaded.

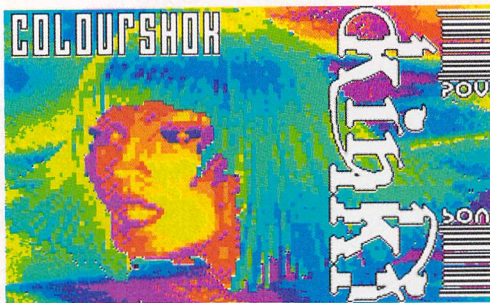
STF Rating – 75%

Megademo time again. Guide the sprite over the background to the doors and press the Spacebar to enter the 14 unsurprising sub-demos. The sound goes bleep-bleepty-bleep, little ball sprites follow each other about and some scroll lines wibble past, peppered with the odd swear word. Some good efforts, but nothing overly original or outstanding. There are quite a few sync problems, too. The *Quartet* screen lifts this effort from the fairly mundane into the quite reasonable. If you want scroll lines to be read, they should be short and reasonably easy to make out. Above all, they should be interesting – otherwise, why bother wibbling them past the viewer?

STF Rating – 72%

POV OZ SLIDESHOW

Prophecy PDL - Disk DEM 136



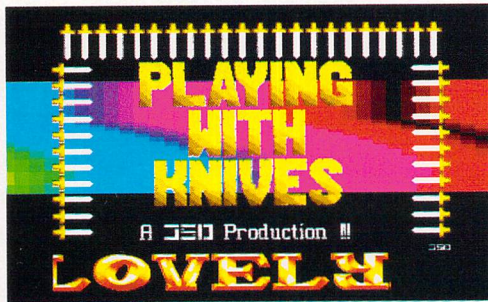
● The *Oz Slideshow* from *Persistence of Vision* brings you a mass of well-polished hip graphics and music to a small screen near you. For what's essentially a slideshow, it really is jolly good.

Simple but effective slideshow with a mean tracker accompaniment. The piccies are original and interestingly colourful, and the music's thumpy and worth twiddling the volume up for. There are two different shows to watch, each with its own music and a good few screens – er, that is, less than 100 and definitely more than two. Not exactly mind expanding, but it's good to sit back and gawp at.

STF Rating – 71%

PLAYING WITH KNIVES

State 808 PDL - Disk SAM 22



The intro screen from the *Playing with Knives* demo – all you have to do press the Spacebar to get into the house zone. The music has been spliced together from a CD called "The Ultimate Rave – 20 of the hottest dance tracks that were ever assembled on one CD. No joke – this really is the best collection in all time. Honest." Or something similar.

Hey! What's this? It's got a good beat! Yo! It's more of that housey business complete with a few flashing visuals. Some cat repeats a couple of phrases about feeling good and moving your body, while a woman does a bit of high pitched wailing. Most of the graphics have been created with *Ripples* – see STF 29 for our review (and if you don't have a copy, turn to page 44). It's pleasant enough, though it needs a less boring song and some original graphics to beat the *Red Sector Megademo* at this game. 1MByte STs only – you need to be packing the extra these days to run most decent demos.

STF Rating – 69%

WASTED YEARS

Nightshift PD - Disk DEMO 18



● It's refreshing to find a demo without a house beat in it. The *Wasted Years* demo is heavy metal and none the worse for that. It was put together for something called "Le salon de la micro." Sounds foreign to me.

The *Overlanders* bring you a bit of thrash and scroll lines to read with a few little piccies thrown in. The sample is by some bunch called *Anthrax* – sound like a friendly lot, don't they? It's replayed at 10MHz and is good and clear(ish). The scroll line doesn't say anything very interesting, but you always seem to find yourself reading the things. Not top notch, but worth a look if you find it in a pile of disks.

STF Rating – 67%

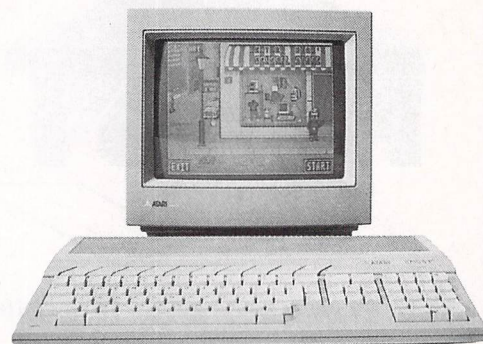


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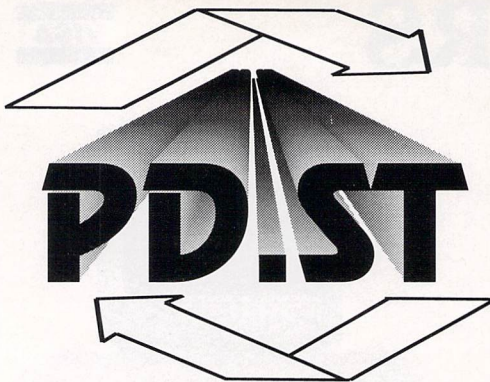
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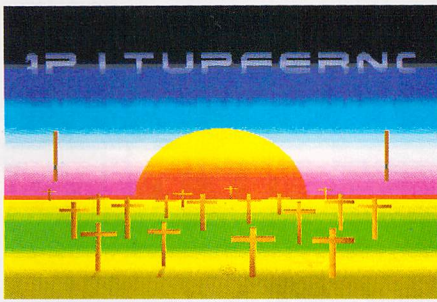
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→ AFTERMATH DEMO

Prophecy PDL – Disk STE 18

The Slaytanic Cult buck the house trend again and let some wanging, chugging guitars loose. The *Aftermath Demo* is heavy, thrashy and in the best possible taste. It's STE only and you also need at least 1MByte of memory for this. The samples are extremely long and, if you listen to them backwards, they sound somewhat strange. All in all, it's a pretty straightforward demo, but well put together. Jolly good stuff.

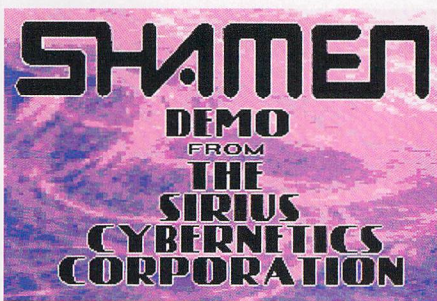
STF Rating – 65%

● What is it with heavy metal and satanism? Some sort of unholy alliance? Or is it just an adolescent male fantasy that was designed to annoy your parents? The *Aftermath demo* boasts a range of colours that only STEs can reach, as well as some cast iron axes.

SHAMEN DEMO

New Age PDL – Disk DEMO 92

An ST version of a song from those clean-cut young lads, the Shamen, squeezed onto a disk by the Sirius Cybernetics Corporation. Turn it up 'cos the song is seriously crunchy. It's a 1MByte only effort, sampled at 44MHz and then squished down twice to 11MHz. The song is built up of small clips from the record pasted together. The quality isn't bad, apart from a few clicks here and there. Groovy song, average samples and a waste of time after a listen or two.

STF Rating – 59%

● "I can mooowooove any mountain." A classic bit of indie-windy sound gets the sampler treatment from the Sirius Cybernetics bunch. Satisfactory job, but not really at the cutting edge of ST demos – all it is really is a static screen and a sampled ear-bash.

RADIO GAGA

Nightshift PD – Disk NS 13

Another sampled song demo – a cut and paste job on the Queen number. It's an almost completely instrumental version with a couple of radiooo's thrown in. There are a couple of glitchy jumps, but otherwise a smooth, good and clear bit of sampling. As with most of these sampled productions, you need a 1MByte ST. If you like the music that much, get the record – listening to it on your ST shows off its sample playing, but nothing else – this sort of stuff hardly stretches the performance envelope. You probably won't want to boot it more than a couple of times. Doing a good copy of someone else's work is easy enough – if the music was original, it would be a different ball game.

STF Rating – 60%

● An exclusive production from Nightshift – *Radio Gaga* is harmless bit of quality sampling. This is the only visual and nothing wiggles, though the ears get a little workout.

THE ULTIMATE MUSIC DEMO

Riverdene PDL – Disk DEM 980

Let's be honest, the basic ST sound chip is not a fantastic piece of hardware. While we're being honest, how about some of the music that's programmed for it? Er, yes. Frankly, a lot of it is, well, crap. This demo has four dozen pieces of warbling chip bleeping on one menu and you're going to wish it doesn't. It claims to have 1.5MBytes of music and, if you get a fraction of the way through it, you're doing well.

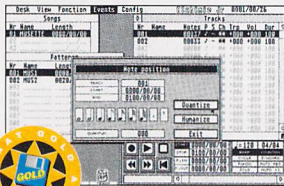
STF Rating – 45%

● Use the cursor keys in the *Ultimate Music* demo to select which piece of chip music from hell you want to listen to. Then make a cup of tea, pop to the corner shop or, at the very least, hide under the table with a bag on your head. You did want a bag on your head, didn't you?

MUSIC

ALCHIMIE JUNIOR

Caledonia PDL – Disk MU 55



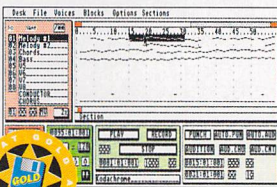
● *Alchimie Junior* is a professional quality sequencer with a full range of editing tools.

A 16 track MIDI sequencer, with a smooth interface and bags of features. You need 1MByte and a mono monitor to get it started. Oh – and don't forget you need a MIDI instrument of some kind. The main controls are familiar – tracks can be quantized, copied and generally fiddled with. Up to 16 songs can be created from up to a maximum of 256 patterns. Each function has its own window and everything is easy to use. To get better than this, you need to prise open your wallet a lot wider.

STF Rating – 94%

ACCOMPANIST

Riverdene PDL – Disk MUS 569



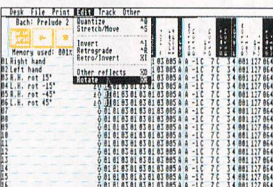
● The *Accompanist* is an extremely simple and powerful 16 voice sequencer – the latest version can import standard MIDI files, too.

One of the most famous bits of Shareware MIDI software and recently upgraded to v2.4, the *Accompanist* is a cracking program. It's not as complicated as most sequencers, so is easier to get to grips with. It runs on all STs in colour as well as mono, and there's room for 10,000 notes on a 520. To help you on your way, there are manual and tutorial files to go through. If you register you get lots of goodies in return and will sleep soundly.

STF Rating – 91%

FRACTAL MUSIC

ST Club – Disk DEM 60



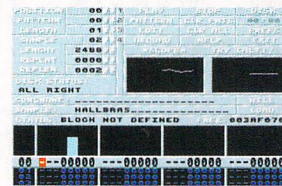
● Enter the nutty world of fractals-for-your-ears with *Fractal Music*. This is a cut-down version – the full job earned itself a rating of 86% back in *STF* 28.

A demo of a cunning program that uses the principles of fractal maths to create sounds and, hopefully, music. Fractals are very simple iterative equations using complex numbers to produce wacky results. There are a few limitations – no load or print and it stops after seven and a half minutes, but there's still enough here for you to get a good feel for the real thing. It works on 16 tracks and has loads of manipulative tools for fine tuning the resulting chaos. Worth a look for the novelty value.

STF Rating – 77%

PAL TRACKER SAMPLES

EMPDL – Disks MAM 26 – 30



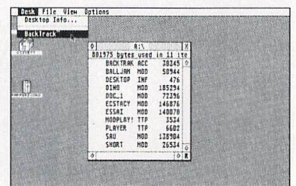
● Each of the *PAL Production* sample disks has a copy of the megatrackerastic *Noise-tracker* to arrange the samples in a sort of song-type way.

Tracker programs need lots of samples – it's not much use having a brilliantly original slice of sound to lay on the public if it uses the same old samples. Enter stage right – disks full of them – and good ones, too, that are all ready to go. There are the usual drum and bass sounds, as well as some luvverly synth noises and weird waves. There are between 70 and 100 on each disk. If trackin' is your kick, check these out.

STF Rating – 75%

BACKTRACK MODULE PLAYER

Caledonia PDL – Disk STE 34



● If your press your ear up close, you can hear *Backtrack* strutting its stuff and playing a funky tracker tune in the background. Honest.

There are a few programs that play an irritating chip tune in the background while you get on with your word processing or whatever. *Backtrack* takes this a sizeable step further and plays tracker modules. Tracker stuff is all samples and sounds a zillion times better. There are seven modules on the disk and jolly groovy ones they are, too – some wild samples and mixes. It's a bit of a gimmick and slows down the processor somewhat, but it's good for a laugh.

STF Rating – 74%

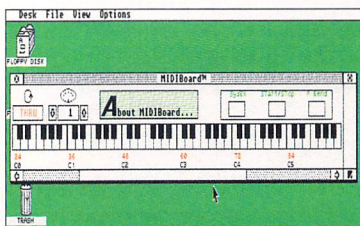
MUSIC MATRIX
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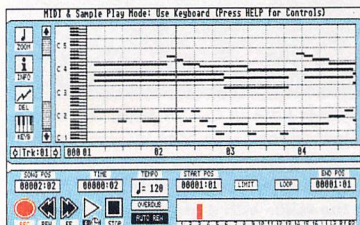
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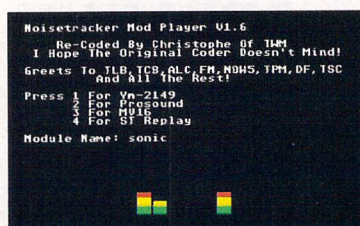
● The price of decent MIDI hardware is coming down with nifty synths knocking around second-hand for a song. Good software is another matter, but *Music Matrix* plan to put that right and teach you a few things as well.



● *MIDIBoard* runs in high or medium resolution and shows incoming MIDI data on a keyboard from C2 to C8. You can fiddle about with the MIDI channel and select MIDI through to pass on the notes to another black box of tricks.



● This selection of standard MIDI files is just ideal for loading into *Sequencer One* – which we gave away on Cover Disk 30 – and sussing out how things hang together. It appears to be made up of little lines – wow!



● No matter what you do, you end up staring at the little VU style meters while you listen to the Watchmen's tracker modules truckin' on down. Don't you think that's spooky, eh?



● *Audio Light* is an average effort musical slideshow with a few adverts thrown in for the programs that created it. The graphics are passable, but the music slightly less so.

MUSIC MATRIX

ST Club – MID 16

A disk magazine aimed squarely at the MIDI musician, this is a demo copy of the quarterly magazine. It sells itself as an educational and informative tool promising all sorts of exclusive groovy goodies. On the demo disk are *FaST Basic*, *GFA Basic* and *ST Basic* listings along with runner programs, MIDI sequences and assorted bits 'n' bobs. You need a decent MIDI setup to make any use of it all. Budding musos with a technical bent should take a butcher's.

STF Rating – 72%

MIDI BOARD

ST Club – Disk DMG 27

A clever little Desk Accessory that shows graphically what incoming data is being squirted into your MIDI ports. Ideal for testing out your MIDI setup, finding out MIDI note numbers and all that system exclusive stuff. Because it's a Desk Accessory, you can use it from within your sequencer. Also on this disk are over 1.4MBytes of compressed programs – everything from games to handy little utilities including a simple number to test your MIDI leads.

STF Rating – 70%

MIDI FILES

Arrow PD – Disk MID 14

Got a sequencer? It's all a bit confusing at first, really – all those functions and buttons. One of the best ways of learning what to do is to take apart somebody else's MIDI files. Here's a whole bunch to work on – 49 of the little devils. All sorts of bits and bobs from classical bits by dead dudes with funny names, to poppy numbers. They're all in standard MIDI format and can be loaded into any halfway decent sequencer. They vary from a few K to over 40K. Now, how about a kickin' bass line over the top of *Für Elise*?

STF Rating – 67%

THE WATCHMEN MODULES DISK 11

Riverdene PDL – Disk DEM 948

How do you fancy a copy of the *Noisetracker* module player and six modules? Well, here it is, put together by the Watchmen. The tunes are on the weird side of strange, and rather uncoordinated. There are some spacious samples and eerie bits, but they are generally uninspiring. The player program can output through your monitor or through the cartridge port using *Prosound*, *ST Replay* or the MV16 cartridges for better sound quality.

STF Rating – 65%

AUDIO LIGHT

ST Club – Disk MID 3

Audio Light is a slideshow with popular classics wibbling away using the sound chip. They're not bad renditions, but the hardware isn't up to the job. For a better aural treat, the music's also sent out through the MIDI port, so you can assign some meaty synth sound to it. Not a show you're going to watch more than once. Dull, although probably not deadly.

STF Rating – 48%

The *FORMAT* PD directory

● Where to go for Public Domain software – demos, games and utilities for around £3 a disk! If you write to any of these libraries for a catalogue, enclose an SAE.

● Budget games are available from all PD libraries indicated by a (B). Simply mention the disk number (above the review) when you order the disk.

SOUTH OF ENGLAND

Arrow PD, 6 Kents Orchard, Perry Street, South chard, Somerset TA20 2QB

Atari Advantage, 56 Bath Road, Cheltenham GL53 7HJ ☎ 0242 224340

Awesomedemos, 3 Mason Road, Seaford, East Sussex BN25 3EE

B-Soft, 2 Oliver Drive, Calcot, Reading, Berks. RG3 5XN ☎ 0734 419981

Drake PD, 12C How Street, The Barbican, Plymouth Devon, PL4 0DA

Elmsoft, PO Box 17, Loughton, Essex IG10 2EE

EVDP, 15 Cleve Road, Gotherington, Cheltenham, Glos. GL52 4EW

Freaks PDL, 29 Leap Valley Crescent, Downend, Bristol BS16 6TQ ☎ 0272 570122 (B)

Gemini Shareware, 10 Warwick Avenue, Slough, Berks. SL2 1DX ☎ 0753 28183

Imageart, 19 Brenda Road, Tooting Bec, London SW17 7DD ☎ 081 767 4761

MT Software, Greensward House, The Broadway, Totland, Isle of Wight PO39 0BX ☎ 0983 756056 (B)

Merton PD, 10 Gasmere Avenue, Merton Park, London SW19 3DX

New Age PDL, 30 Anderson Estate, Lower Road, Hockley, Essex SS5 5NG ☎ 0702 232826 (B)

Paradise Computers, 11 Winfield Avenue, Patcham, Brighton, East Sussex BN1 8QH

PD Essentials, 22 Fern Avenue, Mitcham, Surrey CR4 1LS

ProBUS, Birch Hill, Sway, Lymington, Hampshire SO41 6BJ

Prophecy PD, 390 Coulsdon Road, Old Coulsdon, Surrey CR5 1EF ☎ 0737 554536

Public Dominator PD Atari, PO Box 801, Bishops Stortford, Herts. CM23 3TZ ☎ 0279 757692 (B)

Public Sector PDL, 50 Ripon Road, Stevenage, Herts. SG1 4NA ☎ 0438 364722 / 361324

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berks RG3 5AN ☎ 0734 452416 (B)

Senlac, 14 Oaklea Close, Old Roar Road, St Leonards On Sea, E. Sussex TN37 7HB ☎ 0424 753070

Seven Disk, Digswell Water Lodge, Digswell Lane, Welwyn Garden City, Herts AL7 1SN ☎ 0438 840456

Softville PD, Unit 5, Stratfield Park, Elettra Avenue, Waterlooville, Hants PO7 7XN ☎ 0705 266509 (B)

Solent Software, 53 Rufus Gardens, Totton, Hants. SO4 3TA ☎ 0703 868882

South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD (B)

ST Adventurers PDL, 32 Merrivale Road, Rising Brook, Stafford, Staffs ST17 9EB

Warzone PDL, 53 Ropewalk, River Street, St Judes, Bristol BS2 9EG

Wizard PD, 178 Waverley Road, Reading, Berks. RG3 2PZ ☎ 0734 574685 (B)

NORTH OF ENGLAND

Alpha Computing, 32 Meadow Drive, Halifax, W Yorks HX3 5JZ

Akore Shareware, 7 Fishergate Point, Lower Parliament Street, Nottingham NG1 1GD ☎ 0800 252221

D W Stables, Unit 1, Johnson's Shopping Centre, 29-31 Bond Street, Blackpool FY4 1BQ ☎ 0253 404550

EM PDL, 54 Watnall Road, Hucknall, Nottingham NG15 7LE ☎ 0602 630071

Goodman PDL, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffs ST3 1SW ☎ 0782 335650 (B)

LAPD, 80 Lee Lane, Langley, Heanor, Derbys. DE7 7HN ☎ 0773 761944 (B)

Metropolis PD, 38 Howick Park Drive, Penwortham, Preston PR1 0LU ☎ 0772 748422

Nightshift PD, 50 Averill Road, Highfields, Stafford Staffs ST17 9XX

Page 6 Publishing, PO Box 54, Stafford ST16 1DR ☎ 0785 213928 (B)

PD ST, 95 Elton Road, Sandbach, Cheshire CW11 9NF ☎ 0270 762520 (B)

ST Club, 2 Broadway, Nottingham NG11 1PS ☎ 0602 410241 (B)

Sting Public Domain, 23 Manor Grove, Westvale, Kirkby, Liverpool L32 0UZ ☎ 051 546 4640

The Source PD, 7 Shearwater Lane, Norton, Stockton-On-Tees, Cleveland TS20 1SH ☎ 0642 550896

Tower PD, PO Box 40, Thorton-Cleveleys, Blackpool FY5 3PH

TruST PD, 18 The Park, Southowram, Halifax, HX3 9QY ☎ 0422 341606 (B)

SCOTLAND

Caledonia PDL, 250 Oldtown Road, Hilton, Inverness, IV2 4PT ☎ 0463 225736 (B)

The Circular PD Library, 14 Morrison Drive, Lennoxtown, Glasgow G65 7BA

Floppyshop ST, PO Box 273, Aberdeen AB9 8SJ ☎ 0224 312756 (B)

Office Choice, Suite 14, Avon House, Town Centre, Cumbernauld G67 1EJ (B)

State 808 PDL, 3A Old Lanark Road, Carluke, Scotland ML8 4HW

WoolleySoft, Humblesknowe Cottage, Ramolye, Dunblane, Perthshire, Scotland FK15 0BA

WALES

Shoestring Software PDL, 78 Carmarthen Road, Swansea SA1 1HS

OVERSEAS

Algemene ComputerClub Nederland (ACN), Postbus 5011, 200 CA Haarlem ☎ Holland 023 351100 (B)

Atari ST User Group Norway, c/o SA Jensen, N-3630 Rodenberg, Norway

Dom' Pubs, 10 Rue du Vergeron 38430 Moirans, France

Public Domain Corporation, 4320 – 196th SW, Suite B-140, Lynnwood, WA 98036-6721, USA ☎ 0101 206 745 5980 (catalogue £1)

ST-PLUG, 1670 Heron Road, Box 22026, Ottawa, Ontario, Canada K1V 0C2 ☎ BBS 0101 613 731 2779. (B)

Wacko Software, Willem Pijperstraat 63, 1077XL Amsterdam, The Netherlands

BUYER BEWARE: Inclusion in this directory does not imply that *ST FORMAT* endorses or recommends any individual PD Library in any way.

● If you run a PD library not listed here and wish to be included, or if you are already listed and want to amend any details, send full details and a copy of your latest catalogue to: PD Directory, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW

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SOUNDTRACKER MODULES

All Soundtracker disks come with the ESION player program for both the ST and the STE. Those marked E are STE only.

TRAC 6 - Tune One, Art of Noise, Chantmix, Deadlock, Dragnet, Rainbow, Popcorn, Wonder Chicken
TRAC 11 - Clothes, Compica, Endtheme, Hi-energy, Hunters, Jackdance, Scratch, Magic, SLL9
TRAC 20 - Altair, Blumom, Clutch, Disco, Einstein, Megamix 88, Shortpsh, Symphaze, Song, Flash 4
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TRAC 49 - Berry, Close, Depress, Doc II, Eagles, Eg, Enemies, Eslon, Going, Goodlife, Hdance, L-around 'E'
TRAC 50 - Got-ya, Home, How-deep, Intuition, Jaw, Jumping, Killer, Link, Night, Ns-speed, Official 'E'
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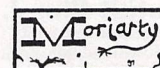
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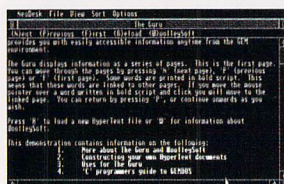
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UTILITIES

GURU

The ST Club - Disk TMP.08



● The first **HyperText** Desk Accessory for the ST: all the information you want is available at the touch of a button.

Guru is a Desk Accessory based on HyperText - a system of linking screens of related information together. You can access information from any GEM program or you could use it as an on-line help file.

This program has the potential to be very useful in all kinds of applications where instant access to on-line information is required. Imagine creating your own relational database where you just click on a name or a line of text to go to any information related to the subject. There is a message between each screen in the PD version. If you want the full version, register for £10.00 with Woolleysoft - see the PD libraries listing on page 38. As well as a message-free version, you get additional documentation, the latest upgrade of Guru and you're notified of any further upgrades.

STF Rating - 85%

STDCAT V5.0

The ST Club - Disk TMP.06



● **STDCAT's** disk reading dialog box - catalogue hard drive partitions and floppy disks here.

STDCAT is the familiar disk catalogue creation utility and v5 is now available as Shareware. It is a major re-write of the original, although it still imports old CAT files from its previous incarnation. Each catalogue can be split into different sections - you could set up a catalogue of your PD disks and split it into sections for utilities, demos, MIDI, word processing and so on. All fields can be highly customised, output can now be made directly to an ASCII file on disk as well as on hard-copy, data on individual files can be displayed and comments can be added to files and disks. Individual disk directories can be cut from a catalogue section and pasted back into a different order - or be pasted into a different section. By doing this you could restructure your old CAT files into sub-sections to suit your changing requirements. This program is a great improvement and it is well worth the registration fee of \$15.

STF Rating - 82%

MULTI LANG

Floppyshop - Disk UTL423



● **Multi Lang** could be very useful for looking up swear words in Norwegian.

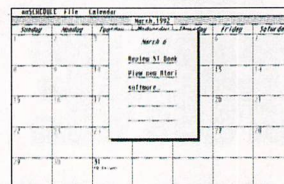
Multi Lang is a language conversion program that runs as a Desk Accessory enabling you to translate words between up to nine different languages. Although not designed to perform translations on the fly, the program can help you out if you're struggling with German or French document files or strange commands in foreign programs.

The language database can be updated using a normal text editor, so new words can be translated and added at any time. Words need not be added for all languages covered in the database at the same time - if you don't know the Norwegian for pig's bladder when you're updating the dictionary, you can add it when you've entered the French and Latvian versions. A useful aid if you have a bi-lingual software collection.

STF Rating - 78%

ON SCHEDULE

Probus - Disk Busapp5.pbs



● Entering data for those important meetings in the **On Schedule** program.

This disk contains a small collection of utilities: a diary program, a scheduler and a telephone STD code finder. The schedule program is the best item on this disk and is designed to ease organisation of work schedules and employee shifts. Running in high res only, a calendar of the current month is displayed on-screen and data can be entered into a date by clicking on it - this brings up a small dialog box you can enter information into. Once you've entered and stored this information, you can print it out either as an ASCII or graphics dump, or save it as a Degas file. The program is very versatile and remarkably easy to use. Ready printed Readme files are also included.

STF Rating - 77%

STABLOID

PREVIEW

Prophecy PDL - Disk MAG005



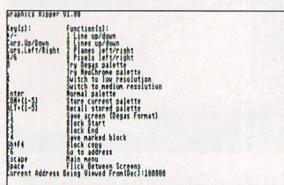
● The unique graphical interface of **Stabloid** from Aenigmatica, a group of Dutch demo coders.

Stabloid is a disk magazine presented in a colourful graphical shell put together by various demo groups in Holland. The object of the magazine is to bring reviews, news, utilities and useable demos of commercial software to all ST owners in an informative and fun-to-read way. If the actual magazines are as good as the preview version, they will have done this. You access different sections via large friendly icons down the left side of the screen and text appears in the large area to the right. It isn't possible to access all the options of the preview copy, but what was on display was very good - a mixed bag of news, screenshots and reviews. This disk magazine definitely has a future.

STF Rating - 74%

PROBEST

Merlin PD - Code MPD0482



● The **Probe ST** program is a ripper cartridge on a disk, so where do you plug it in?

Probe ST is a suite of integrated Shareware utility programs which can be used like ripper cartridges - they can search through data files on disk to extract music and picture files, and other information. The options comprise a music ripper, a graphics ripper, a disk operation utility, a comprehensive search option, a memory and disk editor and a virus protection utility.

The program can be used to search through memory for data, or to search through files direct from disk to find data. The program is quite complex and has many options to assist with delving into disks and memory, so the Readme file is essential. Useful for discovering how other programmers do their work, but not for learners who want to alter data on disk.

STF Rating - 72%

EASY TEXT PLUS SUPPORT DISK

Caledonia PDL - Disk DTP 17



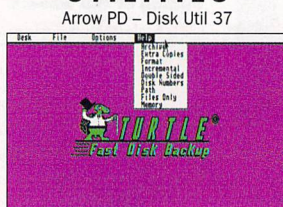
● Just some of the many styles of text that can be used by GDOS from **Easy Text Plus** to enhance print quality.

This disk is packed with fonts you can use with *Easy Text Plus* or other GDOS programs. The fonts include Chancery Italic, Savings, Counter Points, Venice and Athens, and some converted Mac fonts. To make things a bit easier for the novice GDOS user, there are appropriate ASSIGN.SYS files on the disk for each set of fonts. Also included on this disk is a utility to convert IMG files to Degas PI3 format for importing into other drawing and DTP packages. A very useful addition to your low cost PD or Shareware DTP setup, but not much use otherwise.

STF Rating - 69%

HARD DISK UTILITIES

Arrow PD - Disk Util 37



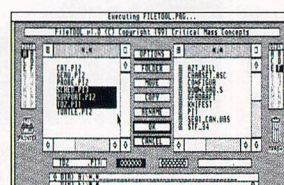
● The main menu from the **Turtle** backup program - it doesn't look like much, but this critter has hidden depths.

This disk is purely for hard drive owners - it is of no use to anyone else. Perhaps the most famous program on the disk is the *Turtle* backup program - and it's worth getting the disk just for this. Even though *Turtle* is now over four years old, it is still one of the most reliable backup utilities you can get, enabling you to make a copy of all your vital data from your hard drive to floppies. This disk also has a fix for the 40 folder bug, a directory counting utility, another backup program and the *Supra* hard disk utilities. Very specialised disk that's extremely useful for hard drive owners.

STF Rating - 68%

FILETOOL

ST Club - Disk DMG.27



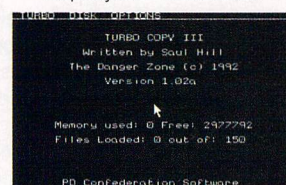
● The **Filetool** main display which enables you to move files with consummate ease.

enabling you to muck about with your disk files in any old manner. Either of the fileselectors can be the source or destination drive, and you are not restricted to using floppies - you can act on any hard drive partition. There are several options in the program: you can move files, rename files, create folders and copy files. It's quite intuitive to use, but suffers from a couple of drawbacks. The Rename option only enables you to rename a file with an empty string. The program also automatically looks for drive A and drive B when booted from a hard drive; it should display the drive it was booted from. It's a bind being asked to confirm every file copy. A potentially useful tool which just needs a bit of extra work.

STF Rating - 55%

TDZ UTILITIES

Prophecy PDL - Disk UTL014



● The rivetting display of the **Turbo 3** file copying utility - we told you it was good!

A collection of five utilities from The Danger Zone mostly written in STOS. These are two file packers and unpackers, a document displayer, a picture file fade and mix utility and a file copying program. Perhaps the most useful of the utilities is the *Turbo 3* file copying program - it is not actually designed to copy disks, but it can store up to 150 programs or files at once to be copied onto other disks (memory permitting). This could possibly be used for sorting files onto new disks - not the most elegant solution to sorting disks, but it just about works although it's as easy to use a RAMDisk. Basically, a disk of good ideas which have been badly implemented. The document file reader appears to be a poorly written copy of the *Hitchhikers Revenge* displayer with pathetic burly music added for a touch of class.

STF Rating - 44%

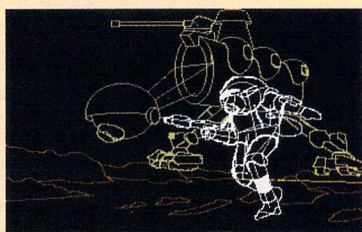
THE KANDY COLOURED TANGERINE FLAKE STREAMLINE PICTURE SHOW



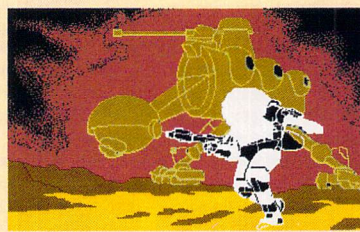
THE SPACEMAN WENT TRAVELLING

PRIZE
£25
WINNER

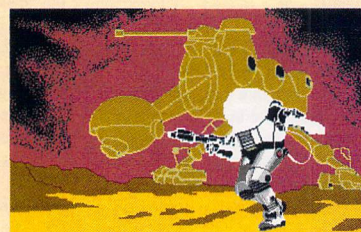
Mark Deighton of Enfield appeared back in issue 32. And now he's appearing again, because he's very good – so good he's won this month's £25 prize. He's still using *Neochrome* because he finds it easy to create pictures with.



1 “I chose a palette with contrasting colours to give the impression of more than just the usual 16. With the Line and Circle tools, I drew the shape of the assault craft. I drew the spaceman in freehand using the Pencil.



2 I sprayed the background using different sizes of nozzles and then filled it along with the other areas using the main colours and the Paint Pot option.

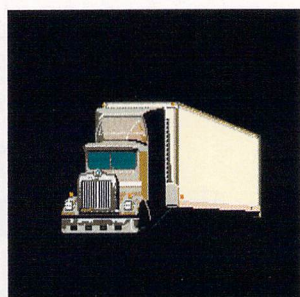


3 Using the Magnify screen and a pencil, I started to pick out the spaceman in detail. This was done pixel by pixel – it took a long time, but it was rewarding.

KEEP ON TRUCKIN’

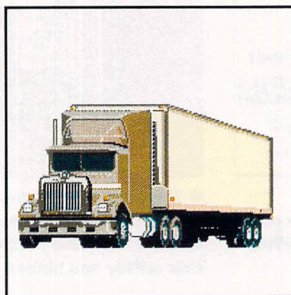
Andrew Jones-Owen started copying his picture of a truck from a book because he was bored one weekend. It seems that he bit off rather more than he could chew, though – he was fooled by thinking the truck would be really easy to draw, but in fact Andrew ended up taking ten hours to finish it. *Neochrome* was his chosen art package for this project.

He also points out that if anyone wants any pictures doing, he's very willing to do them for “a fair price.” Er, yes, thanks for that Andrew.



1 “I did the back of the truck first, using Line and Paint Pot. After that I did the front of it. Then I chose the palette leaving a few colours for the background. There weren't many metallic colours in the palette, so I had to improvise by mixing.

2 I gave the picture a white background, so that I was able to see the wheels better when I was drawing them, although I didn't intend the background to remain like that. I used the circle shape to get an outline of the wheels.



3 I added all the extra bits and pieces to the truck, like the mirrors and funnels. To get the truck at the bottom of the picture, I used the Copy Box tool. Finally I did the outline of the buildings for the background and filled them using the Paint Pot.

WELCOMING ON-SCREEN THIS EVENING... DAVID BOWIE

Ronnie McNamara of Glasgow chose the cover of *Heroes*, and used *Cyber Paint* because he liked the zoom.



1 “Being a very messy artist, I always start by just drawing straight lines and badly-done freehand ones until I get the general shape and proportions I want.



2 The face is the most important part, of course – get that right and the rest follows. I thought I just about had it here, but the eyes were completely wrong, the chin was too big, face too fat, nose too long and so on.



3 Tons of streaky lines later and David is no longer bald! I left the hands alone for the moment because I'm absolutely no good at doing hands. Now, about that face...

They say a picture paints a thousand words. Well, they lied. I mean, how can a bit of canvas express a page and half of A4 text? Pah. Anyway, here's Ed Ricketts with some more pics

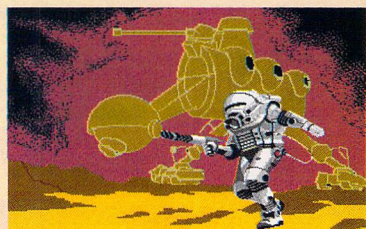
Time is a curve. Taking this as read, it would be true that if you travelled far enough backwards or forwards in time, you'd eventually end up back where you started. But then, of course, you'd have to pass through the beginning of Time at some point, and that wouldn't really be much fun.

But that's quite enough of that. What we have on display here on these pages are some more of your superbly wonderful picturettes. But we need loads more of them – send them in on a disk (goes without saying, really), with explanations

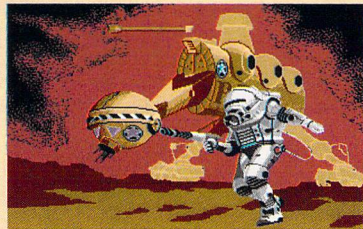
of how you put them together (preferably as an ASCII file on disk). Include loads of stages showing the tricky bits, the fun bits, the bits with egg in them. And then sit back and wait patiently, because they could end up in Gallery. Oh, and that all-important address in

full: ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW. Time at last, though, eh? Co.

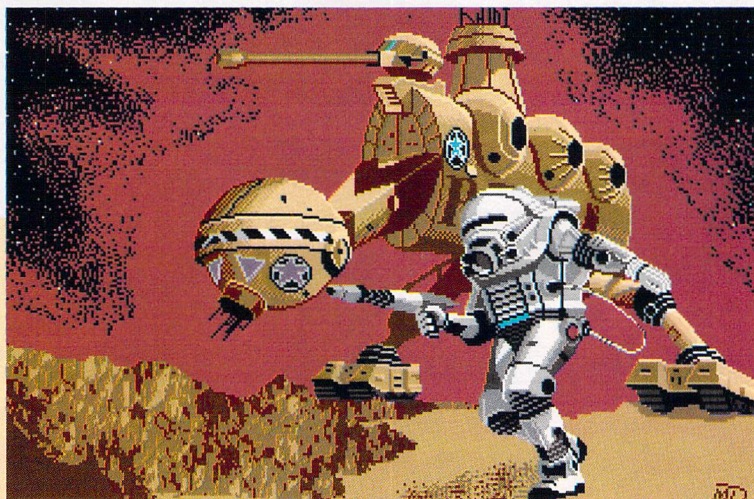
● Neochrome is £5.95 from Goodman Enterprises ☎ 0782 549442 and you can get Cyber Paint 2 for £51.00 from Electronic Distribution ☎ 0480 496666



4 Here you can see the finished spaceman. He took about six hours from start to finish, but I was pleased with the result.



5 The assault craft was hard to shade because it was all curves with flat areas. I drew freehand, solid shades of colour where I thought the shadows would be, then adjusted them using the Magnify screen again.



6 Because the neck of the assault craft was too long, I chopped out the front control pod and then shrank the neck using Stretch mode in reverse. I pasted the pod back onto the neck and touched the area up using the pencil. All this took about two days. I added some stars to the sky using shades of grey. I drew the rocky terrain using STF's 29Mountain program. I stretched and squashed it on a separate screen and pasted the rest of the picture on top. And that was it!"

4 I put the lights on the top of the lorry. To get the windows in a straight line, I made up a grid using the Line function and used that. I filled in the holes using Paint Pot and got rid of the grid by clicking the Pot on it with the wall colour. I drew the top three rows of windows, then used the Copy Box to copy them downwards and then changed them a bit.



5 I added slightly more colour to the windows and created some more windows on the other building using the grid method. I re-did some shading and then did a bit more on the roof. I developed the brick effect by using one of the dotty sprays and drew over the original building.

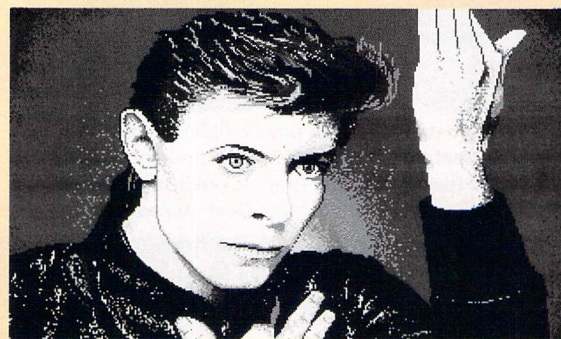
6 I added some dark windows to the edge of a building using the grid method. I used the brick effect on the other buildings and did more shading. I developed the street by adding more buildings and windows. I put in some trees, street lamps, a billboard and some parked cars. I put in the underneath of the truck and sorted out some colours."



4 Now that's much better! Got rid of that distracting lump of a left hand, drew it in properly and eventually managed to get the face right.



5 Tons of airbrushing later and he's got a jacket. Took me hours to do the bloody hands! Cleaned up the face a little here, tidying up the loose pixels.



6 Filled in the background and airbrushed it to death. Pity Cyber Paint doesn't have a gradient fill – it would have saved lots of time. That's all there was to it, really."



ISSUE 34

May 1992
Two Disks: GFA Draft Plus 3 complete 2D vector drawing package; Campaign demo; Intro Designer; six more full programs
Inside: 21 pages of art guides; ST Book portable tested; weird games; 120 tips; Buyer's Guide



ISSUE 33

April 1992
Two Disks: Write On complete package; Leander preview; two raytracing programs; complete Penguin game; fractals and more!
Inside: Over 20 pages of tips; complete guide to raytracing; get the best from Sequencer One



ISSUE 32

March 1992
Disk: Nightmare demo; Kozmic pattern generator – exclusive; STOS extension and more!
Inside: Find out how you can make money with your ST; reviews of STOS 3D and Timeworks 2; over 40 ST tips!



ISSUE 31

February 1992
Disk: Stereo Master preview; Revenge of the Mutant Camels – complete; ten utilities
Inside: All you need to know to get started with the ST; roundups of top software, games and add-ons; inside your STE



ISSUE 30

January 1992
Two Disks: complete Sound & Vision packages, plus "Get Started" supplement; Populous 2 & Baby Jo demos; & much more
Inside: Being creative on your ST – DTP, programming, graphics and music; high res games



ISSUE 29

December 1991
Disk: Autoplay intro sequence creator; Daylight Robbery and Stereo Replay demos
Inside: Making your own intros; score-writing packages; ST-related book roundup; Band in a Box reviewed and rated

BACK ISSUES

Still in stock: STF 3 (violent games), 9 (scanners), 11 (piracy, comms), 12 (music), 13 (tips special), 14 (why games cost so much), 15 (DPaint), 16 (get active), 17 (50 games reviewed, hard drives, printers), 18 (Interphase complete game), 19 (getting started), 20 (31 programs on Disk, complete plug-ins guide), 21 (animation package), 22 (DTP, WP, recover lost data)

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ISSUE 28

November 1991
Disk: Three fractal programs; MiG-29M Super Fulcrum; Home Accounts 2 demo
Inside: All you need to know about fractals on your ST; 25 "serious" packages reviewed; floppy drive roundup

ISSUE 27

October 1991
Disk: Rolling Ronny demo, ST Writer Elite v4, spiral pattern generator, six utilities
Inside: Professionals' graphics techniques; hard drive roundup
Plus 250 best buys in our 24 page buyers' guide supplement

ISSUE 26

September 1991
Disk: Ultimate Virus Killer, Magic Pockets demo, TOS 1.4 fixes and a swag of utilities
Inside: Protecting your ST from viruses; how STs are being used to produce TV ads and business cards; Calligrapher reviewed

ISSUE 25

August 1991
Disk: Mega lo mania demo, Flexidump printing program, a diary utility and more
Inside: 20 printers scrutinised; memory upgrades guide; emulators roundup; Soul II Soul interview; PD library interview

ISSUE 24

July 1991
Disk: Atomino demo, Llamatron complete game, a better file-selector and more
Inside: Complete ST video guide; digitisers roundup; exclusive details of Atari's two new portable "STs"; 85 tips

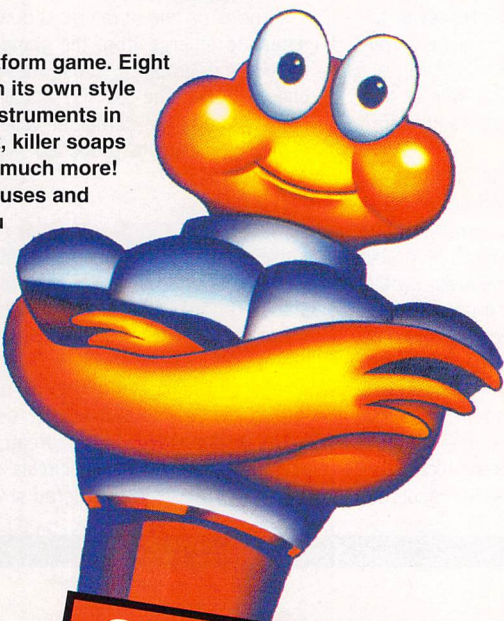
ISSUE 23

June 1991
Disk: 15 programs - 3D Construction Kit; RezRender; American Football game, seven invaluable utilities
Inside: 3D secrets revealed; top ten 3D games; complete guide to ST communications

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Create chaos

You've heard of chaos theory, and probably even generated fractals using your ST. But what exactly is chaos theory, what do fractals represent, and how are they produced? Conrad Bessant has all the answers in the first part of a new "hands-on" series

The new science of chaos theory, with its fascinating graphics and strange concepts, seems to have captured the public's imagination like no other science. Among ST owners, who realise that their ST enables them to experiment with chaos, the urge to know more is particularly strong. But to many people, the terminology and ideas of chaos theory can seem very difficult to comprehend. Generally, the detailed definitions found in textbooks are dry and highly mathematical, deterring even the most inquisitive reader. Leave the textbooks to one side, try it out for yourself, and it all starts to make sense.

GETTING STARTED IN GFA BASIC

On this month's second Cover Disk, along with two other complete programs from GFA, there's the professional-level *GFA Basic v3.5* – the latest version actually available in the UK. It's the fastest BASIC there is, it offers you the best access to GEM and it boasts hundreds of really powerful commands – and it's all yours! For full details of what it can do and how to use it, see page 6. What's more, all the programs connected with this feature are in the CHAOS folder on the Cover Disk.

WHAT IS CHAOS?

The origins of what we now think of as chaos theory can be traced back to the 1950s. During World War Two, the importance of accurate weather forecasts became acutely apparent, and, in the following years, scientists were encouraged to become more involved in meteorology, the science of weather and climate. It was hoped that with the new technology available, and with large research funds, accurate long-term weather forecasting would be possible. However, this hope was never realised. At the time people were surprised at the scientists' apparent failure, and could not understand why the scientists with all their expensive equipment were no better at weather forecasting than the local soothsayer.

Realising that they were getting nowhere at great expense, scientists working on meteorology theory began research, using simple computer-based mathematical models, to determine why weather prediction was so difficult. Simultaneously, other researchers were looking at additional unpredictable elements of nature like population dynamics. As people like these published their work, connections began to appear between the different kinds of unpredictability being investigated – common characteristics could be seen to be exhibited in erratic processes taking place in many different subject areas, from economics to chemistry. Processes displaying

these certain characteristics became known as "chaotic processes" because of their pseudo-random nature. The study of their similarities became the new science: chaos.

The catalyst for chaos research has undoubtedly been computers like the ST because the multitude of calculations that must be performed in even the simplest of chaotic processes make manual calculation practically impossible. In the beginning, it was only well-funded defence establishments and universities that could afford the equipment necessary to carry out such experiments, but since the increasing popularity of the ST in the '80s, chaos has been brought within the grasp of many other people.

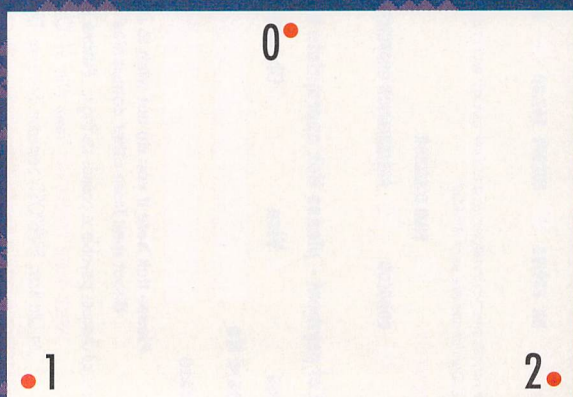
The ST is one of the most powerful low-cost computers to emerge from the computer boom, and its speed and graphics capabilities make it ideal for chaos work. The ST is actually better in many respects than the computer which, in 1980, Benoit Mandelbrot used to produce the now famous Mandelbrot set.

WHAT IS A FRACTAL?

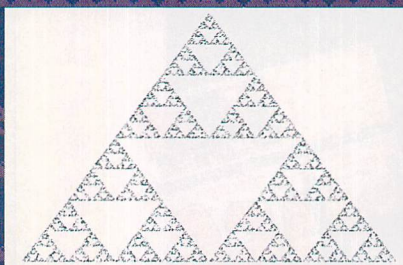
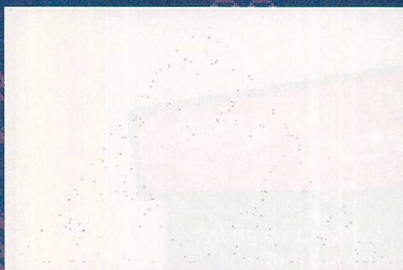
Closely associated with chaos theory are fractals, the elaborate patterns which can now be found on T-shirts, record covers and, of course, on your ST screen, generated by programs like *Hendy Mandy* on last issue's *STF* Cover Disk. The term was actually coined by Benoit Mandelbrot to describe the mathematics behind the Mandelbrot set. Fractals are so intricate that they can't be treated like normal geometrical shapes such as circles and polygons, and have surprisingly little ordered structure, despite the



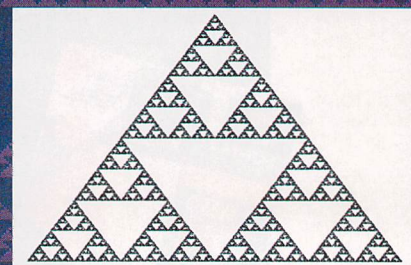
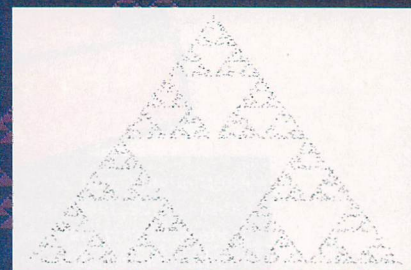
VERY NICE, DOCTOR, BUT IS IT ART?



1 The three corners which form the basis of the Sierpiński gasket – or a triangle, come to that.



2 The gasket appears. The program to generate the figure is on the Cover Disk for you to load into *GFA Basic*. The only question unanswered is: why's it called a gasket?



fact that they originate from very simple rules. It is wrong, however, to assume that all fractals are produced solely by computers – many exist in the real world: frost on a window and the structure of a tree are good examples of natural fractals. It is difficult to accurately define fractals without reference to some complicated mathematical concepts. The best way to understand fractals is to experiment with example programs, many of which are given throughout this series.

ORDER FROM CHAOS

In general, it is safe to say that a random process produces random results, and an ordered process produces ordered results. For example, randomly sprinkling salt over your dining table produces an even spread of crystals with no structured pattern, but a set of explicit commands or equations (a *deterministic* process) gives a predictable, ordered, result as in an ST program. There are, however, some processes which do not abide by this rule of thumb – the Sierpiński gasket (often called the Sierpiński triangle) is the result of one such process. Unbelievably, the incredibly complicated gasket is the result of a very simple set of randomly-based rules.

The starting point for the gasket is a blank plane, on which a triangle is outlined by three single points – number these 0, 1 and 2 for reference. Such a situation is shown in figure 1. The Sierpiński gasket can now be created on this plane by applying these rules:

❶ Pick one of the corners at random and go directly to it;

❷ Choose another corner at random, move halfway towards it and plot a point;

❸ Repeat from step 2.

This type of process is known as an *iterative* process, because a single set of rules is applied repeatedly in order to produce the result. Each application of the rules is called an *iteration*. In this example, the plotting of one pixel represents one iteration. It is quite natural to expect this random process to yield a random result – but, as figure 2 shows, the process eventually gives rise to a very intricate and ordered structure, the Sierpiński gasket.

It is quite easy to write a simple GFA Basic program to execute these rules and thereby produce the Sierpiński gasket. Such a program is below, and is also provided in the CHAOS folder of this month's Cover Disk as LST1_LO.BAS. This program is for low resolution colour displays – a high resolution monochrome version can be found in the CHAOS folder under the name LST1_HI.BAS. (See page 14.)

```
' Listing 1 - Sierpiński gasket
Rem Dimension arrays to hold vertex positions
Dim X(2)
Dim Y(2)

Rem Set positions of the three corners
X(0)=160
Y(0)=10
X(1)=25
Y(1)=190
X(2)=295
Y(2)=190
```

```
HideM !Hide mouse pointer
'
Rem Pick a corner at random
Corner=Int(Rnd*3)
Px=X(Corner)
Py=Y(Corner)
'9

Rem Loop until a mouse button is pressed
Repeat
  Corner=Int(Rnd*3)
  !Pick vertex at random
  Px=Px+(X(Corner)-Px)/2
  !Move to mid point of vertex...
  Py=Py+(Y(Corner)-Py)/2
  !...held in vertex variable
  Plot Px,Py !Plot the point
Until Mousek>0
```

This program can be broken down into three sections. The first section dimensions two arrays to store the x and y positions of each of the three vertices of the triangle, and places suitable values in them. The next section corresponds to stage one of the above process – it initialises the drawing position by randomly setting it to be at one of the three corners. The drawing position can be thought of as the position of the ST's "pen" to give consistency with the manual drawing method. The drawing position is held in the px and py variable pair. The final section of the program is the **REPEAT...UNTIL** loop which actually does the plotting of the points, representing stages two and three of the process outlined above.

The only relatively difficult area in this program is the part which moves the drawing position halfway towards a corner. This is done by finding the mid-point of the imaginary line between the current position and the relevant corner, and moving to it. The method for finding the mid-point is provided by the branch of mathematics known as "coordinate geometry" (see boxout). This states that if there are two points with coordinates (x,y) and (x1,y1) respectively, the mid point of the line between them is at $(x+(x1-x)/2, y+(y1-y)/2)$.

IT'S A FRACTAL!

The Sierpiński gasket exhibits two important features which mean that you can distinguish it as a fractal. The first is the fact that an immensely complex and

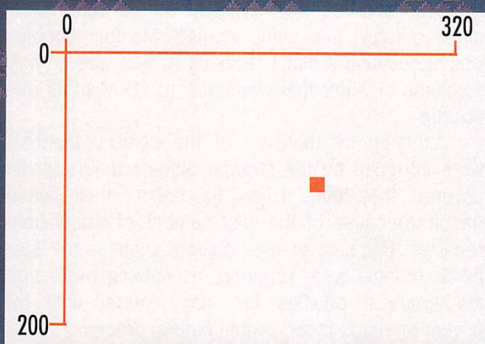
COORDINATE SYSTEMS

If you have done any programming before, you must have come across a coordinate system, although you may not have noticed its formalities at the time. If you have a plane surface, like the ST's screen, you must have some system with which you can describe any position on it. Such mapping systems are called coordinate systems.

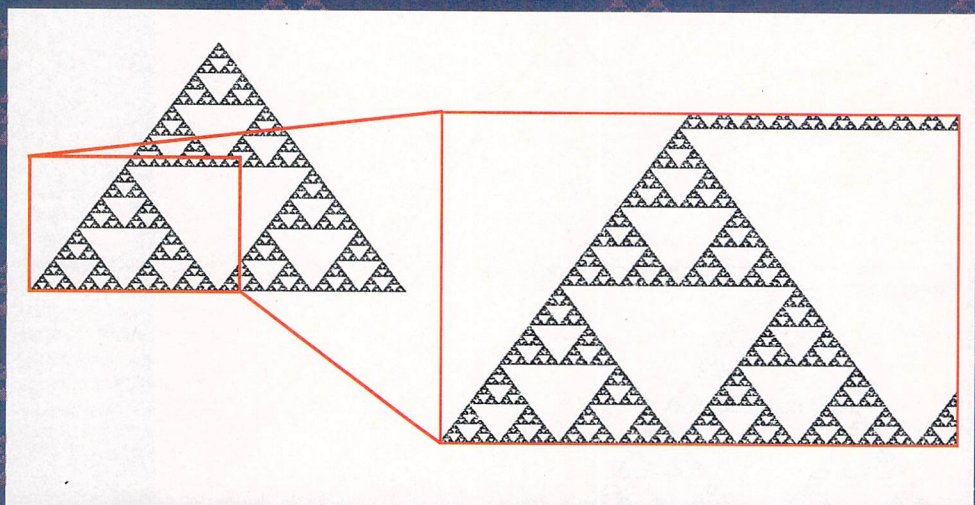
The easiest way to describe the position of a point is by using Cartesian coordinates, a version of which, adapted to map the ST's screen, is shown in figure 3, immediately below. Here you can describe any point on the screen by stating its coordinates – how far across it

is (the x position) and how far down it is (the y position) from the origin point, the top left of the screen. Such coordinates are usually written in the form (x position, y position), so the point in the figure is at the position (200,100). This notation is very useful when describing fractal generation algorithms.

GFA Basic treats the ST's screen as a Cartesian coordinate system, so when you issue a graphics statement you must specify the position in Cartesian form. So if you wanted to plot a point at (200,100) you would use the command: Plot 200,100.



❸ The ST's low resolution screen as a Cartesian coordinate system. The position of any point – or pixel – on-screen can be defined by how far across the screen it falls (the x coordinate) and how far down (the y coordinate).



❹ Zoom in to a section of the Sierpiński gasket and you find that the pattern is repeated infinitely. This characteristic of fractal patterns is called self-similarity. Obvious name, amazing phenomenon.

TAKE ANOTHER STEP AND WIN £30

In the examples given here only one shape of triangle has been used, but you should find that any triangle shape works, no matter how obscure. Changing the shape is simply a matter of editing the lines which set the positions of the triangle's corners. For example, try editing these lines to read as follows:

```
X(0)=100
Y(0)=100
X(1)=10
Y(1)=190
X(2)=300
Y(2)=150
```

What about a shape with more than three corners – a shape other than a triangle?

This is a very interesting question and can easily be investigated by making a few simple alterations to the program. For example, to produce a square you must do the following:

- alter the lines which dimension the position arrays to cater for four corners (0 to 3) instead of only three. Change the DIM statements to Dim X(3) and Dim Y(3)
- edit the lines which set the positions of the corners so the corners describe the outline of a square (two new lines are needed to describe the fourth corner)
- replace the line which randomly picks one corner out of three so that it picks one out of four instead

Why move only halfway toward a cor-

ner each time? Why not try moving two fifths of the way toward the corners? Changing this is especially useful if you are using shapes other than triangles. The results of these changes may not all be interesting, but without experimentation you never know.

The ultimate extension of the Sierpiński gasket principle is to create the three dimensional Menger sponge, a cube full of cube shaped holes. This is a particularly challenging experiment because it requires some kind of 3D plotting algorithm.

If you're using the low resolution version you can liven up the triangle still further by adding colour. Before the PLOT statement add the line:

COLOR INT(Py/12.5)

Now that you've got colour in your picture, why not play around with colour cycling techniques?

To encourage you to turn this simple program into an exciting demo of your ST's abilities, we're offering a £30 prize for the best GFA Basic program. Make sure you use the original program from this month's Cover Disk and see how far you can enhance it. When you're satisfied with your program send the GFA source code to: "I've got a whopper here,"

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structured pattern is created by just a few very simple rules. The Mandelbrot set (which will be covered later in the series) is probably the most famous example of this – one equation gives rise to an infinitely rich structure.

The second point is that if you magnify any part of the triangular structure sufficiently you are able to see the same general shape (see figure 4) – in this case the shape is an equilateral triangle. This property is called self-similarity, which also makes its most notable appearance in the Mandelbrot set. Note that the image cannot be optically magnified – the resolution of the program's output is not good enough, and, even if it was possible to produce more detailed output, the paper can only be magnified to a certain level. This means that the image has got to be magnified mathematically by completely recalculating the part of the image that needs to be enlarged.

Unlike fractals, normal geometrical shapes are not self-similar and lose their identity when magnified enough. For example, a circle becomes a straight line – just as the Earth appears to be flat to a person standing on it, because you can only see a tiny fraction of its surface.

TAKING A CLOSER LOOK

You can easily see self-similarity in the Sierpiński triangle by altering the program in listing 1. The easiest way to do this is to enlarge the triangle so that only a small part of it lies within the screen area, as shown in figure 5. Using this method the program can still effectively move to each point, but only plots points which lie on the screen. In practice the triangle is enlarged by altering the positions of the three corners, which involves changing the section of the program which sets the corner positions to read as follows:

```
X(0)=565
Y(0)=-530
X(1)=25
Y(1)=190
X(2)=1105
Y(2)=190
```

Note that you need to double each of these values if you are using a high res display in order to maximise the resolution of the screen.

When you enlarge fractals in this way it is imperative that the ratio of width to height (the aspect ratio) is kept constant. If this ratio is not maintained the

MONO MONITOR?

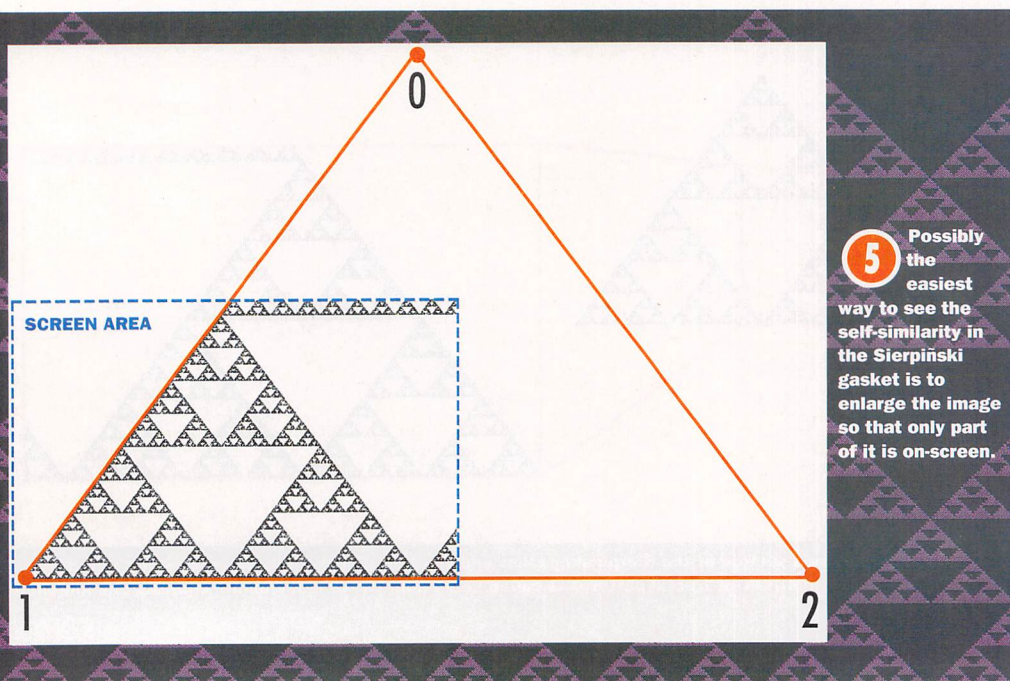
Chaos theory and fractals are too often thought of as the exclusive domain of the colour monitor (or TV) user. However, all fractals can be produced on a monochrome display, and, in many cases, the 640 x 400 pixel resolution of a monitor such as the Atari SM 144 (£139.00 Best Prices ☎ 0903 700714) more than compensates for the lack of colour. This series therefore caters for both monitor types – mono versions of every listing are provided on the Cover Disk. For further details see page 14.

fractal becomes distorted, making self-similarity hard to identify. The Sierpiński gasket we're dealing with is 50% wider than it is tall and the enlarged triangle also has this property, which has the effect of preserving the aspect ratio.

Something to note while experimenting with magnifications of the Sierpiński gasket is its lack of substance. This may sound bizarre but, in fact, all the areas which appear to be composed of solid black lines are actually full of triangular shaped holes. This continues to be true for consecutive magnifications, which suggests that the lines between the triangles are infinitely thin (hence they are nonexistent), and also implies that the Sierpiński gasket is nothing more than a group of holes! Many other objects with similar properties were devised at the same time, most notably the cube shaped Menger sponge, which, because it didn't really exist, was able to hold a volume of water that was equal to 100% of its own volume.

Although by the turn of the century theorists were intrigued by the strange objects they had discovered, they found it hard to continue their investigations because of the vast number of calculations required. Because of this, objects such as the Sierpiński triangle were regarded as nothing more than mathematical oddities for many years, until the advent of chaos theory, when natural processes were shown to exhibit similar behaviour. We look at these next month, when we go in the opposite direction, from order to chaos, with a population simulation and the Feigenbaum diagram. **stf**

● This series of articles is based on Conrad Bessant's book, *Chaos and Computers: Atari ST Edition* (ISBN: 1-85058-247-5) published by Sigma Press ☎ 0625-531035.



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G117 - Flight Simulator.
G118 - England Team Manager sim.
G131 - 1MB. Anagrams, you enter a word to see all the anagrams.
BUDGIE GAMES
NOTE. ALL B code games disks are Budgie Licenseware, these disks cost £3.00 each there can be no discount for multiple buys.
Public Dominator is the world wide number one distributor of Budgie Licenseware titles!
B1 - Darnoid 20 planets, no less, have to be protected.
B3 - Blitz III this is a bombing raid.
B4 - Othello Reversi type board.
B5 - Pro Darts 501 down.
B6 - Dr Boris a TNT maniac on loose.
B7 - Ball Zone an Arkonoid type.
B8 - Speculator simulation based on real futures markets.
B9 - Iycoon A mineral exploring game.
B10 - MoneySpinner The slot machine!
B11 - MotelStorm A very smooth vertical scrolling space shoot-out.
B13 - Zenith A space combat game.
B14 - Goldrush A platform pursuit.
B15 - Perils of Pendolf an adventure.
B16 - Word Puzzle Generator.
B17 - Make a Break trivia quiz with very strong snooker connotations!
B18 - Parabellum excellent platform.
B19 - Tri Hell helicopter classic.
B21 - Impulse a totally original concept!
B22 - Bandit Electronic slot machine.
B23 - Space Blob An immensely enjoyable platform game.
B24 - Slippery Sid has to munch his way through large quantities of pills.
B25 - Scary platform game about a haunted mansion.
B26 - Carrier Attack the drama and excitement of Battleships.
B27 - Psionic A space shoot 'em up.
B28 - Sub Hunt A two player game set in some of the globe's hotspots.
B30 - A Quest for Galaxia - Galaxians.
B31 - Inferno platform set in hell.

B32 - Runaway Guide a drone ship through the tunnels of the moon.
B34 - Safe as Houses - monopoly.
B35 - Hostile Reception A Xenon-type.
B36 - Dogfight aerial manoeuvres.
B37 - MR Dig classic arcade.
B39 - Onyx an excellent shoot 'em up.
B40 - Dizzy Lizzy Across between Pacman and Boulderdash.
B41 - Exodus Awesome shoot 'em up with fantastic graphics!
B44 - Exterminate If it moves KILL IT! Amega shoot 'em up game.
B49 - Khan help Beldrop to keep the storage rooms of skyscrapers in order.
B50 - Space Invaders.
B51 - Space Duel a space dogfight.
B54 - AUTORAMA Drive an automobile around a maze.
B56 - Super League Soccer a management simulation.
B58 - Bert the Squirrel An 80-level game designed to help Bert get fatter.
B59 - G-ORB explore galactic cells.
B61 - A Winter's Tale 40 levels.
B62 - Colony An excellent scrolling 'missile command' variant.
B64 - Castle Frankenstein create a Monster platform game.
B65 - Douglas II excellent boulder dash.
B66 - Missile Alert!
B67 - Paco A Boulder Dash type.
B70 - Pacman ST The definitive version.
B72 - Avena Blue A horizontal scroller.
B74 - Firegame board game.
B77 - Denis and Denise platform game.
B79 - Sharks a hangman style game where you get eaten by sharks!
B80 - Travel Game travel the world.
B83 - Cyberstorm a megablast themto pieces like the classic Defender.
B86 - Quattris a tetris variant.
B87 - Whoopsy guide a baby around a platform game.
B88 - Annihilator very good Galaxians.
B89 - Horse Racing Simulation.
B90 - Match It a superb 'shanghai' variant extremely well presented.
B91 - Flipped a really top-class puzzle.
B93 - Bug Spray.
GRAPHICS
GR44 - CrackArt 1MB is a brilliant art package that allows multiple screens all the usual drawing tools.
GR40 - 1MB. ST Designer V1.1 mono only art package excellent.
GR42 - 1MB. HPM Draw V0.93 a mono only object oriented drawing package.
GR43 - 1MB. Butterfly Artist V1.0 mono only supports Degas & IMG.
GR36 - Colour Space by Jeff Minter.
GR6 - DEGAS Support disk - 155 fills, 10 brushes, 7 fonts and printer drivers.
GR11 - PICTURE CONVERTERS 1. Tiny, Degas and NEO.
GR17 - PICTURE CONVERTORS 2. PrintMaster, Degas, NEO, Tiny, IFF, SPECS12, AIM, IMG.
GR20 - PICTURE CONVERTORS 3. Degas, Tiny, NEO, MACPaint to IMG.
GR34 - PICTURE CONVERTORS 4. NEO, DEGAS, SPECS12, AIM, GIF.
GR19 - FRACTAL ZOOM V3.1 the most comprehensive fractal program.
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GR30 - EC-CREAT electronic circuit creation program. 9/24 pin printers.
PROGRAMMING LANGUAGE
L18/20 - Ghostscript V2.11 postscript language interpreter. \$9.00.
L21 - XLisp V2.1 by Dave Betz.
L22 - Standard Lisp V2.07 by P W Birch.
L1 - 68K Assembler, XLisp, STLogo, Tiny Basic.
L13/L14 - MODULA-2 DEVELOPMENT SYSTEM V1.0 from ANA-systems. £6.00.
L15A/L15B - SOZOBON C Compiler V2.0. £6.00.
L3/17 - 2 Adventure writers. £6.00
MUSIC
M15 - THE ACCOMPANIST V2.4 a 16 Voice MIDI Sequencer. A fully working MIDI sequencer by Henry Cosh.
M2 - Noiztracker V1.2 the full program and modules.
M22/23 - Quartet Samples £6.00
M28 - NOTISE. Music Manuscript V1.0 MONO ONLY desktop publishing for

Musical Notation and Musical Scores.
M29 - DIGI COMPOSER by Il Professore and Bitmaster of ISTAIR. An extended version of Noiz Tracker.
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D298 - Winter In July3D Stereo.
D303 - 1MB. Astro stereo sound.
D144 - The Official Atari France STE!
D214 - Sound Off.
D228 - 1MB. AN COOL.
D229 - 1MB. The Jungle demo!
D230 - MovieSTE.
D231 - 1MB. BOING STE.
D232 - 1MB. NOTISTE1.62. Fantasia.
D233 - 1MB. 3D Scroller.
D234 - 1MB. Psychedelic House II.
D251 - The Black Cat.
D252 - The 2nd French!
D254 - Tomorrow's World 3D stereo!
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The following 7 ClipIt packs are all Black and White clip art illustrations suitable for any program with graphic capabilities. Each pack contains 5 disks. Pack 7 contains 3 disks.
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YOUR 2ND MANUAL TO THE ATARI ST.
Y2M - Having got your ST and read the manual you are probably still in the dark about the ins and out of using it. The book Your Second Manual goes in depth in an easy to understand way about every aspect of using your ST. If you are a new ST user then this is the book for you. £10.00.
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NEXT MONTH'S
ISSUE ON SALE
THURSDAY 11 JUNE



Next month we'll show you how to make it even better in *ST FORMAT*

With prices more competitive than ever before, there's never been a better time to upgrade your ST. A new TOS version, more memory, a blitter chip, a PC emulator, processor accelerators and more are likely to have surfaced on your shopping list – and why not? Upgrading your ST is often a better option than buying the latest model. Next issue we show you what

you can do to get more power out of your machine.

But we're not just *telling* you what you can do – we're also proposing to *do it for you*. For the first time ever, we're offering to take the pain out of upgrading. We'll collect your ST from you, install the upgrade you want and then send it back, cleaned and polished. We'll even repair faulty STs to guar-

antee you've got no excuse to stop using your machine.

Plus, we'll send you a full certificate telling you details about your ST like the TOS version you've got and any added extras inside. Don't risk getting it wrong – let us get it right for you.

Seize this incredible money-saving offer in next month's edition of *ST FORMAT* OUT THURSDAY 11 JUNE

ST FORMAT

ALSO IN NEXT MONTH'S ISSUE:

- Two Cover Disks – a full and unmissable £50 commercial package on one and essential utilities, reader programs and playable game previews on the other
- A step-by-step guide to getting your ST on-line. How an ST, a modem and a telephone line can revolutionise your life
- Over 170 items listed in our updated Buyer's Guide
- Even more helpful tips to get your ST performing like you never thought possible
- An exclusive in-depth report about how classic game heroes spend their days off

...and much more!

Weird? Me?

You know how it is when hordes of lovesick llamas come rushing towards you – and you want them to? No? Then you haven't played *Llamatron*. Poor you. Let the man behind the llamas, Jeff Minter, tell you all about it

● Jeff Minter, the man responsible for the psychedelic pattern creator *Trip-A-Tron*, as well as two of the finest blast-'em-ups in ages.



It's like the difference between a concept album and a dance record, he says. "Sometimes I don't want to sit down and listen to *The Wall*, I just want to get up and dance." Jeff Minter – industry veteran, llama-lover and a somewhat refreshing character to encounter in the often bland world of ST software – is comparing his games to others. "Sometimes you just want to sit down and kick hell out of something. I love that feeling of being in control, that adrenaline rush you get by knowing it's you causing all that chaos on-screen."

In May last year, Jeff released his version of the classic Williams arcade game *Robotron*, updated and

renamed *Llamatron*, into the Shareware market. It appeared on *ST FORMAT* 24's Cover Disk and was, to put it mildly, an instant success. Another classic conversion – this time of one of Jeff's own games, *Revenge of the Mutant Camels* – soon followed on Shareware and *STF Cover Disk* 31. Again, it was a huge success.

The Shareware principle is simple. You get *Llamatron* or *Camels* from wherever you like. You play it. If you like it and want to keep it, you send £5 to Jeff; if not, you give it away to someone else. Aha, you cry, I think I've spotted a fatal flaw in your logic

there. People would never be that honest...

Would they? That's what Ed Ricketts and Chris Lloyd wanted to know when they visited Mr Minter deep in the tundra of Wales.

How has the Shareware business treated you?

"Very well. Shareware is a great alternative to commercial games because enough people use STs to make it worthwhile. It's hard to put an amount on it, but *Llamatron* has made me something in the region of £10,000 so far – enough to keep me financed since its release, certainly. The thing is, PD lasts for ages – it's not like a commercial game which has a limited shelf life and disappears after a while. It's always there.

"I've got wads of letters from people who have enjoyed *Llamatron* and paid their £5. Some of them pay me in other ways – things they've made, CDs, disks of their own stuff. In fact, getting involved in Shareware is one of the most satisfying things I've

"Software companies include all sorts of paraphernalia to justify the price tags, but don't invest the same time in gameplay"

JEFF MINTER

ever done in my life. Someone took a copy of *Llamatron* and showed it to Eugene Jarvis at Williams Electronics, the inventor of *Robotron* [on which *Llamatron* is based] and a personal hero of mine for a long time. Apparently he was very impressed with it."

So do you think Shareware is the way forward?

"Shareware may well become the dominant form of distribution of games in the future. I'd like to see more 'big name' authors getting involved – if the Bitmaps started doing Shareware, who knows how many billions of pounds they'd make?

"The thing is, software companies have to package their games in big boxes and include all sorts of

● Mr Minter, man of incredible talents, tremendous hair and immense llama-loving capability, gets to grips with his camels in his compact 'n' bijou zapping environment.



● "Doctor, I keep thinking I'm a camel, and I and my friend the goat are being attacked by telephone boxes, walking sticks and exploding sheep. What have I got?" "That's easy! You've got Jeff Minter's *Revenge of the Mutant Camels* on *STF Cover Disk* 31! Just pay the nurse on the way out..."



paraphernalia to justify the price tags of £30.00 and up, but they don't invest the same sort of time in the gameplay. Often gameplay detail is missing from commercial games. For example, originally in *Llamatron*, the bonuses would just float around aimlessly and it was very difficult to catch them. By having them float in the general direction of the player, the gameplay was much improved. It's little things like that which make a game playable.

"Another thing I like to put in my games is some sort of trainer mode or computer assistance – both *Llamatron* and *Camels* have a 'CPU Assistance' mode, which means you can get used to the game easily before tackling the real thing. I notice the

Bitmaps are making a lot of that feature in *The Chaos Engine* – I bet I know where they got that idea from.”

How well did *Trip-a-Tron* [Jeff's psychedelic "lightsynth"] do?

"Very well, actually. We're still getting a steady stream of orders for it. That's why we released its predecessor, *Colourspace*, as Shareware. People have a chance to sample what *Colourspace* can do, and if they like it, upgrade to *Trip-a-Tron* at a reduced cost."

Any plans to release *Trip-a-Tron* as Shareware?

"Possibly, in the nearish future."

What do you think of Virtual Reality?

"Its potential is excellent. Unfortunately, at the moment there's a lot of crude stuff around because it's still early days. Most people see the arcade stuff, which isn't at the top end. It's slow, it's jerky and it's not very impressive. And of course the only people with the necessary hardware at the moment are some guys in California who invented the damn thing.

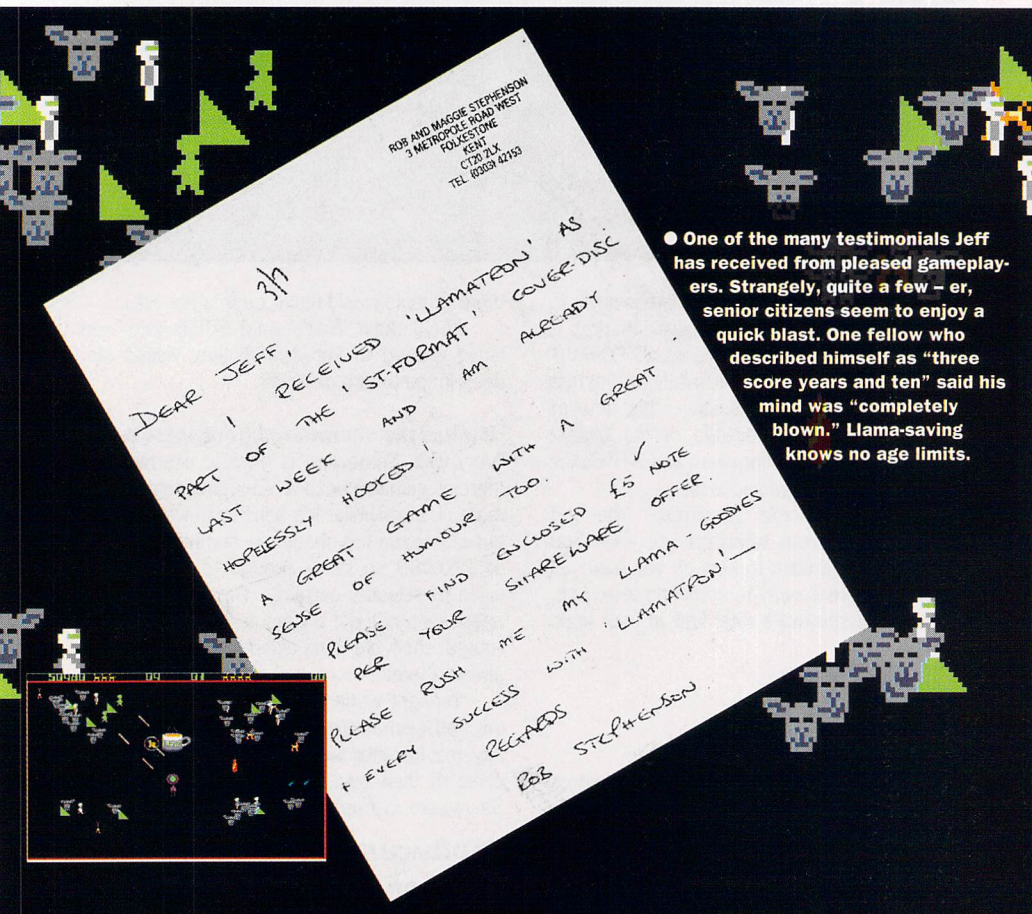
"But I find the whole process of getting into new machinery very interesting. I can foresee a time sometime in the future when I'll have a hole in my forehead into which I'll just slot the appropriate game – direct neural connections! It won't be the hardware technology that causes problems, it'll be the connections to the brain."

Do you have any plans to write a more “ambitious” game – a 3D space flight/fight sim, or something like that?

"I wouldn't mind doing a 3D game, but I'd do it differently from the normal way – perhaps using sprites instead of vectors. Games shouldn't be sold purely on the strength of their 3D effects. For instance, there was a game called *Rescue on Fractalus* years ago on the Commodore 64 which simulated flight down a fractal-generated mountain range. It was incredible – done on a 1MHz 6502 processor, and they probably cheated like hell – not that anyone would know – but no one's come up with anything remotely as good since." **stf**

● Llamasoft, Jeff's software house, are on ☎ 0734 814478. For more Minter madness, don't miss

Thingie, the fabulous vector pattern creator, on the Cover Disk. Turn to page 14 for details! If you missed **Llamartron (STF 24)** or **Camels (STF 31)**, see page 44.



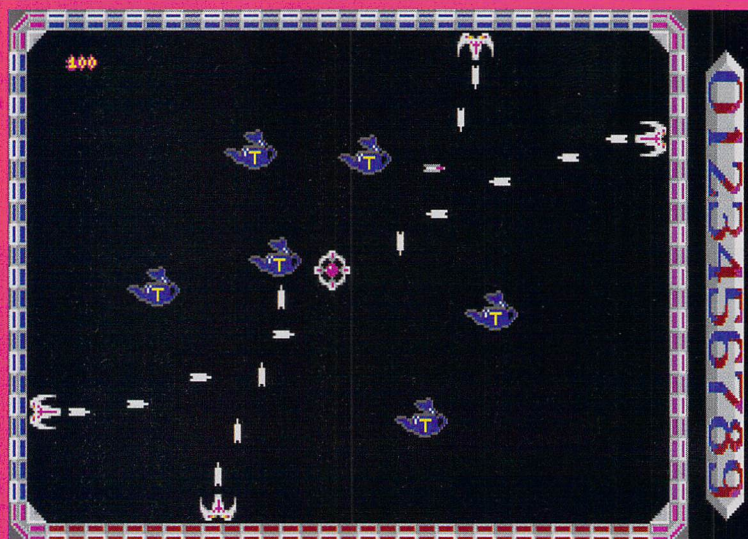
HARDCORE – YOU KNOW THE SCORE

Jeff's new Shareware game, *Hardcore*, is described by him as a "thrash metal shoot-'em-up." The concept is simple. You control four guns ranged around the walls of an enclosed area by moving the mouse. Aliens materialise in the area and it is your time-honoured job to shoot them to shreds. In the arena, there's also a floating thingie which is moved by your shots and kills the aliens too. The aliens evolve in intelligence – they start off stupid and gradually learn some very tricky and nasty manoeuvres... like being able to fire back. When one of your guns is destroyed, it disappears for a while before reforming, but obviously this only happens a limited number of times. When you're doing really well, you enter a "Rave" sequence when you become invincible.

"I wanted to challenge people's ideas of a shoot-'em-up," says Jeff. "The aliens' evolving

makes things really tough – in fact, I'm thinking of putting in a way of saving the current state of evolution so you can show off how far you've got."

Like Jeff's other games, *Hardcore* is fast, frantic, tough (until you get good at it), full of excellent samples and psychedelic effects, and extremely playable. It should be – er, hitting the Shareware scene soon. Watch this space...



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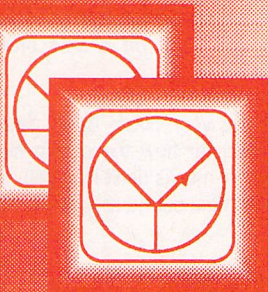
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Midistudio Master

Specifications

Timing:
240 pulses per quarter note (ppq) timing resolution. Internal clock-synchronisation-to-hardware of 1/3200 sec (less than 1/3rd millisecond).

Structure:

100 tracks storage - output any 20 simultaneously. Up to 100 phrases may be placed on each track.

Mixdown (per output):

On/Solo/Mute, Volume, Program, Stereo Pan, Transpose, output Channel, Mid-Delay.

Controls:

Play, Pause/Continue, Record, Stop/Clear, Fast Forward (with playback), Fast Rewind, Go To Start, Go To End.

Loop Record (Off/New/Add), Multi Channel/One Channel Record, Multi Channel/One Channel Output Per Track, Tempo 40 to 240 bpm, Half Mode, and Recordable, PSG Metronome, Midi Metronome (tunable, two tones), Phrase Size (from 1 beat, to 68 bars of 4 beats per bar), Five Sync Modes.

240/24 ppq Mode Switch, Bar/Beat Position

Counter, Realtime Stopwatch, Fit-Time Function, Mid Thru (1 to 16, Off, Multi-Channel), Intro (1 to 16, Off, First Note, Trigger), Playback Cue Points (8, nameable, displayed in Scroll).

Edit Functions:

Direct insert/change of any Midi event via Midi or mouse.

Local Phrase Playback - Play and Edit only the Current Phrase.

Step Time Input - via Midi or Mouse, user defined step-jumps, notepitches, notelengths.

Copy, Split, Merge, Append, Rename.

Quantize - 11 levels, Auto, Humanise, Staccato, Legato.

Transpose - To + or - 24 semitones.

Velocity - Level-all, Increment/Decrement All, Auto, Humanise, Rescale.

Filters - Immediate Filters, plus Input Filters for Note On/Off, Program, Bend, After Touch, Controllers (individual and multi).

Insert Continuous Scaled Controller - add Pan, Volume, etc, across a phrase.

Delimiters - Transpose/Velocity/Filter delimiters -

81% ST Format 27

Data-Pulse

Quantum Mechanics

The 3.5" Auto-parking Quantum Mechanisms used in the Data-Pulse range of Hard Drives are made to very high American Military standard and are covered by a 2 year manufacturers warranty (from date of manufacture). They have a typical, effective access time of 9ms utilising a 64K look ahead disk cache. The mechanisms used are also very low power which means they can operate without a fan, reducing noise.

Data-Pulse Hard drives

- ✓ All drives are formatted/partitioned and tested.
- ✓ DMA device selector & On/Off switch on front of case.
- ✓ DMA Out port for daisy chaining extra drives/Laser printer.
- ✓ Full metal case measuring 300mm x 285mm x 51mm (wdh), providing good shielding, and monitor stand.
- ✓ Choice of controller boards (prices differ) CD board with battery backed clock or GEsoft. Both boards have a data transfer rate in excess of 1Mb per second and are supplied with formatting/partitioning software.
- ✓ All drives include backup software, MCP shell programme, Midistudio & Midistudio Master demo's.

84% ST Format 25

Aries

Ladbroke Computing have been active in the field of ST Memory upgrades for a number of years and can offer upgrade advice and solutions for the entire range of ST's.

We have developed our own 512/4Mb upgrade board using an in house designed, Multi layer circuit board which measures just 52mm x 62mm, smaller than a credit card. We have achieved this miniaturisation by utilising 4 Megabit memory chip technology. The result of this reduction in size is a reduction in cost and more reliable operation, due to the fact that the board resides under the ST's shielding protecting it from interference and reducing Electromagnetic emissions.

The board is manufactured in the UK and hand assembled in our workshops by skilled technicians.

Memory Upgrades

The boards are then thoroughly tested before despatch.

The board now comes in three configurations, 5Mb, 2Mb and 4Mb. It is possible to start with a 5Mb board and to upgrade it to 2Mb and then 4Mb at a later date.

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

A memory check program is supplied and skilled technicians are on hand to offer technical support.

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ST Secure

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

St Internal drive £53.49

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Our technicians can carry out repairs to all ST's. Phone for details.

Golden Image

Golden Image External
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Scanner £119.99

Special Offer while stocks last

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The Golden Image Brush Mouse is an opto/Mechanical mouse in the form of a brush. It has a resolution of 150Dpi, is swichable between ST/Amiga and costs £19.99. The Brush mouse also comes with the excellent Deluxe Paint software for just £24.99

Golden Image Optical Mouse £34.99

The Golden Image Optical mouse has a resolution of 250Dpi, comes complete with mat and is swichable ST/Amiga.

Jin Tech Mouse £12.98

High quality replacement ST mouse.

91% ST Format 30

All Notes/One Pitch, All Channels/One Channel Buffer - 'Undo' the last edit/record.

File:

Midi standard file compatible. Load Song, Save Song, Load Phrase, Save Phrase, Delete File, Change Drive, Disk Space.

And More...

GEM Interface/Menu/Accessories support. Run 'slave' programs off disk from within Midistudio. TLA Data Systems Pipeline/Modules Facility. Memory-linked modules are called as extra windows.

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Mouse Left/Right Button Exchange.

Text Notes Window.

Hardcopy Facilities, telephone Help-Line, and Customisation Service.

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

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

16/4 chip upgd STFM £ 29.99

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

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Star LC24-20 £199.99

Star LC24-200 £229.99

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All Star printers include 12 months on site warranty.

All printers include ST/Amiga/PC compatible Centronics cable.

Emulators

PC Speed,(XT) £ 90

Please state STFM or STE version.

AT Speed £ 150

Includes DR DOS

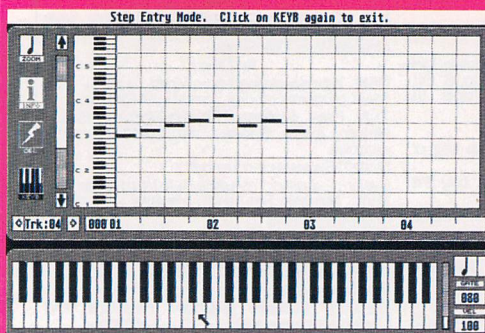
AT Speed C16 £ 229

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

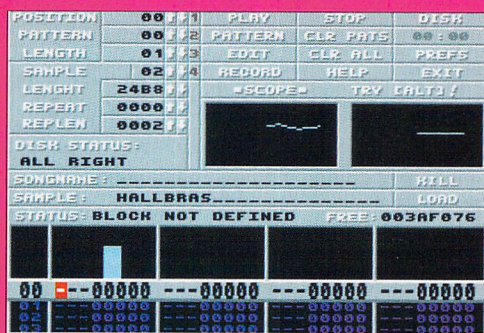
AT Speed-STE Adaptor £24.99

AT Speed-Mega

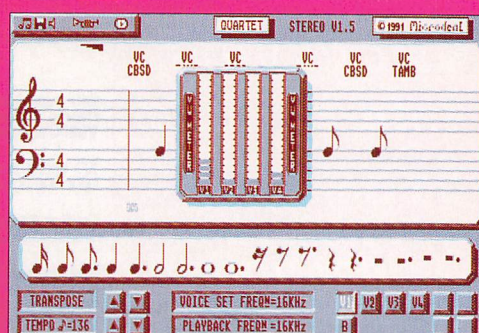
Adaptor £ 24.99



● The special version of *Sequencer One* that was yours with *STF 30* included a sound-chip editor so that you could make music without MIDI.



● The *Noisetracker* program from the Public Domain is an excellent four channel sampler player for producing your own sample sequenced tunes.



● Microdeal's sound sampler *Quartet* enables you to put up to 20 instruments in memory – there are over 100 for you to choose from on the disk.

Music without MIDI



Stereo sampling, special effects, drum programming, sequencing, score-writing – and not a MIDI lead in sight! Yes, the ST has something for every Tom, Dick or Yehudi, so prepare to pump up the volume as Steve Wright takes you beyond the bleep, in the first part of our music series

Was it a Shakespeare character who once said "If music be the food of love, buy an Atari ST"? Well, no, but whoever it was certainly knew what he was talking about. The ST is universally recognised as the number one music computer, and is supported by the largest amount of music software ever written for a single machine.

Much of the music you hear from day to day is created with the help of an ST. What's more, thousands of beginners have found the ST an ideal partner for taking their first steps into music-making. The ST is such a powerful musical tool that you can create your own music even if you can't play an instrument – and who knows where that could lead you? The ST is a professional's machine – Madonna, Peter Gabriel, Bomb The Bass and Fleetwood Mac are just a tiny proportion of the household names you use it.

This month we begin a four-part series about music on the ST. You don't need any specialist musical knowledge. The series will guide you through the different types of ST music software currently on the market – but most of all, it will help you to get more out of music, whether it be for a bit of fun, a serious hobby or a career.

ST music comes in a variety of forms. Most serious music-making takes advantage of MIDI (the Musical Instrument Digital Interface). However, all MIDI applications require some kind of external MIDI-compatible hardware. This month, we explore the many other ST music options.

What are those options? The ST's own built-in sound chip, although limited in sound quality, can easily be programmed from BASIC and is widely used by many types of software – educational music programs which use the sound chip are already in use in some schools. Sampling software and hardware enable you to record sounds directly into your ST and

then organise them into music. Tracker software can turn your ST into a powerful sample sequencer, so you can create music using sounds available from PD libraries and elsewhere. Scorewriting packages enable you to produce publishing-quality printouts of your music.

All STs are fitted with an internal sound chip, also known as a PSG (Programmable Sound Generator). This creates the rather nasty bleeping sounds you sometimes hear through the internal speaker in your monitor – and the "tick" sound you sometimes hear when you press a key. It is also capable of playing tunes (like those in many games) and generating "noise" – useful for certain sound effects such as weedy gunshots and pathetic explosions. The chip has three channels, so it cannot play more than three sounds at a time.

There's no doubt about it, the sound chip just isn't up to serious music – but, if you can live with its shortcomings, you can have some harmless fun. In BASIC, you can audition the sound chip instantly. After loading *ST Basic*, try typing in the following command:

```
SOUND 1,12,10,4,50
```

Press <Return> and you can hear a note. Hit <Return> again and it stops.

The five parameters in the **SOUND** command specify the channel, volume, note, octave and duration of the bleep. Channel is a number between one and three and volume can be anything from zero (totally inaudible) to 15 (loudest). The pitch of the note is decided by the note and octave parameters. Note is a number between one and 12 (the 12 notes in one octave, counting C as one), while octave is a number between one and eight (the sound chip has an eight-octave range). Duration is the length of time the note lasts for, measured in fiftieths of a second. So, in the above example, the sound chip is

instructed to play a note on channel one, at volume 12. The pitch is note 10 in octave 4, which happens to be middle A. The note lasts for one second.

Hang on, though – that note lasted longer than a second, didn't it? That's because the duration only specifies the length of time that elapses before another sound is allowed to happen on that channel. The sound turned itself off when you pressed <Return> because the key click sound took over at that point. When you use **SOUND** in BASIC programs, therefore, you should always remember to include a "dummy" **SOUND** instruction to turn the note off, unless another note is about to follow immediately on the same channel. To turn off a note on channel three, for example, use:

```
SOUND 3,0,0,0,0
```

Now try typing in this very simple BASIC sequencing routine to get a feel for how the **SOUND** command works. (The **↓** symbol means don't hit <Return> yet – the line just wouldn't fit in our narrow columns.)

```
10 FOR i = 1 to 8
20 READ note, oct, dur
30 SOUND 1,12,note,oct,dur
```

MUSIC SOFTWARE

Here's a selection of various types of non-MIDI music packages – by no means an exhaustive list. Although some do have MIDI options, they are not essential to the basic operation of the software.

SAMPLERS

STEREO REPLAY

CONTACT: Microdeal ☎ 0726 68020

PRICE: £89.95

MACHINES: All STs and STes, medium and high res only

FEATURES: Sample editor with three-channel drum machine, MIDI-controllable playback, 8-bit input and output

STF RATING: 89%

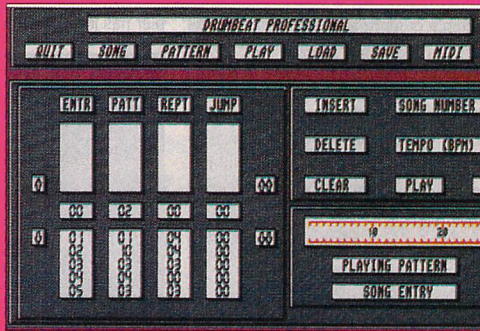
REPLAY PROFESSIONAL

CONTACT: Microdeal ☎ 0726 68020

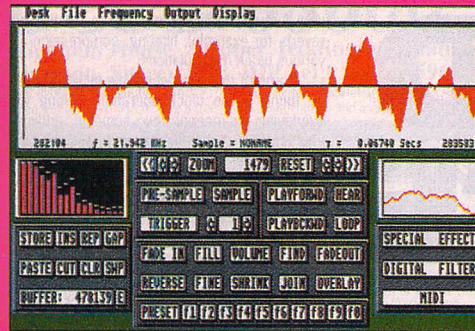
PRICE: £99.95

MACHINES: All STs and STes, medium and high res only

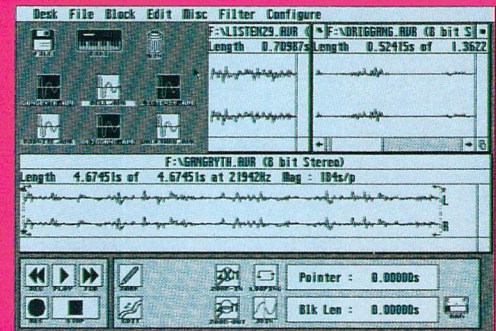
FEATURES: Sample editor with four-channel drum



● **Drumbeat Pro** is a software drum machine using a pattern and song structure to create sequences – up to 50 patterns and ten songs can be held in memory.



● **Replay Professional** has a low sampling rate of 48kHz, but it's amazing how many samples you can pack into the five seconds this gives on a 520 ST.



● **Stereo Replay**, the stereo sampler and sample editor for all STs, offers an editor screen based on the GEM Desktop, with icons representing samples.

```
40 NEXT 1
50 DATA 1,4,24,8,3,8,7,3,8,8,3,8,9,3,
  24,8,3,48,12,3,24,1,4,24
60 SOUND 1,0,0,0,0
```

By making modifications to the **DATA** statement, you can change the tune. But whatever you do, you're still dealing with the sound chip – it still sounds crap!

You can get more out of the sound chip by using BASIC's **WAVE** command. **WAVE** enables you to control other elements of the chip such as the noise generator. Don't expect massive improvements, though. There's a description of the **WAVE** command in your BASIC manual.

You can also control the chip more directly by programming it from BASIC using **POKE**. There is a special way of accessing the chip's 16 registers, and if you are sure that you want to do it, R A Penfold's *Musical Applications of the Atari STs* is an excellent guide. It's available from Computer Manuals ☎ 021 706 6000 at £5.95, ISBN: 0859 341917. But that's enough bleeping chips for now.

SAMPLERS

It's time to turn our attention to a more impressive aspect of music on the ST – sampled sound. What is sampled sound? It's sound which has been passed through a device called an Analog to Digital Converter (ADC) to get it into a digital form so your ST can do miraculous things with it. Once inside your ST, it can be treated like any other numerical data – it

can be cut, copied or pasted, and have various mathematical functions performed on it. In other words, sampled sound can be processed, just as words are processed in a word processor. Above all, it can be instantly replayed through a monitor speaker, TV, rear phono connectors (on STEs) or an add-on Digital to Analog Converter (DAC).

One thing to bear in mind with sampled sound is that it takes up large amounts of memory – and the better quality you want, the more RAM you need. This is because the quality of a sample depends on two things – the sampling resolution and the sampling frequency. Both affect the amount of detail picked out from the original sound. You can't do much about the sampling resolution, which is a fixed feature of the hardware, but some samplers enable you to set the sampling frequency.

ST samplers are hardware and software combined. The hardware is normally an add-on which plugs into the ST's cartridge port, containing an ADC for recording sounds into your ST and a DAC for playing them back. Stereo samplers have two of each. The accompanying software provides the digital processing options for treating the samples, and may include simple drum-machine style sequencing capabilities.

One company at the forefront of ST sampling for over five years are Audio Visual Research. The AVR samplers offer various different "sample resolutions." Don't be baffled by this – simply put, the higher the sample resolution, the more you pay, but the better

the sound quality. AVR make two 8-bit samplers – *Stereo Replay* and *Replay Professional*, both of which are published by Microdeal. Also available are a 12-bit sampler called *Pro-Series 12* and a 16-bit one called, you guessed it, *Pro-Series 16*. They all enable you to sample sounds, edit them, and piece them together to make music – see the table about software below for more details.

Replay Professional's top sampling rate is 48kHz – 48,000 cycles per second. On a 520 ST, this sampling rate only gives you five seconds of sample time before you run out of memory. At 22kHz you can get over ten seconds on a 520 and over half a minute on a 1040. This may not sound like much, but you'd be surprised – many drum and percussion sounds only last for a fraction of a second, so you can pack a large number of samples into half a minute. Once your samples are in memory, it takes a negligible amount of extra RAM to hold the instructions to replay them in the right order, so don't worry – your finished music isn't limited to mad 30-second bursts!

TRACKERS

If your budget doesn't extend to a sampler, consider a tracker. Tracker software is ideal if you're not particularly interested in doing your own sampling but would love the chance to use other people's samples creatively.

A tracker is essentially a sample sequencer, and is usually supplied with a good collection of ready-made samples on disk. If that's not enough, you can

FOR YOUR ST AND WHERE TO GET HOLD OF IT

machine – *Drumbeat Professional* – MIDI-controllable playback, 8-bit input, 12-bit output
STF RATING: 90%

PRO-SERIES 12

CONTACT: AVR ☎ 0582 457348
PRICE: £199.00
MACHINES: All STs and STEs, medium and high res only
FEATURES: Sample editing, four-channel drum machine, MIDI-controllable playback, 12-bit input and output
STF RATING: 94%

PRO-SERIES 16

CONTACT: AVR ☎ 0582 457348
PRICE: £299.00
MACHINES: All STs and STEs, medium and high res (1MByte recommended)
FEATURES: Sample editing, four-channel drum machine, MIDI-controllable playback, 16-bit input and output
STF RATING: 94%

TRACKERS

NOISETRACKER

CONTACT: Any PD library – see our listing on page 38
PRICE: £1.00 upwards
MACHINES: All STs and STEs
FEATURES: Four-channel sample sequencing. Has scope and analyser functions
STF RATING: 85%

SOUND MACHINE

CONTACT: Riverdene PDL ☎ 0734 452416
PRICE: £2.50
MACHINES: All STs and STEs
FEATURES: Three-channel sample sequencing with staves
STF RATING: 65%

QUARTET

CONTACT: Microdeal ☎ 0726 68020
PRICE: £49.95
MACHINES: All STs and STEs
FEATURES: Four-channel sample editing and sequencing with double stave display
STF RATING: 94%

SCOREWRITERS

COPYIST APPRENTICE VERSION 1.7

CONTACT: Zone Distribution ☎ 081 766 6564
PRICE: £99.00
MACHINES: All STs and STEs
FEATURES: Five pages of score, comprehensive symbols
STF RATING: 75%

PROSCORE

CONTACT: GFA Data Media ☎ 0734 794941
PRICE: £200.00
MACHINES: STs and STEs with 1MByte. High res monitor
FEATURES: Up to 27 staves, real-time MIDI input
STF RATING: 68%

COPYIST DTP V1.7

CONTACT: Zone Distribution ☎ 081 766 6564
PRICE: £249.00
MACHINES: All STs and STEs
FEATURES: 50-page scores, laser and Postscript printer output
STF RATING: 65%

A SOUND ADVANTAGE – ST vs STE

If you're the proud owner of an STE, you can benefit from its superior sound capabilities. The STE has a stereo pair of 8-bit phono sockets on the back, so by connecting a pair of leads from these sockets to an amplifier of some kind, you can blow your neighbours into the next street – in stereo!

Some monitors have got audio inputs, but otherwise any domestic hi-fi with line inputs can do the trick. STF and STFM owners need not despair, though. Some sam-

pler packages (such as Microdeal's *Stereo Replay* – see the table on page 56) have their own built-in stereo line inputs and outputs.

If you're not after a sampling package in particular but would still like stereo sound, check out Microdeal's *Stereo Playback* which is a stereo sound cartridge that connects to the ST's cartridge port and printer socket respectively. For more information, see STF 22. If you missed that, see page 44.

easily boost the size of your sound bank for next to nothing by scouring the PD libraries for compatible samples. It doesn't cost much to find out what tracker music can sound like – plenty of examples can be found on PD demos.

Trackers tend not to use traditional musical notation – tracker music is made by creating a list of samples and ascribing various values to them. So, no musical knowledge is needed – but the sample list may be frustrating for more accomplished musicians.

One program which breaks this convention is Microdeal's *Quartet*, a sample sequencer which enables you to create tuneful music using conventional stave-based musical notation. There's nothing too difficult about it, though. You simply pick up notes of the required length and place them on the stave in the desired order using the mouse.

To get experience of using tracker software, take a look at the *TCB Tracker* demo on *ST FORMAT* Cover Disk 16 – turn to page 44 for details of how to get hold of a copy. Alternatively, try the Public Domain *Sound Machine* from Riverdene PDL (Disk 958) – see our PD library directory on page 38.

SCOREWRITERS

There are other types of non-MIDI music software. Scorewriters are packages which enable you to create and print musical scores. Some, like *The Copyist DTP* (£249.00 Zone Distribution ☎ 081 766 6564), have quite a comprehensive array of musical symbols and extremely good printer support, making them suitable for serious music publishing work. *The Copyist* has recently been updated, and is also available in an entry-level form as *Copyist Apprentice* (£99.00). Scorewriters can often be used in conjunction with MIDI sequencing software, enabling you to instantly "transcribe" already-recorded music into musical notation. More on this in future issues – but for a roundup of packages available, see STF 29.

EDUCATIONAL MUSIC SOFTWARE

Some schools already use educational software which exploits the internal sound chip to teach listen-

ing skills and the fundamentals of music theory is already in use in some schools. Many of these packages (such as SoundTrack's *Rhythm Trainer*, *Pitch Trainer* and *Theory Trainer* – from Keyboards In Action ☎ 0752 346200) work by presenting you with a series of tests which ask you to (for example) identify notes and musical intervals after they have sounded. In some, you have to place note symbols correctly on a stave using the mouse; with others you get multiple-choice question and answer tests. You get points for correct answers and sometimes for speed.

These packages sound like a good idea, but are sneered at by some teachers for their limited scope, and are only likely to hold your attention for about as long as it takes to beat your own high score three or four times. The better educational music packages, such as *Tunemaker* and *Rhythm Kit* (£39.95 each from Impac Resources ☎ 0751 77456) concentrate less on tests and more on creativity, including the option of playback over MIDI.

SOUND SYNTHESIS

Sound synthesis software is generally treated as something of a specialist area and is not really used widely. Leaders in the field are The Composers' Desktop Project (11 Kilburn Road, York YO1 4DF), who have developed a suite of ST programs capable of advanced digital synthesis and processing. This is likely to be of interest to serious composers, especially if they have a few bob spare – the CDP system does involve some pretty expensive hardware. **stf**

NEXT ISSUE

Next month, a no-nonsense, down-to-earth, jargon-busting once-and-for-all introduction to MIDI. Discover how to create your own MIDI setup – and why you should bother with one at all. Choose from the best MIDI software to suit your needs and your pocket.

JARGON BUSTERS

If you're new to making music using your ST, then you need this bit where we explain what all those strange words mean.

Analog to Digital Converter (ADC) – device for converting sound from a microphone or line input into a machine-readable form, after which it is known as a sample.

Digital to Analog Converter (DAC) – the reverse of an ADC, this converts a sample back into a signal suitable for a loudspeaker.

Digital Effects/Filtering/Processing – effects are things like echo, delay, and reverberation – they can give a sample more atmosphere. Your software creates effects inside the ST by performing calculations on the numerical sound data. Digital filtering refers to advanced tone-control options for samples. Digital effects, digital filtering, and sample editing are all forms of digital processing.

Channels/Voices – in sampling packages, both of these terms mean the same thing – that is, the number of different sounds that can happen at the same time. A four-channel sampler may be able to use 15 or so samples in one piece of music, but only four may play simultaneously. Channel No 5 is a perfume.

Line inputs/outputs – hardware ports for sending and receiving "line level" audio signals. Distinct from "mic level" inputs, which deal with the weaker signals produced by microphones.

Noise generator – the ST sound chip's noise generator makes a sound a bit like what you get when the TV goes wrong. Very useful for creating your own simulations of TVs going wrong.

Pitch – the pitch of a musical note is how high it is – moving up the scale is the same as increasing the pitch, and vice versa. Technically speaking, an increase in the frequency of an oscillator produces an increase in pitch. The pitch of a sampled note is changed by varying the sample playback rate – but don't worry, it's usually all handled by the software.

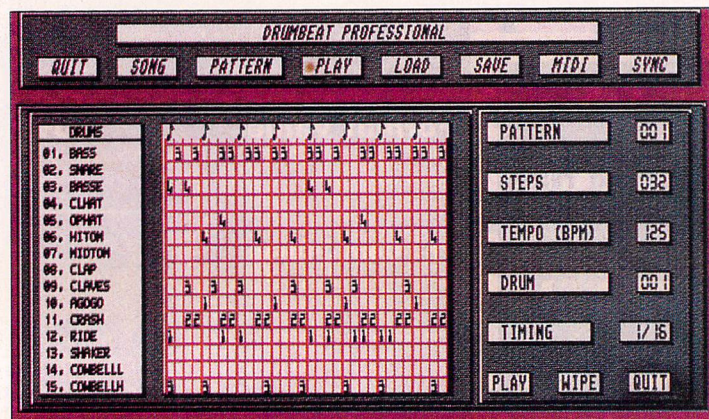
Sampling – capturing sound in a digital form for convenient playback, processing, and storage. There are a number of hardware devices available which are dedicated to this task, but with the right software and a cheap (or perhaps expensive) add-on, your ST becomes a sampler. Each block of sampled sound, whether it's a single drum, an "Ah Yeah," or a short snip of music, is called a sample. Confusingly, the word is also used to describe each cycle in the sampling process, so that a one second sample at 48KHz can be said to consist of 48,000 individual samples.

Sequencing and Sequencers – using software to string together notes or samples in a particular order to produce music is called sequencing. The software itself is the sequencer. Most ST sequencers use MIDI, but "tracker" packages are, in effect, sample-based sequencers.

Staves – the groups of five thin horizontal lines which are the basis for conventional music notation. The singular can be "stave" or "staff" – impress your friends with this startling fact!

Synthesis – you've seen plenty of synthesizer keyboards on *Top Of The Pops*. Sound synthesis refers to any electronic sound-creation. Your ST's sound chip could be seen as a simple synthesiser, but specialised digital synthesis software is also available which enables you to create original sounds on your ST.

Voice – See "Channel."



● *Drumbeat Professional* measures the sample replay tempo – the speed at which your samples are played back – in beats per minute (BPM). This is adjustable from 40 to 239 BPM.

THE HOME COMPUTER

Over the last ten years, the computer has established a permanent place in the home, and the number of home computer users increases dramatically every year.

Many people have yet to tap the full potential of their home computer and are constantly looking for new ideas and applications.

The most popular systems have proven to be the ST, Amiga and PC, and at the International Computer Show, you will be able to see, try and buy a whole range of products and services which will help you to maximise your use and enjoyment of these machines.

Working from home? In the home office feature you will see all the latest technology available for the small home office, including word processing, spreadsheets, desk-top publishing, upgrades, tele-networking and modems.

Looking to help your child's education? Many companies will show all the latest computerised educational courses from early learning to GCSE and beyond.

What about Multi Media? It is now possible to create, reproduce and store sound using your home computer thus enabling you to unleash your own musical creativity and improve your musical performance. Video and visual interfaces are another rapidly developing field where you can edit and change your home videos.

All this and entertainment too! Many exhibitors will be showing all the latest games software and of course the hand held games consoles - the fastest growing home computing niche.

So whatever your area of interest, you'll find the hardware, software, peripherals and consumables you'll need at the International Computer Show and all at great show prices.

Pre-purchase your fast lane tickets to save money and beat the queues. Simply call the ticket hotline number 0726 68020 for your tickets now. Or send the voucher with your cheque or credit card number. Closing date 3rd July 1992.

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This sound sampler offers real-time special effects – echo, reverb and much more – plus STE stereo support

DESCRIPTION : Stereo Master

PRICE : £29.95

ORDER N° :

ST394

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Get hold of £25 worth of software and make certain you get your hands on a copy of Britain's biggest-selling ST magazine each and every month for a whole year. Turn to page 44 now for our astonishing offer.



PLAYBACK & QUARTET MICRODEAL

Playback stereo sound cartridge plus the excellent Quartet sample sequencer (RRP £49.95) for a tenner!

DESCRIPTION : Playback & Quartet

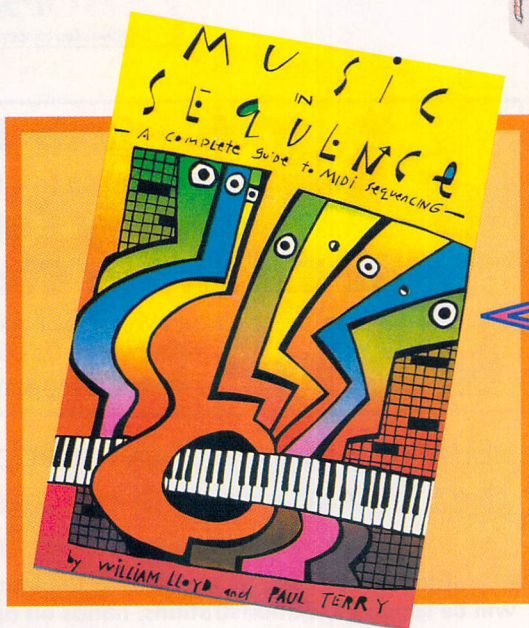
PRICE : £29.95 **ORDER N° :** ST372

DESCRIPTION : Playback ONLY

PRICE : £19.95 **ORDER N° :** ST379



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MUSIC IN SEQUENCE MUSIC SALES

This easy-to-follow book guides you through the process of writing songs on a sequencer.

DESCRIPTION : Music in Sequence

PRICE : £12.95 **ORDER N° :** ST398

★ STAR BUY ★ STAR BUY ★ STAR BUY ★ STAR BUY

THE STOS COLLECTION

MANDARIN SOFTWARE



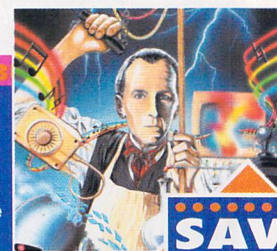
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DESCRIPTION : STOS collection

PRICE : £49.99

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FUN SCHOOL 4 - EUROPRESS SOFTWARE
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DESCRIPTION : Under 5s

PRICE : £17.99 **ORDER No :** ST389

DESCRIPTION : 5 - 7 year olds

PRICE : £17.99 **ORDER No :** ST390

DESCRIPTION : 7 - 11 year olds

PRICE : £17.99 **ORDER No :** ST391

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DESCRIPTION : WINNERS COMPILATION

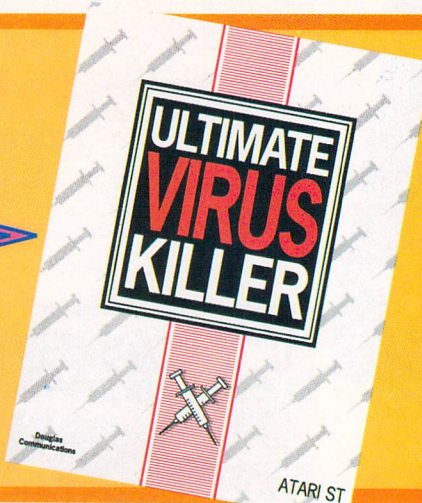
PRICE : £20.99 **ORDER No :** ST413



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DESCRIPTION : Ultimate Virus Killer
PRICE : £9.99 **ORDER No :** ST414



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ST FORMAT
Keep your collection of the world's top ST magazine together in this high quality binder with ST FORMAT printed on the spine - now in a bigger size!

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PRICE : £5.95

ORDER No : ST112

DESCRIPTION : Two Binders
PRICE : £10.00

ORDER No : ST1122

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STOS 3D MANDARIN SOFTWARE
An extension to the **STOS BASIC** language (not included): enables you to create and manipulate 3D objects - **FORMAT** Gold winning *STOS 3D* makes it as simple as it could be.

DESCRIPTION : STOS 3D

PRICE : £29.95 **ORDER No :** ST396

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TIMEWORKS PUBLISHER 2 GST SOFTWARE PRODUCTS

The new upgrade to GST's acclaimed DTP package - with automatic text wrap-around, custom page sizes, quick key shortcuts, and much more, even on a standard 520ST.

DESCRIPTION : TIMEWORKS 2
PRICE : £99.95 **ORDER No :** ST401



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You've seen Compo's Write On strut its stuff – now's your chance to get hold of more fabulous goodies from Compo Software and ST FORMAT

RAM UPGRADE

Many serious applications and an increasing number of games only work with 1MByte of memory, yet the basic ST contains just half of that – 512K. Before you think about selling your ST and buying one with more memory, upgrade it yourself with these exceptionally-priced RAM upgrades.

If you've got a 520ST, when you load *Write On* you only have about 100K of free memory. This is fine for most uses but if you intend making serious use of this package, then more memory is going to be helpful. By adding a 0.5MByte memory upgrade you can increase your available memory by five times!

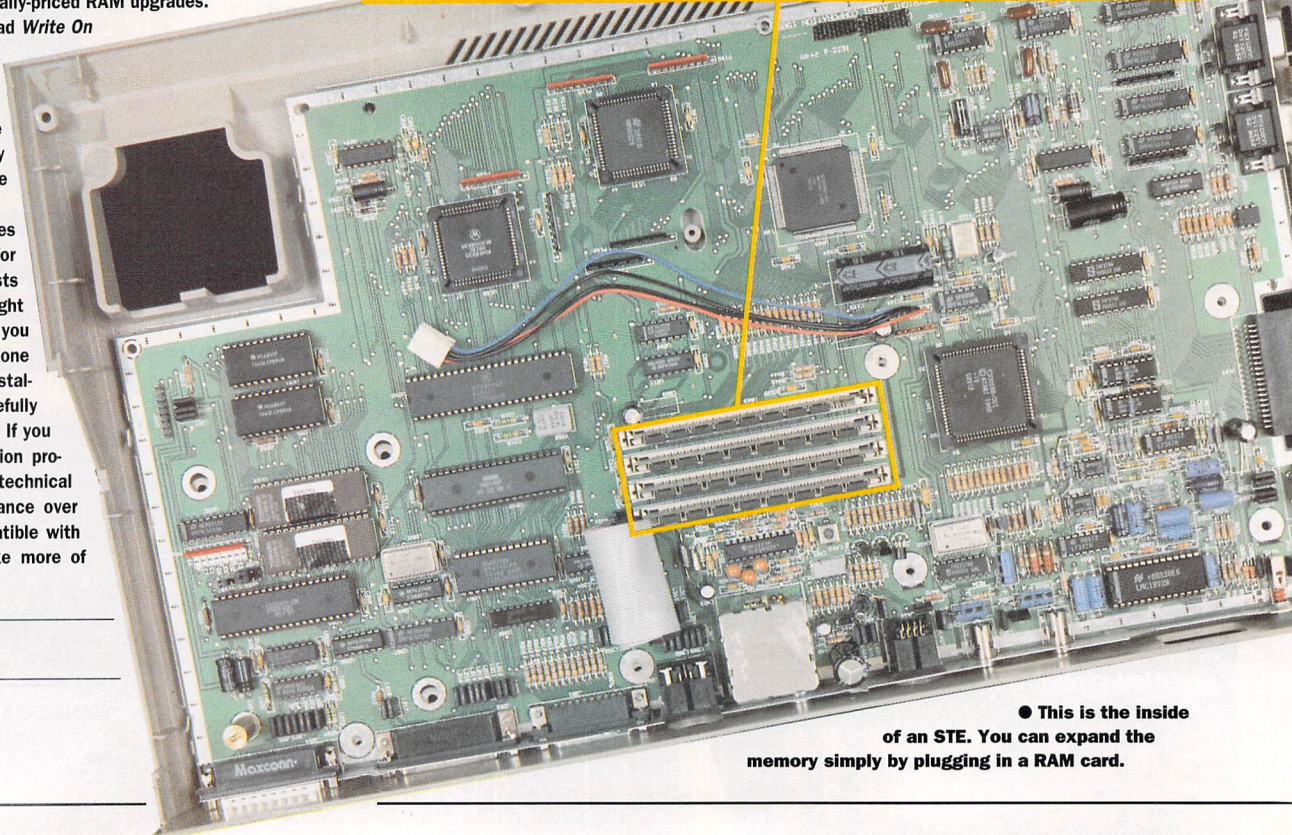
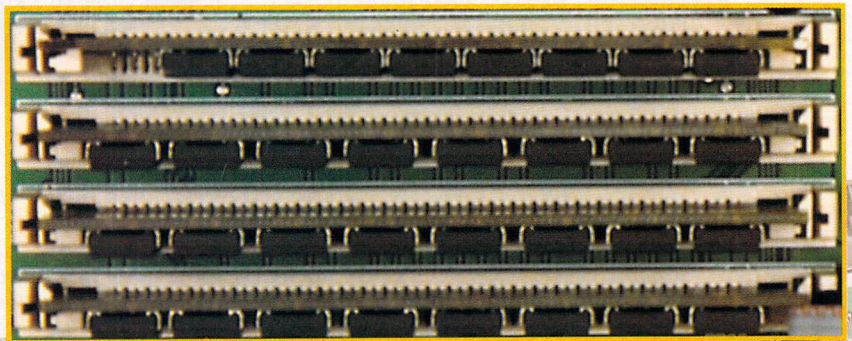
There are two memory upgrades available – one for the STE and one for the older STFM. The STE version consists of two 256K SIMMs which plug straight into your ST. If you own an STFM then you get a complete board which plugs over one of the chips in your ST. The complete installation takes around an hour and is carefully explained in a well-documented manual. If you have any problems during the installation process you can contact the specialist technical staff who are available to offer assistance over the phone. The extra memory is compatible with all ST programs, enabling you to make more of your software.

DESCRIPTION: STE RAM upgrade

Price: £17.50 ORDER NO: ST 399

DESCRIPTION: STFM RAM upgrade

Price: £45.00 ORDER NO: ST 400



● This is the inside of an STE. You can expand the memory simply by plugging in a RAM card.

best possible prices

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COMPO SOFTWARE

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If you want fonts but don't want to study for a degree in typography, *C-Font* is for you! This powerful package takes Calamus fonts and converts them to a special *Write On* format, enabling you to use them at any size. Since Calamus fonts are available from most PD libraries (catch our directory on page 38 if you want some), you have access to a vast source of new *Write On* fonts which can also be used in *That's Write*, Compo's upgrade from *Write On*. *C-Font* generates both bitmap and printer fonts for each font you want to convert. These are then given the correct names and saved in the right folders – you don't have to do a thing!

C-Font also works with *Timeworks Publisher 1* and *2*, *Easy Draw 2* and other GDOS programs.

DESCRIPTION: C-Font

Price: £9.99 ORDER NO: ST 401



PRINTER DRIVERS

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180x360dpi and 360x360dpi driver for the Canon BJ-10e inkjet printer. Includes 10e internal fonts.

DESCRIPTION: BJ-10e Printer Driver

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DESCRIPTION: Amstrad GQ3500 Printer Driver

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DESCRIPTION: Deskjet 500 Printer fonts

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DESCRIPTION: NEC P6+ Printer Fonts

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DESCRIPTION: Deskjet Helvetica Cartridge Support

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DESCRIPTION: Deskjet Times Cartridge Support

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Ask us another

Foolish is the man (or woman) who blindly proclaims: "There is nothing, matey, nothing, that you can tell me about the ST." We guarantee that if, after reading this ST Answers section, you don't learn three things you didn't previously know, we'll come round and paint your bathroom*

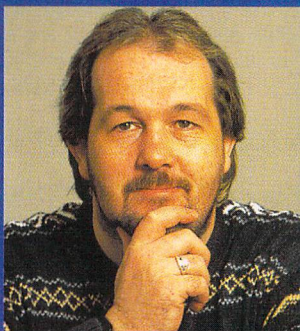
THE ST FORMAT EXPERTS: THE MEN BEHIND THE WIBBLE

Not lean, not mean, and not anywhere near the scene



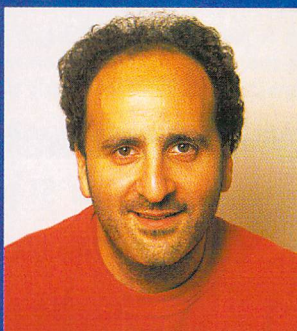
ASA BURROWS

While others were learning to walk, Asa was visiting the great Swami STOS and being taught all the mysteries of this exotic language. Now he's ready to share his knowledge, for just a small fee.



BARRIE CAPEL

The Capel clan own world copy-right on being clever about *GFA Basic*, hence his involvement with this sordid little affair we call ST Answers. (We tried to get the Ed to answer GFA queries but he was too "busy.")



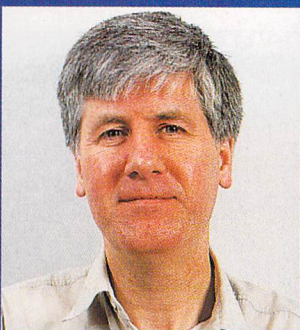
VIC LENNARD

Sir Victor of Lennard: raconteur, unshaven type, musical impresario, El Presidente of the UK MIDI Association, friend of the earth, pal to planets, acquaintance of asteroids. He knows something about MIDI too.



CLIVE PARKER

The Parker boy done good. After heartbreaking years of being mistaken for an ordinary man in the street, he joined *ST FORMAT* as our new Technical Writer and is now an ordinary man in a magazine.



ROGER PEARSON

Roger is a known assembly language user – yes, the truth hurts, but there you are. Previous convictions include the writing of *EZText Plus*, and he'd also like 4,164 other offences to be taken into consideration.



ED RICKETTS

Longs to be a character in a David Lynch film. In the meantime, makes sort of a living by being *ST*'s Games Editor and inventing new and wonderful ways to use the word "er". And that's about it. Er.

THE ICONS – cut out and keep

BEGINNERS



If you're still puzzling how to get the joystick plugged into that big rectangular slit in the side of the ST, these are the tips for you. Bits the manual decided were too obvious explained here.

COMMS



Those modem thingies – what are they? How d'you get one connected up? What do all those little red lights mean? What's a BBS? Why aren't you reading the answers to these questions already?

DISKS



Love 'em or hate 'em, they're square and usually blue. And sometimes they go horribly, tragically, senselessly wrong. Why? How d'you get 'em working again? You can probably guess by now...

GAMES



Can't get past the giant frosted lemon cheesecake on level 94 of *Llamatron*? That's 'cos there isn't one. Other, more sensible, game queries answered where you see this icon, often correctly.

GRAPHICS



How do you connect a mono VGA monitor to the ST? You can't. There, now you don't need look for the graphics problems at all – unless you want to know everything and anything about ST graphics, anyway.

HARD DRIVES



Not so hard when you've read these tips. How to get one connected, how to get it formatted, how to make it faster, how to store more data on it and how to paint it a fetching shade of orange. Or not.

PRINTERS



Answers those tricky queries like "When I connected my Linotronic typesetter to the ST and used the Epson FX printer driver in *PageStream 2*, it didn't work. Why?" Well, perhaps not quite that tricky...

PROGRAMMING



Once upon a time even Jeff Minter didn't know how to whizz a pixelised llama across the screen. If Maelstrom had had this section for reference when they were writing *Midwinter 2* it would have been on schedule. It's that useful.

SOUND



"Yeah, it's your pitch bend pedal, mate. Also Patch Change #1 is linking to yer celeste when it should be hooked up to yer marimbas." If this is making no sense whatsoever you need our Sound tips.

ST PROBLEMS



Problems with software, hardware, firmware, vapourware, wishware, kitchenware and underwear explained where you see this icon. Kind of a Samaritans for the ST, really.

Your Write On queries answered – page 64 • Sequencer One: more tips – page 68 • Your programming problems solved – GFA Basic, STOS and assembly language • Full Shadowlands solution from the programmers themselves – page 79 • Cheats for 25 of your favourite games, including Populous 2, Kult and Robocod – starting page 74



STOS Corner — Asa Burrows tackles your STOS queries

SOMETHING FOR NOTHING

I've got some simple questions about STOS.

- 1 Can I have full screen sprite movement and animation while scrolling the background full screen – for example, no borders?
- 2 Can I have more than 16 colours on-screen without invoking the Horizontal and Vertical interrupts?
- 3 Also, can STOS make me a cup of tea? Is this possible without having to use machine code?

Hew Davies, Bangor

stf: No. If you don't want borders, but do want flashy colours and a cup of tea, you need to learn machine code. The only way to incorporate machine code movement and animation is to write an extension for STOS to enable you to create the commands that you want. GFA Assembler on this month's special Cover Disk can do the job for you. See page 6 and start learning assembler now. Assembly code can easily be compiled into machine code.

BY YOUR COMMAND

I am presently using STOS 1.62 on an STE and find that when I use the **Move** command – to move a sprite, for instance – I cannot use a letter for the speed variable. This makes programming very awkward if I want to change the direction and speed of a sprite consistently. For example:

```
move x 1,"(5,5,0)"
```

If I could do the latter, it would be a little better. Do you know whether this is possible on a later version of STOS?

Mr V McClure, Devon

stf: It's not possible to do this on any version of STOS Basic and it's unlikely to feature in any versions of STOS. You can, however, simulate it with a variable, by using the **Str\$** command in this way:

```
a$=str$(a) : move x 1,"("+a$+",5,0)"
```

This is just an extremely basic example – if you use the string commands carefully, you should be able to get it running fairly quickly.

ABSOLUTE BEGINNERS

I have some questions about STOS.

1. How do you design and make the background screen?
2. How do you make them all into a program?
3. How do you move the sprites with the mouse or joystick?
4. How do you make the title screen?
5. How do you make the menus for different things?

Giuseppe Elia, Peterborough

stf: You are clearly a newcomer to programming. You should go to your local library and study books on BASIC programming. You don't need to find a book specifically dedicated to STOS to begin with, because STOS is a version of the BASIC programming language. There is not enough space in STF to answer all your questions in detail, but if you work carefully through the examples in the STOS User Manual, it becomes easier to understand and you should soon be able to answer your own questions.



Your ST problems have been pouring into the **STF** office by the sackful – Clive Parker and his team of experts emerge for just long enough to answer these questions

INTERNAL INJURY



I have started having trouble with my internal disk drive. I am getting messages that the disk is write-protected when it is not. If I eject the disk and re-insert it, it sometimes works okay. This is happening

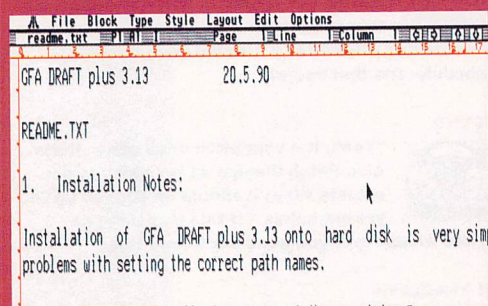
more and more often. Please advise me – there are not many ST repair centres in Finland.

Juha Toivanen, Finland

stf: There may be a bad connection to your drive which is causing an intermittent fault, or it

could be the drive itself. See if you can find a local computer shop or PC repair centre to have a look at the drive – they don't have to be ST experts, because 3.5 inch disk drives for PCs are practically identical to the ST's. They should be able to sort out this problem for you.

Write On? Right On!



● Don't worry if you have weird lines in your Write On printout – simply turn off the corner clock.

WRITE OFF?



I am unhappy to discover that I am unable to get a correct printout from Write On from your Cover Disk 33. At first, I thought that it was something wrong with my printer or the printer driver, but the

printout was perfect except for some rather strange lines across the page. They appear over each line of text. A friend of mine with a different printer and using a different printer driver had exactly the same problem. Why are the lines there, and how can I get rid of them? A word processor isn't much use if it can't produce a decent output.

William Kent, Oslo, Norway, via Bath BBS

stf: This is caused by a Desk Accessory or a memory-resident program interfering with Write On – there is nothing wrong with the printers or printer drivers themselves. Try booting Write On with no Desk Accessories loaded and see how it runs, then load Accessories one by one until the problem occurs again. This process of trial and error should determine which program causes the problem. It is good working practice to check all memory-resident programs if you ever have problems running an application.

WRITE ON AND ON



I have a couple of questions about Write On, on Cover Disk 33.

- 1 Why was there no manual provided with the program?
- 2 Is my copy a fully paid up legal copy which I can use as much as I like?
- 3 Am I obliged to register the program?
- 4 Why do I get a £ symbol with <Shift> and <3> when I should get a hash sign (#)?
- 5 How can Write On print out in more than the three fonts built in to my printer?

Seth Sonenthal, California

stf: We gave you the details of Write On's operation in STF 33 and 34, but the official 132-page manual is available from our mail order service (see page 60) for £15.00. Write On is a complete full priced package distributed under licence by ST FORMAT and not given away – the

DOT TO DOT

I would like to achieve horizontal scrolling in units of less than 16 pixels while using sprites. I have been able to scroll from one screen to another in units of four pixels using the `Screen Copy` command, but this is too slow. Is there any other STOS Basic method or a machine code routine? I have Devpac 1 but do not understand assembly language.

Neil Anderton, Colchester

stf: There are many ways of scrolling horizontally within STOS, although all the methods use the `Screen Copy` command. If your machine is an STE, then you could use the hardware scrolling commands contained within the STE Extension which ST FORMAT gave you free with issue 32, and you could write sprite routines for use with the Blitter Extension that was yours on Cover Disk 33 – turn to page 44 to order your copies now if you don't have them. Alternatively, you could purchase STOS Tome, which enables you to create backgrounds with tiles,

and, by using its own built-in commands and some `Screen Copy` commands, you can have fast smooth scrolling backgrounds as well as many other special features. Tome (£18.95) is available from Shadow Software, 1 Lower Moor, Whiddon Valley, Barnstaple, N Devon EX32 8NW and should be part of any serious STOS programmer's software collection.

SOUNDS FINE TO ME

Can you get disks full of sound effects for use with STOS without buying STOS Maestro? If so, where can I get them? Also, how can I get rid of the menu bar from the top of the screen?

Tim Plant, Halifax

stf: The best place to find sampled sound effects is in PD libraries – see STF's directory on page 38. One of the best PD libraries for obtaining STOS Maestro samples is Goodman's PDL (☎ 0782 335650), which is also the official

STOS library. To get rid of the menu bar at the top of the screen, use the `Key Off` command, and recall the bar with `Key On`.

TRACKER

(BOOMA HOOMA CHOOM)

I am thinking of writing a kHz tracker/sampler program for my STE. How can I direct a sample through channels one to eight, to make it an eight channel sequencer? Is there a way in STOS of getting eight samples playing through the DMA at once?

Michael Bartlett, Kent

stf: This is not possible from within STOS itself – you need to learn assembly language and study the way that the STE's DMA works (see page 6 for your guide to GFA Assembler). A good place to start doing this is to look at Atari's DocSupport Two Kit – New machine Programming Guides. It costs £29.99 from the Atari (UK) Spares Administrator on ☎ 0753 533344.



READERS' TIPS

ALTERNATIVE CIRCLES

Paul Tasker of Yarm in Cleveland has a Degas tip. When drawing a circle in Degas Elite, instead of clicking the left mouse button, press <Alternate> and then tap <Insert>. This activates a circle lock which enables you to draw perfect circles.

BUYER SEEKS GUIDANCE



I have had my 520 STFM for over a year now and use it for playing games. I am now keen to exploit the ST's music capabilities and want to build a small MIDI setup – keyboard, sequencer and drum machine – and would like to know what to buy. I have a budget of around £400 and don't mind buying second-hand. I would like a reply, if only to stop me walking into the nearest music shop like a lamb to the slaughter!

Richard Shoemaker, Hampshire

stf: Well, you've started with the right machine – the ST is the professional musician's machine

of choice – and ST FORMAT gave you Gajits' Sequencer One with issue 30. This is one of the few sequencing programs which works with only 0.5MByte of RAM, so you don't have to expand your ST's memory. (If you missed it, turn to page 62 and order it now!)

Check out our Buyer's Guide on page 132 before buying anything. Buying second-hand is a good idea. Most of the music magazines run readers' adverts and you can get some good bargains. The prices below give you an idea of what you can expect to pay this way.

Inexpensive keyboards usually have miniature keys, like the cheapest of the Yamaha PSS

copyright is retained by Compo Software. Write On is not PD or Shareware and cannot be distributed as such. However, you may use the Cover Disk copy for your own use without restriction. If you register your copy of Write On with Compo (☎ 0480 891819; £7.50 for one year's support or £15 for lifetime support), they can supply you with the US version of the program which solves your £ symbol problem. Write On prints in graphics mode, so the resultant output has nothing to do with the internal fonts of your printer.

OH BROTHER



What printer driver do I need to use for the Brother S2518 and Write On? I do not have an instruction manual for this printer.

Mr G Watson, London

stf: In most cases, either Epson FX or IBM emulators work with any 9 pin printer. Try installing the program with the Epson printer driver – if this does not work, try the other drivers until you find one which does work. Contact Brother on ☎ 061 330 6531 to check out instruction manuals.

AZERT YOURSELF



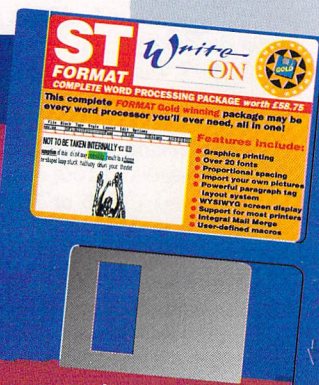
Several people have enquired about foreign language versions of Write On, including Pol Quinet in Belgium, Hans Gustavsson from Sweden and Tis Amor from Villeurbanne, France. They want to know if there is any way of getting Write On to work with the French AZERTY keyboard.

stf: There is actually a French AZERTY version of Write On available from Compo, which they

can supply when you register your ST FORMAT

Cover Disk version of Write On with them; there are also German, Swedish, Danish and US language versions available. You can find details in the READ ME file in Write On about what you have to do to register. The registration fee for lifetime support from Compo is £15.00. Contact Compo Software, 7 Vinegar Hill, Alconbury Weston, Huntingdon PE17 5JA England, ☎ 0480 891819. Please state which language version you require when you register.

● For special offers to help you get even more out of Write On, turn to page 60.





A nice bit o' crackling

1 I have a 520STE and I am having problems when replaying samples via the STE option in TCB Tracker. The sound buzzes and crackles, and sometimes I just get a buzzing and no sample at all. The sample then plays okay after I restart it. Any idea why this happens?

2 Is it true that the STE has eight-channel digital PCM stereo sound? I have been told that it is really the old sound chip that's giving six channels and the DMA sound chip giving two channels. If this is correct, then I am a slightly annoyed because it was the sound improvement that made me want to upgrade my machine to the STE from the older STFM.

Gary Marsh, Reading

and PSR ranges. They generally lack touch sensitivity – whether you breathe on a note or hit it with a sledgehammer, the level is pretty much the same. If you are serious about trying to create music with your ST, you should give these a miss.

The next pitfall that you should try to avoid is buying a keyboard which can only play one sound at a time – it may be polyphonic or be able to play many notes simultaneously, but only one sound. You would then need an additional sound module. To keep within your budget, you need to be looking for a keyboard synth which has internal sounds and is “multi-timbral” – that is, can play many sounds at the same time.

Roland's D-5 (£300) has become very popular in schools for these very reasons. It offers a five octave, full sized, keyboard with internal sounds and the ability to play up to eight sounds and a drum kit at the same time, subject to a maximum of between 12 and 32 notes, depending on the sounds being used. Another possibility is the Kawai K-1 (£300), which is similar to the D-5.

Both of these have drum sounds on-board, but you then need to program the drums from the sequencer, and many people prefer to use a drum machine with its pattern-based technology. For around £100, you should be able to find a Roland TR505 or TR707, Yamaha RX17, Korg DDD5 or Kawai R50, all of which would fit the bill.

All you need then is some way of being able to hear the synth and drum machine. You can use a hi-fi, but be careful of the levels you play at – many a good pair of loudspeakers have bitten the dust once the bass drum gets going. Also, you may need a small mixer if you want to work in stereo because most drum machines and synths have stereo outputs – a passive 4:2 mixer shouldn't cost you more than £30.

WHERE'S MY RAINBOW SYMBOL?



In ST FORMAT 29 you said TOS 1.4 could be recognised by the rainbow symbol in the corner of the Desktop. I have used the ST Type program that you gave away on Cover Disk 23 and it tells me that I have TOS 1.4, yet I have no rainbow symbol any-

1 stf: We have been unable to duplicate your crackling problems using TCB Tracker on our STEs. It is most likely that you have bad or corrupted samples or a hardware problem with your machine. Try using the software on a friend's STE. If that has no problems with the output, then it would indicate that you have a hardware problem, and you need to take your machine to be tested. If your STE is still under guarantee then return it to the supplier for repair.

2 The STE does have eight-channel PCM stereo sound which is generated completely separately from the Yamaha sound chip's output.

where on my Desktop. I am worried that I might have a faulty machine.

Paul Hayes, County Wicklow, Ireland

stf: Don't worry about it, Paul. You'll find the rainbow symbol in the Desktop Info alert box. You can see this from the Desktop by moving the mouse pointer to the Desk menu and selecting the Desktop Info option. An alert box opens up, showing the Atari copyright message and the Atari Fuji symbol with colours scrolling through it, giving rise to the nickname “Rainbow TOS.”

PICK A SEQUENCE



The moment I got Master Sound 2 from STF's mail order service, I made my first demo – one Degas Elite picture and one music sequence. Then I thought, why not make the music play while several pictures load up one after the other? I tried and tried but with no success.

Please could you tell me how to do it. Would I need STOS or any other ST BASIC?

James Allison, South Yorkshire

stf: Unfortunately you can't display several pictures one after another with Master Sound. Last month we ran a Cover Disk program called



TOS Numbers

The dates on the TOS version of my friend's new STE mean that it has TOS 1.4 is installed, yet your Write On article states that it should have TOS 1.6. Why is there a discrepancy here? And where is the spell checker for Write On? I couldn't find it on my disk.

Kevin Edwards, Essex

The dates in the “about” box on my STE indicates a version 1.4 TOS on my STE. Is this correct?

Steve Moseley, Nottingham

stf: The STE has a TOS version 1.6 installed regardless of the dates shown – if the machine is an STE, it has TOS 1.6. The dates signify the various copyright dates for each TOS release. TOS 1.4 was installed on the last version of the



READERS' TIPS

SAVE THAT DISK

If you have a disk which has been working perfectly for months but suddenly comes up with the message “The disk in Drive A may be damaged,” do not despair! There is a very useful option in KnifeST (£34.95 from HiSoft 0525 718181) which enables you to repair disks, although this only works on disks that are not formatted in weird ways. All you need to do is go to the Format/Copy menu and select the Copy and Repair option. You are then prompted for the source and destination drives (on a one drive system source and destination are both drive A). Click on Copy and follow the on-screen commands.

As long as the disk has not been too seriously corrupted, you usually end up with a perfect working copy of your original disk.

N D Ploom, Bristol



● Don't worry if your disks have a bit of corruption on them – KnifeST leaps nimbly to the rescue once again.

Intro

Play which does exactly what you want. See page 44 to order your copy if you missed it.

GERIATRIC ST PROBLEM



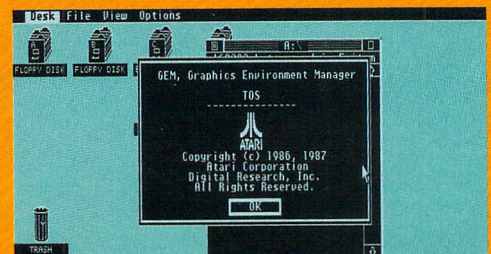
I have an old STFM and I am having trouble with almost all of my connectors. My monitor port, my mouse and joystick ports and the external drive port are all knackered. I cannot get a picture and my external drive does not work unless I wiggle the lead about. I can do some soldering, so can you please give me some hints on repairing my connectors?

Simon Bates, Tyne and Wear

stf: It is not advisable to try repairs yourself because you may cause more damage to your machine if you are not 100% sure of what you are doing. Take your ST to your nearest repair shop – or if there is nowhere local, then try Eve-

STFM released – the one with the blitter as standard.

You can't find the spell checker in Write On because there isn't one.



● This is what the Desktop Info dialog box looks like on a TOS 1.2 machine.

MEMORY UPGRADES

HCS STE and MEGA STE UPGRADES

HCS STE memory upgrade kits come complete with full instructions designed for the novice. The complete job should take no longer than 15 minutes. 2 and 4 megabyte kits come with free utilities disk and multitasking software.

Upgrade from 520 to 1040£18.00
To 2 Megabytes£60.00
To 4 Megabytes£115.00

STF (M) and Mega ST upgrade kits

Xtraram Deluxe plug in upgrading system fits inside the computer. It can upgrade your computer in stages to 1Mb, 2.5Mb* and 4Mb. The kit comes with comprehensive instructions designed for novices. The kit uses SIMMS, so is easily upgradeable.

Frontier Xtraram *Deluxe*
Quality SIMM upgrading system
Upgrade from 520 to 1040£50.00
To 2.5 Megabytes£90.00
To 4 Megabytes£140.00

Solder in Kit

The solder in kit is designed for people with more electronics experience. There are four types of chips used in the ST: 16 DIL chips, 4 DIL chips, 4 Surface mount chips and 16 surface mount chips. All types are normally stocked, check your configuration before ordering.

Solder in kit (all versions)£25.00

REPLACEMENTS

The HCS power supply and disk drive upgrades come complete with fitting instructions and plug straight into the ST without soldering. The Power supply produces less heat than the original so is more reliable.

Replacement power supply£39.95
Double sided disk drive kit£47.00

ACCELERATORS

The AD Speed made by the famous ICD corporation fits in as the PC emulators. It is hardware and software switchable between 16 Megahertz and 8 Megahertz. The new SST 68030 accelerator is only available presently for the Mega ST. It gives a phenomenal speed increase by using the super fast 68030 processor running at 50 Megahertz and comes with TOS 2.5! The SST accelerator allows 8Mb of ram on board and has a position for a co-processor.

AD Speed ST£145.00
AD Speed STE£165.00
68030 SST - 50£550.00

PC EMULATORS

PC emulators allow the ST to use PC compatible programs without affecting the ST in normal operation. PC Emulators for the ST/F/M computers require the user to solder a 68 pin socket on top of the microprocessor in the ST. Installation in the STE simply plugs on top of the microprocessor using an adapter board, into the expansion slot of the Mega ST, at extra cost.

AT Speed C16£205.00
AT Speed 8£135.00
PC Speed£90.00
Fitting for above£30.00

The Vortex 386 emulator allows a high degree of compatibility and speed for PC compatible programs on the ST. True multitasking through the advanced features of the 386 allows windows to be used in enhanced mode. The AT Once 386 can accept a 387 Co-processor, this will speed many programs up to a factor of 5 times! The 386 sx emulator also has the capability for Fastram cache on board to allow a norton factor (speed comparison) of 15!

VORTEX 386 SX-16£330.00
387 CO-PROCESSOR£117.00
FASTRAM CACHE£30.00

SPECTRE GCR MAC EMULATOR

The Spectre GCR cartridge allows the ST to emulate the Mac giving 20% more speed than the Mac plus with 30% bigger screen area! It is fully compatible with ST hard drives. When used in conjunction with the SST it can beat the fastest macs. The megatalk board fits the Mega ST to allow connection to Mac specific peripherals, LAN network and Mac SCSI.

SPECTRE GCR (Inc. 128K Roms)£300.00
Megatalk Board£250.00

HOW TO ORDER

Enquiries and credit card orders please
Fax/Call on (081) 777 0751

Please phone with enquiries between
10.00am and 6.00pm Mon to Fri.

Enquiries cannot be taken by post.

For mail order please send description of goods and
cheque/PO to:



HCS
35 Hartland Way, Shirley,
Croydon CR0 8RJ



Prices include VAT and P & P
Goods normally dispatched within 2 working days.

E & OE

**5
YEAR
GUARANTEE
ON
MEMORY**

**14
DAY
NO QUIBBLE
MONEY BACK
GUARANTEE**

sham Micros (☎ 0386 765500), who offer a fixed repair rate of £65. It sounds like you'll be getting your money's worth!

AM I RENDERING?



I have a problem with QRT. I've tried doing a sample picture, entering the parameters in the dialog box as stated, and all I get is a screen with the authors' names and a flashing cursor. There's no indication that rendering is taking place. Help!

Paul Cardin, Merseyside

stf: Right, assuming both QRT.TTP and the sample text file (say MIRROR.QRT) are on disk A, all you need to do is: double-click on QRT, enter -a 0.625 a:MIRROR.QRT and press <Return>. The title screen should appear along with some information and line that says "Tracing scanline xxx (xx% complete)". Both numbers increase as the rendering takes place until it's 100% complete.

WEIRD WHIR



With some of my games the drive whirs after the game is loaded – is there something wrong with my drive?

Steve Waters, Gateshead

stf: Some games access the drive continuously because of the way the game is programmed, but don't worry, this is completely harmless and does not damage the drive in any way.

RTF FILES



I use an Epson PCAX2 to do my course work on, using Microsoft Works. I know that I can transfer ASCII files from my ST to the Microsoft program on PC for-

matted disks. If I save my work at home in RTF format, then I can load them into the PC ready formatted. Can I do this on my STE?

M A James, Luton

stf: To create Microsoft RTF files on an ST, you need a word processor which has an option to save in this format. The FORMAT Gold rated Protext 5.5 has this option – you can get it from Arnor ☎ 0733 68909 for £152.75



READERS' TIPS STICK THIS

Mark Elliot from Newark has offered an alternative solution to D Jackson's dodgy keyboard problem from STF 33 – where sometimes the keys on the right-hand side seemed not to work at all. Mark had the same problem with his machine and discovered it was caused by his joystick. Many joysticks have switches for use with different machines and the switch on his was turned to the Sega position, causing information to be sent continuously to the keyboard processor, thus overriding any keyboard input. Similar problems can also be caused by auto-fire switches being left on.

DATABASE DESIRES



I have a 520STE and I need an address book type of program to store my record collection under the artist's name, title, catalogue number and format (CD, cassette, LP). I do not need to save each artist in strict alphabetical order within each section.

Steve Drummond, Warrington

stf: Because your needs are not too complex, you can get the program you need from a PD

library. There are several database programs available – one that is well suited to your requirements is the Super Card Index on this issue's Cover Disk – see page 14 for details. Super Card is Shareware, so if you register with the authors for £5.00, they will automatically send you the latest version of the program.

BEST PRICE



I am thinking of getting a 4MByte Mega STE but am confused by the difference in the asking price between two companies. First Choice offer a 4MByte Mega STE with 48MByte hard drive for £1,039.99 with a SM144 monitor for £129.99 extra, and Gasteiner offer the same machine with 80MByte drive and FM144 monitor included for £1,019.00. How can there be such a difference between the prices? What is an FM144 monitor?

Adrian Mitchell, Shepton Mallet

stf: We checked with Gasteiner (☎ 081 365 1151), who told us that there are errors in their advertisement – the monitor is not included in the price of the machine. The advert should also read SM144, not FM144 – it's a mono monitor and is to be reviewed in next month's issue of STF.

First Choice (☎ 0532 637988) have the Mega 1 STE with a 48MByte drive for £539.99, the Mega 2 STE with 48MByte drive for £859.99 and Mega 2 STE with 48MByte drive upgraded to 4MByte RAM for £919.99.

SOMETHING JUMPING



My three month old 1040STE's screen starts jumping about and becomes impossible to use after about two hours – I have to turn the machine off



Sequencer One special

STF's music expert Vic Lennard tackles your queries about Sequencer One, the package that was yours with STF 30

How can I convert samples that I have produced with MasterSound 2 so I can use them with my copy of Sequencer One?

Peter Hadden, Reading

stf: MasterSound 2 samples are in .AVR format while Sequencer One samples are in .IFF format. As far as we know there is no utility to convert between these formats. However, the upgraded version of Sequencer One Plus can load .AVR format samples, as well as others such as .SPL or .SAM samples, so if you really want to work with the samples that are on Sequencer One, upgrade to the Plus version.

For a limited time, you can order the Sequencer One Plus Upgrade Kit for only £39.95 – add it to Sequencer One, which was yours on STF 30, and you've saved a massive £90! Simply use the coupon on page 55, quoting Order Number ST395.

With Sequencer One, is there any way I can easily change step values for a complete track after playing in from a MIDI keyboard?

D C Woodman, Brighton

stf: The bad news is, no – not with Sequencer One. However, Sequencer One Plus has a couple of features which may enable you to do what you want. The first is Alter Note Length, where you can make all notes longer or shorter by a percentage, or add or subtract a number of clicks from each note. The second function is called Full Quantize, which enables you to choose a note length to quantize to and then also sets the lengths of the notes to a multiple of your selection. For example, if you select crochet, all notes are moved to the nearest crochet time position and their lengths are all changed to a multiple of crochets.

What is the replay rate of the sample playback on Sequencer One?

Andrew Wood, Southampton

stf: The sampling rate of Sequencer One samples is anything up to 25kHz, but the playback audio bandwidth is 8kHz. In fact, with any sample playback system, the audio

bandwidth has to be less than half the sampling rate to prevent spurious noise called "aliasing."

When using Sequencer One, if I load in the bass drum and set up two bars of four beats, I get a bass drum sound mixed with a sort of fuzzy bouncing sound which goes on beyond the end of the music. Why?

Nick Haley, Milton Keynes

stf: Have you have binned the metronome sample (METRO.IFF) and loaded the bass drum as sample #1? Since Sequencer One uses sample #1 as the metronome, you need to either disable this or leave the metronome in and load the bass drum as sample #2. Go to the Options menu and select Set Metronome. You'll probably find this is set to Audio Sample and Patch #1, which is why you have this problem. Either select MIDI and set a MIDI channel and note number to give you a metronome from a MIDI sound module, or turn the metronome Off if you don't need it.

I've been using Sequencer One from STF 30 for a couple of months now and have one problem: I can't get the metronome to work from the ST's monitor because the



Save that flippin' picture

PINOUT PROBLEM

I have a second-hand portable TV which has a seven-pin DIN socket marked "RGB monitor." What are the connections needed for a lead to go from the ST to the TV? The TV is made by Granada.

Aaron Crane, Prestwich

stf: Before we can safely advise you, we need more precise details about the TV – like the model number. Contact Meedmore (☎ 051 521 2202) who can make up the lead you require, though you'll have to tell them what your model number is.

for about 20 minutes before I can use it again. Is this a fault with the machine?

Anthony John Forster, St Helens

stf: It certainly sounds as if there's a problem with your machine. Take it or send it back to where you bought it from – you should be able to get it repaired free of charge because it is still under guarantee.

KODAK SNAP



I've seen an advert for the Kodak Ekta-plus 7008 laser printer for £499.00. The recommended price is £1,459, so this looks like a real bargain to me. Can

I use it with my STE?

R Stammers, Leeds

stf: As long as the printer has a standard Centronics parallel port, then it should run with any micro – although you may experience problems

MULTISYNC

Peter Smartley of Cardiff and L E Lovelock of Northants have both asked if it's possible to use multisync monitors with the ST.

stf: You can use a multisync monitor with your ST, although you do need to use a special lead with a switch built-in in order to trigger the Mono Detect line – this tells the ST to go into high resolution. System Solutions (☎ 0753 832212) supply a 14-inch Eizo Multisync monitor for £621.58, plus an extra £19.95 for the lead.

when you try and find a suitable printer driver. Most laser printers emulate the HP Laserjet series of laser printers; Kodak confirm that the Ekta-plus 7008 emulates the HP Laserjet 2. Since most good DTP and word processing packages are supplied with HP laser drivers, you could use them with the Ekta-plus printer.

BLIT IT



I have an STFM with TOS 1.2 and I'd like to know if it is worth buying a blitter chip to install into it. If so, how much do they cost, are they easy to install and where

can I get one from?

D Jolley, Wigan

stf: Whether you can fit a blitter into your machine or not depends entirely on the layout of the motherboard: some STs have the holes for the blitter socket, some have a socket already fitted, some have the holes but they are

filled with solder and some boards have no holes at all. Unless you are very good at soldering, it is not really a DIY job – it should really be done in a workshop. If you install a blitter in an STFM, it is a good idea to upgrade to TOS 1.4 at the same time because there are also some problems with the blitter running under TOS 1.2 – pixels tend to be "left behind" on-screen when you move the mouse pointer and when you close windows. System Solutions (☎ 071 252 7775) can supply a blitter and socket kit for £29.95, and can also install it for you for a fee of around £20.00, depending on how difficult the layout of the motherboard makes the task.

ONE DAY MY PRINTS WILL COME



I cannot print out full colour pictures using Canvas, Hyperpaint and other art packages on my Citizen Swift 9 colour printer. How can I get colour printouts?

Richard Murrell, Hants

stf: Because each art package uses a different printer driver, your easiest option is to buy Flexidump Plus (£39.95) from Care Electronics (☎ 0923 894064). This program enables you to produce full colour screendumps.

| Draw | Fill | Load | Compact | 16C FP |
|----------|----------|---------|---------|-----------|
| Line | Arc | Save | FullPic | Sprite |
| K-Line | Grid | Renam | Canvas | Line |
| Hugs | Black | Delete | IMG | HBLs |
| Box | Text | Folder | Degas | 3D |
| Ellipse | Spray | Info | Neo | Sequences |
| Polygon | Segment | Format | Palette | GridInf |
| Sprite | Brush | Quit | 1 C FP | Options |
| Mark | Zoom | | | |
| Fill Pat | None | Colour | Gd-Lock | Rotate |
| | Pattern | Options | Window | Shadow |
| | Watched | File | Animate | Undo |
| | 1 Col FP | Printer | 3 D Obj | Erase |
| | 16Col FP | Cursor | Regular | Rounded |

● Since Canvas does not print out directly to colour printers, a specialised output program is required.

option for this is permanently greyed out. Is there any way around this?

Peter James, Southend

stf: If you go to Set Metronome in the Options menu, you'll see the Audio Beep option. This is greyed out if the output selection in the Set Output option is Output To Monitor, the Sample Playback mode. This is because Sequencer One is using the full capability of the ST's sound chip to provide four channels of samples, so cannot allow it to be providing a metronome click as well. If you want to have the metronome sounding from the ST's monitor, go to Set Output and change it to MIDI Only, but bear in mind that this prevents you from using the sample replay facility.

I have difficulty setting up my Yamaha PSS 780 with Sequencer One. The sounds produced by the keyboard on playback are not the same as those I requested from the sequencer. Also, how do I enter drum sounds from the keyboard? Can I play the samples from the STF Cover Disk on the keyboard?

William Hulme, Lanarkshire

stf: Each time you start up the internal sequencer on the PSS 780, it sends out various MIDI patch change com-

mands. The numbers of these patch changes do not coincide with the voice numbers given on the front panel of the PSS-780 – you need to look in the manual to get the correct numbers. To prevent these from being recorded on Sequencer One, go to Set Filter in the MIDI menu and click on Program Change to have this removed at the MIDI In port and so not recorded onto a track. Now look up the voice that you want a sound to take, check the MIDI program change number and enter it at the end of the track line for the track you are using on Sequencer One. This should give you the correct sound on playback.

To enter sounds from your Yamaha keyboard you need to have the MIDI Out from the keyboard attached to the MIDI In of your ST. Now set up the Sample Palette as described in STF 33 with the sounds of your choice. Make the track of Sequencer One that you wish to record on current by clicking on the greyed-out circle on the left-hand side, change the MIDI channel of the track to L, R, RL or LR to set the audio channel for the sound and finally set the Patch Number at the right-hand side to the number of sample that you want to record. Hit the middle C of your keyboard and you should hear the sample you have selected. You can now record a pattern for that drum by putting Sequencer One into Record mode and pressing down the PSS 780's Middle C in the right places.

In Sequencer One's "Step Time" mode, I wanted to get lots of dotted minims and one or two semi-breves. After saving my song as a .MID file and loading it into C-Lab's Notator at my school I found that the dotted minims were minims tied to semi-quavers and the semi-breves suddenly became dotted minims.

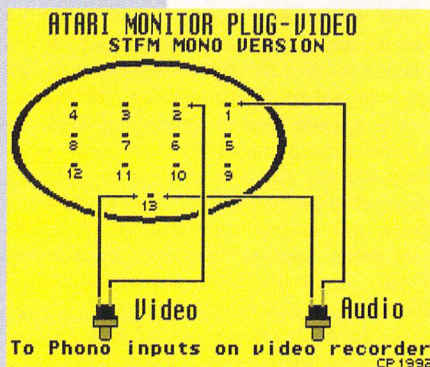
What am I doing wrong?

Simon Dell, Hove

stf: Notator bases the values of the notes that it displays on their length as detailed in the MIDI File that you load in. If it is not showing the correct values, then unfortunately you cannot have been writing the correct values on Sequencer One.

If you go to the Step Editor and click on the keyboard icon to make the transport bar change to a keyboard, you see the Step Entry control box at the right-hand side of the keyboard.

Click on any of the three icons to take you to the box which enables you to alter the note value, gate length and key velocity. Select the note value you want and then set the gate length to 100%. If you haven't done this it defaults to 75% – which explains why a semi-breve, worth four beats, was being scored as a dotted minim, worth three beats, on Notator.



● You can use the composite video output from the STFM (or STE) to output direct to a video recorder.



HOME MOVIES

How can I connect my STFM to my video recorder to create titles which I can use in my home movies? Neither my TV nor my video recorder has SCART sockets.

Susan Hobson, Sheffield

stf: The ST provides a composite video output on pin 2 of the monitor socket and a ground signal on pin 13. All video recorders have a socket on them marked Video In – this is normally a phono socket. Connect pin 2 from the ST monitor port to

the centre connection of a phono plug, and pin 13 of the ST to the outer (shield) connection. By selecting the AUX or Video mode on the video recorder you can record the ST's video output. As for software, check out the latest version of Video Titles reviewed on page 112 this issue.



PC MEECES

Can I use an Elonex PC mouse with my ST? Are Atari going to bring out an STE upgrade to change the processor speed to 16MHz?

Nadeem Walayat, Sheffield



GFA Programmers' Surgery

Barrie Capel tackles your GFA programming queries

VARIED VARIABLES

Peter Martin wants to know why the percentage sign (%) appears after variables in GFA Basic.

stf: This is because GFA Basic allows more than one type of numeric variable, which is used for storing numbers. If there was only one type of variable, it would have to be capable of storing the largest possible numbers, both whole numbers (like 214,232), and floating point numbers (like 21.4232). This takes up memory – in fact, six bytes of memory are taken up for each floating point variable used in GFA Basic v2 whether the space is needed or not. This variable type also slows programs down because of the more complex floating point routines that have to be employed to work on them.

Let's say you wanted to store the value 12 in a variable. First of all, only one byte of memory is needed to store the number 12, and secondly, 12 is not a floating point number – it's a whole number or integer. However, it would be stored in a floating point variable, using up six bytes of memory – wasting five bytes. They soon add up. Plus, floating point routines are used even though they aren't needed, so the program runs slower than it needs to.

To get around this, GFA Basic has several different types of variable, and to identify them they have different signs next to their names.

String variables use the \$ sign which you are probably familiar with, as in A\$ and B\$. Floating point variables have no sign, as in A and B. Integer variables use the % symbol, such as A% and B%, and use only four bytes of memory.

There is also another variable type called Boolean, but these variables can only store two values, TRUE (-1) or FALSE (0), and are usually used only as flags to denote that an action has or has not been carried out. Boolean variables use the symbol ! – as in A! and B! – and use only two bytes of memory.

GFA Basic version 3 has other variable types too, like byte and word (A! and A\$ respectively), so if you only have v2 you can replace these with % if you come across them in listings. As a rule, in v2, try to use integer

values whenever possible to speed up your programs and save memory.

YOU MAY PASS

Steven Thompson in Bristol wants to know how to make an invisible input for entering a password that no one can read when you enter it. The easiest method is to use the INKEY\$ input routine which appeared in ST Answers in STF 33, but to change the line which prints the character on-screen, so that it prints an asterisk instead of the character entered.

SPRITES AGAIN!

If you're struggling to move sprites around the screen, consider this. The ST doesn't have hardware sprites, so you have to create and manipulate them yourself. The easiest way is to use a program specifically designed to create them – especially if you want them animated – but, failing that, the next best thing is to draw them with a paint program, or even the GFA Basic drawing commands, and then cut them out using GFA's Get command.

Placing them on the screen is done with the Put command, but there's an ugly border around the block when it's Put back on the screen if there's something there already. This is because the Get command grabs a rectangle of the screen.

Imagine you have a Pacman type of character on a black background in the top left corner of the screen. GET 0,0,49,49,A\$ grabs the Pacman off the screen in a block 50 pixels wide and 50 pixels high, with its top left corner at 0,0, and places it in the string variable A\$. The routine:

```
HIDEM
DO
  MOUSE X%,Y%,Z%
  PUT X%,Y%,A$
LOOP
```

puts the Pacman on the screen at the mouse position, while you move the mouse around – but only in the default replace mode. All the pixels in the block replace the pixels on the screen, creating the unsightly border around the sprite. To overcome this, there are 16 modes that can be used with the Put command, some of which are more useful than others – refer to the manual for a full list of all 16 modes. The optional mode parameter is added to the end of the Put command, like this:

```
PUT 10,70,A$,mode
```

where mode is a value between 0 and 15. The Put modes employ the logic operators AND, OR, NOT, and XOR to calculate the resulting pixels when comparing the block being Put and the destination – the screen. Comparisons adhere to the following rules – assuming that bit=1 means true and bit=0 means false:

OR – one or both true then result = true – else result = false

XOR – only one true then result = true – else result = false

AND – both true then result = true – else result = false
NOT – inverts a condition – true becomes false and vice-versa

The operators compare bits in the binary equivalents of the register numbers regardless of the colours involved. The resulting value is the binary value of a register, and the colour appearing on your screen varies depending on what colours, if any, you have re-defined in your palette.

The following example demonstrates XOR mode using a single colour ellipse purely for simplicity. However, the XOR mode carries out a comparison with all pixels involved regardless of colour, so the same effect occurs with multi-coloured sprites too.

Listing 1 – XOR PUT

```
DEFFILL 11
PELLIPSE 50,25,35,15
GET 1,1,100,50,a$
CLS
DEFFILL 5
PBOX 0,40,319,140
PRINT AT(8,1);"XOR MODE PUT .J
DEMONSTRATION"
PRINT AT(8,24);"Right Mouse Button.J
To Exit"
,
HIDEM
REPEAT
  MOUSE x%,y%,z%
  PUT x%,y%,a$,6
  REPEAT
    UNTIL MOUSEX<>x% OR MOUSEY<>y%
  PUT x%,y%,a$,6
UNTIL MOUSEK=2
```

Notice in the above listing that the block is Put twice in the Repeat...Until loop? To Put a block in XOR

stf: The Elonex mouse does not work with the ST because they have different pin connections. Atari have no plans to introduce a 16MHz upgrade for the STE.



STE PROBLEMS

Mr J Guest of Sheffield says that he has just upgraded to an STE and many of his old games do not work on this machine. He wants to know if there is any way that he can get them to run on the STE – perhaps by running an old version of TOS from a PD disk and then loading the game. **Mark Mitchell** of

Whitley Bay has a similar problem with older games.

stf: Unless the software houses which originally produced the old games have released updated versions, you are out of luck. All games released in the last three years are STE compatible – any that were released before that may not be.

Using a disk-based version of TOS only works for games which can be run directly from the Desktop by clicking on the program icon, but even this is not guaranteed to solve your difficulties.

CALAMUS PROBS



Whenever I try to use Calamus using a 1MByte STFM and a mono emulator, it fails to run. The message says it will not run with this version of TOS (1.02), so I tried TOS 1.4 from a PD library but now I have run out of memory. What's wrong?

Richard Green, Sheffield

stf: Calamus is a very large program, so there is not enough room for it to run if you are using a disk-based version of TOS. The mono emulator may be clashing with the program, but there are no known problems with Calamus using TOS

mode a second time restores the screen back to its original condition.

As you can see, the advantage of XOR mode is that you don't get the "black box" effect, though your sprites become transparent and the background can be seen through them when they move.

How can you cure this? Well, analysing the results from the above program, we can say that XOR mode doesn't produce a border when placed over coloured areas of the screen, but it doesn't work properly either since sprites become transparent. We can also say that it works fine on a blank screen.

So, the ideal situation is to create a hole in the background, exactly the same shape as the sprite (the Pacman shape, that is – not the rectangular area around it), on which you can put your sprite in XOR mode. What's needed is a way of producing the hole, and this is done by using a logical operator which compares the source and destination but always comes up with 0 or false (the background), which is exactly what Put mode 4, (NOT S) AND D, does!

But mode 4 does not work with the sprite itself – you need to create what is known as a "mask," which is an identical copy of your sprite shape, only with all the colours (apart from the background), set to colour 1. If you have an animation made up from a series of frames, then a separate mask must be created for all of them.

Note: You could have produced a colour 0 mask with a colour 1 background and used mode 1 to just AND it with the screen and still had the same result, but it's easier to create the mask in a paint program by re-colouring a copy of the sprite with colour 1.

You are then able to place the real sprite into the "hole" on the screen at the same position in XOR mode 6 to produce the finished result. The background is replaced before the whole thing is repeated again for the sprite in its new position. The following listing shows the technique in action, with the Pacman type shape. Note that you can see through any part of the sprite that was left the same colour as the background, so use a different colour for things like eyes or they end up transparent!

Note: You notice flickering as the sprite is placed on the screen. This is normal, but can be cured with a nifty little process called page-flipping which you can read about in a future ST Answers. The symbol ↵ means do not hit <Return> yet – the line of listing just wouldn't fit in our narrow columns!

Listing 2 – Pacman sprite

```
Setcolor 0,0,0,0! Set background.↵
to black
Setcolor 15,7,7,7      ! Set ↵
foreground to white
'
Deffill 1              ! Set colour to 1
Pcircle 20,20,20,300,0 ! draw pacman.↵
mask
Get 0,0,40,40,Mask$    ! Grab it
'
Deffill 15             ! Set fill colour to 15
Pcircle 20,20,20,300,0 ! draw pacman
Deffill 2              ! color red
Pcircle 25,11,3 ! draw eye
Get 0,0,40,40,A$! Grab it
'
Cls
For A%=0 To 150 ! 150 random boxes...
  C%=Int(Rnd(0)*16) ! just for.↵
  a background
  Deffill C%
  X%=Int(Rnd(0)*319)
  Y%=Int(Rnd(0)*199)
  Pbox X%,Y%,X%+30,Y%+30
Next A%
Print At(7,2);"PUT MODE 4 AND 6.↵
SPRITE DEMO"
Print At(8,24);"Right Mouse Button.↵
To Exit"
'
Hidem
Repeat
  Mouse X%,Y%,Z%      ! read mouse
  X%=Min(X%,279)      ! limit x%.↵
  to inside screen
  Y%=Min(Y%,162)      ! limit y%.↵
  to inside screen
  Get X%,Y%,X%+40,Y%+37,Bkg$ ! ↵
GET background
Put X%,Y%,Mask$,4      ! PUT mask.↵
(NOT s) AND d mode
Put X%,Y%,A$,6         ! PUT sprite.↵
XOR mode
Repeat
  Until Mousex<>X% Or Mousey<>Y%
  Put X%,Y%,Bkg$       ! PUT background
Until Mousek=2
'
Setcolor 0,7,7,7! Reset palette on exit
Setcolor 15,0,0,0
Edit
```

That's just about it for sprites. All you need now is imagination – and for all but very short animated sprite sequences, a lot of patience. For lengthy sprite sequences, consider a dedicated sprite creation package, especially for the automatic creation of masks, and the ability to test animations.

COLOUR COMMANDS

A few readers have pointed out recently that the logical way for GFA Basic to have worked as far as colours are concerned is for the Color and Deffill commands to tie up with Setcolor. As it is at the moment, if you use Color 6 to draw a line and you want to change the color it uses, you don't use Setcolor 6, you have to use Setcolor 3!

Actually, the fault is with the programmers at Atari, not at GFA, because the bug is part of the ST operating system, not within GFA Basic. Version 3 users have the command Vsetcolor, which alleviates the problem by doing a conversion for you with Color 6 and Deffill 6 both being changed by Vsetcolor 6. Even so, system calls to the operating system still return values using the jumbled-up system, so there might still be a bit of juggling about to do.

For v2 users, the following conversion table may be of use. It lists all the Color and Deffill command values, and their respective Setcolor values. For example, if you want to alter the colour in the register used by Color 8, just look down the table and you can see that the Setcolor value to use is 7.

WHICH COLOUR?

| COLOR Value | DEFFILL Value | SETCOLOR Value |
|-------------|---------------|----------------|
| 0 | 0 | 0 |
| 1 | 1 | 15 |
| 2 | 2 | 1 |
| 3 | 3 | 2 |
| 4 | 4 | 4 |
| 5 | 5 | 6 |
| 6 | 6 | 3 |
| 7 | 7 | 5 |
| 8 | 8 | 7 |
| 9 | 9 | 8 |
| 10 | 10 | 9 |
| 11 | 11 | 10 |
| 12 | 12 | 12 |
| 13 | 13 | 14 |
| 14 | 14 | 11 |
| 15 | 15 | 13 |

1.02. Consider getting a mono monitor if you want to use Calamus seriously – a mono emulator is just not good enough for serious high resolution work. Evesham Micros (☎ 0386 765500) supply the Atari SM144 mono monitor for £129.95.

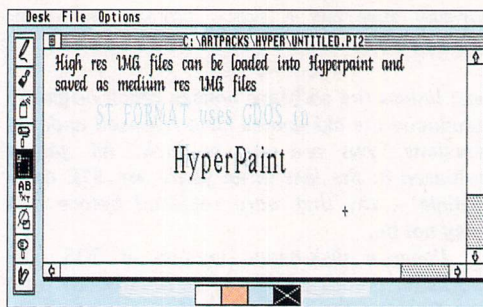
IMAGE CONVERSION



Is there a program that converts high resolution .IMG files to medium resolution .IMG files? If so, where can I get it from?

Steven McIntosh, Dundee

stf: Hyperpaint (£21.99 Silica ☎ 081 809 1111) loads high resolution .IMG pictures while running in medium resolution. If the file is then saved, it is then a medium resolution .IMG file, suitable for use with 1st Word Plus and other programs which run in medium res.



● If you want to convert high resolution .IMG clip art to medium resolution, then all you have to do is fire up Atari's very own Hyperpaint program.



HOT STUFF

After I have been using my STFM for about an hour, the disk drive starts to make funny noises when I try and access a disk. If I cool the power sup-

ply with a fan, it starts working again. What do you think the problem is?

Tahmur Huq, London

stf: Your power supply sounds as if it must be getting far too hot if cooling it solves the problem. The components in your machine work perfectly well within a certain temperature range, but if they get too hot, they fail. Take your machine to a local computer repair centre or contact WTS Electronics (☎ 0582 941949), who can do a diagnostic check on your machine for £15.00.

MIDI CONNECTOR WANTED



I am looking for a brain to MIDI converter to speed up the input to my Mega ST. Any suggestions that do not include a lobotomy?

Big George Webley, Bucks



Assembly Pointers

More assembly language programming with Roger Pearson

HOW TO SAVE A DEGAS COMPATIBLE FILE TO DISK.

You can recognise a Degas file's resolution by its file extension: P11 = low res, P12 = medium res, and P13 = high res. A typical high res Degas file could have a name like PICTURE.P13. A compressed Degas file has a similar file extension, but the I is replaced by a C, so that a high res compressed Degas file might have the name PICTURE.PC3. Note that a file name can only have a maximum length of eight characters, not including the extension and period.

When a Degas file is saved, other information – the current screen resolution, the current palette and whether it is compressed or not – is saved along with the actual bitmapped data.

The Degas header format is as follows:

Normal Degas file

| FLAG NAME | SIZE | DATA |
|-------------------|--------------|--------------------------------|
| resolution | 1 word | 0 (low), 1, (medium), 2 (high) |
| colour palette | 16 words | get from setcolor() XBIOS call |
| Followed by: | | |
| picture bit image | 32,000 bytes | usually the screen |

There is also an optional additional part of a Degas file that stores animation details which is not used here. See page 73 of the Degas Elite User Guide.

Compressed Degas file

To indicate a compressed file, the high order bit of the two byte resolution flag is set. So a high resolution compressed file would be saved as \$8002, where the 8 indicates the compressed format and \$02 the high resolution. The "\$" means hexadecimal.

Fortunately XBIOS call #4 returns the current screen resolution in register d0. The values returned here are the same as required by the Degas header.

Usually you want to save a screen in Degas format so that you can either print it out later, load it into a DTP package or load it into a program that you could be working on. There's a handy bit of source

code on the Cover Disk to show you how to save a Degas file – see page 14 for further details. Open up the file and carry on reading!

If you examine the source code, you can see that the first line of code sets up address register a3 to contain the address of `pic_head+2`, which you need so the palette can be placed there for later use. Use `pic_head PLUS 2` since the first two bytes are used to store the current resolution and whether the file is compressed. In this case it isn't.

Next, register d0 is cleared. `CLR.L d0` could have been used here instead. This is done so that you can use d3 as a counter in the next few lines of code. These lines use the XBIOS call `setcolor()` in a loop to retrieve the current palette one word at a time from the hardware colour register. Passing a negative value to `setcolor()` means it returns in register d0 one colour setting of the palette specified by the value in register d3.

Next the address of the screen is stored in "screen_address" for use later on.

Now you can actually begin to save the screen to disk. To do this, you have to go through a three part process:

1. Create a file, which gives you the file's "handle."
2. Save the data to disk using the handle as an identifier.
3. Close the file.

In this case, create a file using the GEMDOS call function `fcreate()` to which you have to pass the address of the name and path of a null terminated string – the file name you want to create. You should type your own file name if you want to instead of "A:\PIC.PI3", 0.

Once you have created a file and received the handle number from register d0 (if you're successful – if you're not, a negative number is returned) then you can start to write (save) to disk. First, though, you need to place the value of the current resolution into the "pic_head" buffer, which also contains the palette information. Once you've done this, you can then write the Degas header information to disk using the `fwrite()` call. Then you can write the whole of screen RAM (that is, what appears on-screen) to disk,

appending it to the file you have already written by the same `fwrite()` process. Since any screen – whether high, medium, or low res – is 32,000 bytes (32K) in size and is situated at the address you have already preserved in `screen_address`, you can do this quite easily.

Once the file has been saved to disk, you can close the file and exit properly back to the Desktop using `pterm()`

SINE OF THE TIMES

How do you work out Sin, Cos and Tan values in assembly language?

Andrew Markham, Chelmsford

stf: You can find some information on this which should help in the GFA Basic and Assembler User Book from GFA Data Media (☎ 0734 794941), ISBN 1-85552 003-5. See page 11 for our discount offers.

68000 REFERENCES

Matthew Gates of Derby would like a list of 68000 assembler books. Unfortunately, many are no longer available but STE information can be found from PD libraries – try MT Software ☎ 0983 756056, or the ST Club ☎ 0602 410241.

Introducing Atari ST Machine Code is available, however, by R Pearson and S Hodgson. It comes with disk containing text editor, assembler, linker, resource construction kit, AES, VDI BIOS, GEMDOS, libraries, and all source code. It's published by zzSoft ☎ 0254 762965 and costs £20.00. ISBN: 1-873423-01-2.

YOU MAY PASS

Thanks to J Horton for his PASSWORD.S source code, which can be found on the Cover Disk.

This file can be placed in an AUTO folder and prevents unauthorised access to your ST. There are full details of how to work this program on page 14.

stf: It depends entirely on your brain capacity – if you are running on less than 1MByte, then it is impossible to link your brain to your ST via a MIDI cable.

MACINTOSH DISK



Is there a Public Domain utility that enables my ST to read Mac format disks?

Anthony Nutley, West Lothian

stf: No, the only way to read Mac disks on an ST is to use Spectre GCR, the Mac emulator from Gadgets by Small. Spectre is available from Ladbroke Computing (☎ 0772 203166) for £409.99. But the easier way to transfer data between your ST and a Mac is to use a PC-formatted disk – any ST can write to one and read data from it, and the Mac can do the same using its built-in Apple File Exchange utility. Both a Mac and an STE can format PC disks.

CRASH BANG WALLOP



Every time I load a game, it crashes with a load of bombs – what's wrong?

James Williams, Walthamstow

stf: We cannot tell what is wrong with a machine with brief queries like this. We need to know how many bombs are displayed and at what stage of the loading process, what add-ons you have plugged in, and much more. Take or send your machine to a repair shop or try WTS Electronics on ☎ 0582 941949.

PC EMULATION (AGAIN)



Several people have asked about colour VGA PC emulation on the ST, including Nathan Plackett of Milton Keynes and M MacLeod of Ross-shire, Scotland.

Generally, they ask if you can play colour PC games on an ST with the AT Speed C16 emulator, with a Philips monitor and a Mega 2 ST and if there's an emulator on the market you can play games with.

stf: With the setup described, you can play CGA

games on the AT Speed emulator from Compo (☎ 0480 891819), although the sound gets reduced to the PC's bog-standard beeping and burbling.

LARGE SCREEN



Is there a program that fills the complete screen with a Degas or Neochrome picture, leaving no border?

Mike Sharman, Kings Lynn

stf: The screen size can only be increased by by a hardware upgrade like AutoSwitch Over-scan which replaces or modifies the ST's video circuitry, so a higher resolution picture can be generated. Note that Overscan (£49.95 System Solutions ☎ 0753 832212) only works with the older ST machines and it does not work with STEs.

READERS' TIPS

A STAR IS BLOWN

Claire Deville of Maidstone has noticed that if a Star LC-10 prints out a straight ASCII file, any character following a pound symbol (£) is not printed. Therefore, if you write a Readme file with a line in it such as "send £15.00 to register" the LC-10 actually prints "send £ 5.00 to register".

APPLES AND PAIRS



How am I supposed to connect my Apple Personal Laserwriter NT printer to my 520 STFM?

Andrew Castles, Belfast

stf: You don't – Apple Laserprinters are actually designed specifically for use with the Apple Macintosh range of machines. The Mac has got its own type of printer output port which is not supported on other machines.

WHAT A TURN OFF!



Occasionally my machine turns itself off for no apparent reason. It is in its own power socket with nothing else connected – what could be the problem?

Don Markwick, Eastbourne

stf: It sounds unlikely that it's the mains supply. It could be a fault with your machine's power supply unit, a problem with your machine which causes warm resets, or maybe just a loose connection. If your machine is still under guarantee, return it. If not, then either try your local computer shop or contact Silica on ☎ 081 309 1111 – they provide an excellent repair service.

SECOND DRIVE WORRIES



How do you install a second drive on the Desktop. Will I still get the message "Insert Disk B into Drive A" or is it all taken care of automatically?

Jefferson Humber, Isle of Wight

stf: GEM always shows two disk drive icons on the Desktop even if there is only one drive connected. Once the external drive is connected, access it by clicking on the Drive B icon on the Desktop – there is no need to install the drive. Your machine detects when a second drive is connected and directs all disk accesses to it.

DRAFT QUALITY ONLY



How do I make my Amstrad LQ3500di 24-pin printer run from my STFM? It only prints in draft quality and I don't know how to change to LQ output.

David Holmes, West Sussex

stf: You do not say what software you want to use the printer with. A general rule is to select Epson 24-pin printer drivers from the program you are using.

Alternatively, you could use the Twin Peaks printer Accessory from the ST Club (☎ 0602 410241) on disk DMG.23 (£1.45). This enables you to send codes to your printer to turn on and off the functions you require.

SWAP PROBLEMS FOR SOLUTIONS OR SWAP SOLUTIONS FOR CASH!

We want your problems. What's making your ST life a misery? Let us know and we'll pass it on to our panel of experts, who'll do their level best to solve it. Or perhaps you've found the solution to a problem yourself. Send it in and you could win yourself up to £50, simply for sharing it! Oh, and do check this issue's answers before you write in – the solution you need could be waiting there for you now! We guarantee to answer queries written on this coupon and addressed directly to ST Answers. Although we make every effort to answer all problems we receive, we obviously can't guarantee to answer queries which span several pages. Games tips should be addressed to Gamebusters. Queries about games are answered in Gamebusters as soon as we receive the relevant solution.



We want to hear your problems. If you're having any trouble using your ST, let us know and we'll try and help. We guarantee to answer every ST query we

receive (once, anyway). Just write your problem on this form and mail it to us at the address below – free!

Name _____

Address _____

My query/tip has to do with: (Please tick the box that applies)

Beginners ☐ Comms ☐ Disks ☐ Graphics ☐
 Hard drives ☐ Printers ☐ Sound/MIDI ☐ ST problems ☐
 Programming (assembly language) ☐ (GFA) ☐ (STOS) ☐

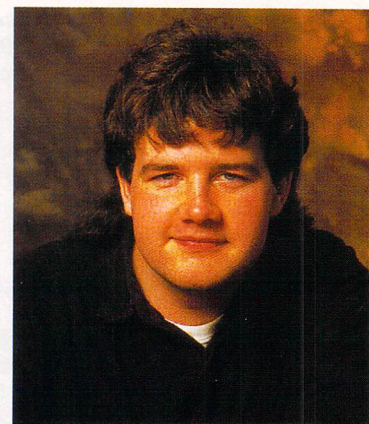
My query/tip is: _____

Write your tip or query here then mail this to ST Answers, ST FORMAT, FREEPOST, Future Publishing, Bath, Avon BA1 2XF. No stamp needed if posted in the UK!

GAMEBUSTERS



Tips. Spit. Same word, different order. Do you see what we're getting at? It's not the collective consciousness which provides the aura of uncertainty; rather, the entire subculture of the individual desire en masse to cheat. Hmm? Yeah? With us? Meanwhile, here's something much simpler – Ed Ricketts and Gamebusters



● Ed Ricketts – a masterpiece of modern sprite programming, except for the pixellated left eye. What a giveaway.

POPULOUS 2 ELECTRONIC ARTS



● Part 4: The Clouds Gather. The story so far: the storm, having made its way through plagues, earthquakes and little people with fiery hands, decides to have a quick breather in a nice quiet tourist spot. Now play on...

It had to happen – the inevitable list of level codes for *Populous 2*. Chris Brookes of Cheshire was the first dude to send them in, in the form of a program which generates all 1,000 Conquest World codes on-screen. He nets £50 for being smart.

So, through the magic of television (or something like that) we now bring you every single one of the level codes. But not here. You'll find a neat little program on the Cover Disk called POP2CODE.PRG which displays all 1,000 codes on-screen. Just double-click on it and follow the instructions.

Which, of course, means you don't need to send in any more. Please. Sorry to keep harping on about this sort of



thing but it's very annoying to get hundreds of solutions to *Another World* or hundreds of *Lemmings* codes when they've already been done. Anything else, of course, is most welcome. Thank you. I'll go away now.

And then when you've played all that lot, try this cheat from Neill and James Cameron from Oxford. Apparently, just holding down F9 tops up your manna level.

Activate the lightning, hold down the left mouse button, press 1 on the main keyboard then let the mouse button go. The lightning remains but your manna doesn't go down. Ta to Richard Desmond of Sheffield.



● You're probably expecting some tasteless caption here about helpless villages being devastated by lava. Ho bleedin' ho. Not us, mate. We're above that sort of thing. But would you build a village on a volcano? I ask you...

FANTASY WORLD DIZZY CODEMASTERS

On the high score table enter IMMORTAL to gain infinite lives. Nice and easy from Carl Dunne of Parbold.



● (A-one, a-two, a-one two three four) Heeeeeeeeeee's... an egg with legs! He's an egg with legs! He's got yolk in aaaaall the right places! (Duh duh dee duh dee duh) He's a star! He's so cool! He is noboody's fool! He's – well, a collection of pixels, actually. Sorry to shatter the illusion, but there you are.

FLIGHT OF THE INTRUDER MIRRORSOFT

Mike Eustace of Leeds has some illumination on a small problem with this *FORMAT* Gold winning flight sim type game. Anyone flying Phantoms on CAP will have noticed the crucial "Catch 22" bug regarding the use of AIM 7 radar-guided Sparrows on realistic weapon loads, viz: to get a kill with a Sparrow, you have to track your target with the radar, but when you fire your last Spar-

row, the radar automatically switches off – meaning you can't track your target any more, and your missile goes ballistic.

The way round this is to always save a spare AIM 9 Sidewinder on the rack, and immediately you've fired your last Sparrow use the Air-Weapon key to call it up. This puts the Sidewinder radar on line, and enables you to guide the Sparrow to the target by using the Sidewinder aiming circle. Since your Sidewinder is heat-seeking, it actually doesn't need radar to guide, so when you fire your last Sidewinder, it still homes into the target even after the radar has automatically switched off. Make sense? Good.

If you're using a Gravis Mousestick with the game (after all, it's the only way to fly), you've probably noticed the annoying little bug that causes you to roll left and pitch down into a crash immediately after launch. The game's supposedly conformed to Gravis but, for some reason, has a strange idea of where the centre position of the stick is supposed to be.

The solution is to re-centralise your stick on the Corridor screen. Do this by moving the mouse pointer from its top left position onto the centre of the L in the words INTRUDER FLIGHT BRIEFING, holding the Stay button down and allowing your stick to centralise before releasing it. You make all your subsequent mission choices by keyboard input, and when you arrive on the Cat and launch, you find your stick is exactly centred – enabling you to perform a neat, snappy take-off, just as you should.



● The Intruder not flying very much. Sorry about that, but it was its day off.

KULT EXXOS

From Nicholas Bromley of Leeds comes this solution to the venerable graphic adventure.

The objects needed for each puzzle are as follows:

De Profundis rope
The Wall dagger

The Twins In the Scorpion's Presence

goblet
stone fly
lantern

The Noose

If you start off with the lantern, you're okay, but don't waste another object at the trader if you don't have it – use your solar eyes instead.

The Noose

Use the lantern or your solar eyes, whichever is more appropriate.

Use sticky fingers to get to the platform, then push the lever. This hangs the poormouth. Remove the rope if you want and the poormouth drops into the pit. Neatness counts, after all.

Search near the platform and you should find a hollow containing a skull.

If you press the eye, a trapdoor opens and you can explore the tunnels. You can use the left hand rope for De Profundis.

De Profundis

When the granite monster has disappeared, wait, and a hook should slide out from the ceiling. Lasso this with the rope. Wait twice and the granite monster emerges. Drop down on it and take the rope. Wait twice again and the monster carries you off to the other side. You collect a skull on your way out.

In the Scorpion's Presence

Pray to the statue, then go through to the web. Crawl (don't walk) to the mistress and give her the stone fly. You are asked to kiss her and make love – what you do is (ahem) up to you. Give the fly to the blue scorpion, take the red one and then go through the door.

Put the red scorpion into the hole in the statue and a trapdoor opens. Go inside and you gain another skull.

The Wall

You should see three arrows on the floor. The first one is lit. Click on the third, then the second and go through the right hand door.

Stand on the step and insert the dagger through the slot. You are scooped up and thrown by the wall (ow). Collect the dagger – you can trade items with it, and any other object for that matter – and go through the right passage.

Insert your hand into the hole and collect the skull. Go back and through the left hand passage.

The Twins

The trickiest one, this. Go through to The Source and inspect the statue. Press the eye. Fill the goblet and go to the room with the bronze snakes. Open both of the mouths and empty the goblet into the left hand mouth. Collect the die and put it down the right mouth. Now go through to "Who will be saved?"

Press the face and then do a PSI Shift on it. Go through to The Source,

open cube six and there is the fifth and final skull.

General Tips

① Attack any aspirants you see – they contain useful objects.

② Don't kill guards – or they kill you! Although you could try using a PSI Shift on one to get his zapstick.

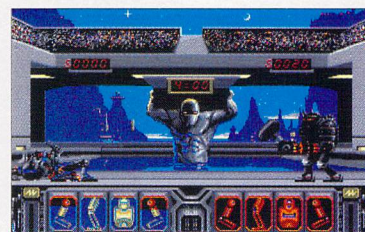
③ When you get to Saura – beware, because she is really your girlfriend Sci-Fi. Kill her and the turkeys kill you!

④ Use sticky fingers to gain access to trapdoors. Zone-scan detects hidden traps. Tune in to the fetus and he sometimes gives you advice, although it's not very understandable to begin with.

METAL MASTERS

INFOGRADES

Press F4 while playing to freeze the computer baddie. By **Jonathan Slater** of **Cheshire**.

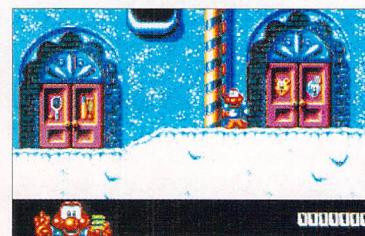


● The Masked Pile of Nuts and Bolts demonstrates what he's learned from watching WWF™ – er, that's him on the left. The one with nothing left working except two shoulder joints. Handy, eh?

ROBOCOD

MILLENNIUM

Quite a bit of stuff coming in for this weak-fish-related-joke style game. First, from **Luke Moss** of **Lincoln**: press



● Robocod poses outside his magnificent 18th Century mansion, built with the profits from his internationally-acclaimed novel *The Chinese Lily* (not to mention the set he did for *Playcod* magazine).

<Control> until the border flashes. Now press <Return> and you have a force field.

Or try this from **James Lake** of **Cumbria**: type in THE LITTLE MERMAID and then press C for the car, B for the bath, F for the flying contraption, X to exit, P for the plane and I for infinite lives. <Return> gives you invincibility. ➔

THE BABY CAR SNOOKER CHASING DANCER'S BOX

These from **Ian Richardson** of – er, no fixed abode, apparently (sorry, lost the address!)

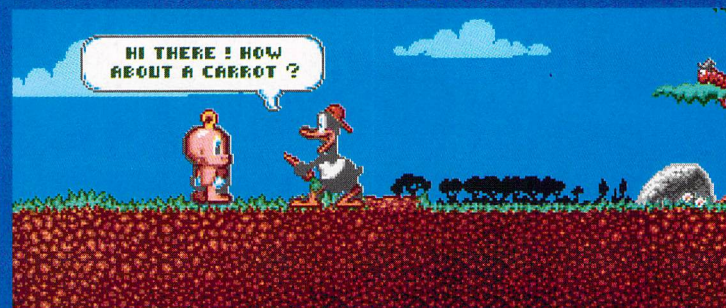
BABY JO

LORICIEL

Passwords:

Level Two
Level Three
Level Four

MUMMY
GLOUP
YOUPI



● "No, mummy said if any baseball-cap-wearing talking ducks were to offer me sweeties or carrots I should (a) run away and then (b) take another pill, thanks very much." (Note: *ST FORMAT* does not condone giving pills to babies obviously, unless they're those baby-type-safe pills, of course. Thank you.)

CAR-VUP

CORE

Enter the following codes on the high score table:

WHOOPIE

R. J. TOONE
PUSSYCAT
BUMPER

start on Level Five
infinite lives
nine lives
temporary invincibility

CHASE HQ 2

OCEAN

Type INAGARDENIN while playing, then T for more time and N to skip a level.

SHADOW DANCER

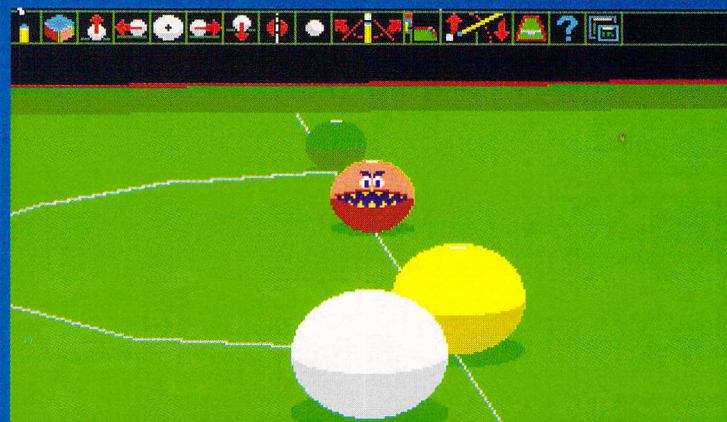
US GOLD

Pause game and type GIVE ME INFINITES for infinite lives. X or C skips a level.

JIMMY WHITE'S WHIRLWIND SNOOKER

VIRGIN

Go to the trick shot mode and press F7, F4, then F1, exit, then go to demo mode to find a 147 break option.



● See that tough-looking red ball over there? Go up to it, tap it on its, er, shoulder and ask it for a fight. Then tell it Big Marlon sent you and ask him about the citrus fruit. He'll know what you mean.

CAN'T CATCH THE LEMMING, EH?

And now some adventurey-type stuff, 'cos there isn't a lot of it around in Gamebusters these days. All this stuff is from Pat Winstanley of Wigan.

SCAPEGHOST RAINBIRD



● Freddie here is modelling the latest in afterlife apparel – a fashionable mac by Columbo of San Francisco. Note the transparent trousers and ethereal hat.

Your primary difficulty with this game is lack of strength, so an early objective must be to find someone or something else to give you a helping hand. Making friends with the dog is the first step – he then mimics your actions in certain situations. Thus, you might be unable to pick up the wreath yourself, but if you try in the presence of the dog he does it for you. But how do you make friends with the dog? Stroke him.

Another tricky problem is unlocking the shed door. Here you need the cooperation of four of the characters around you. Each of them needs to be instructed, then told to wait until all the others are ready. The water needs to be frozen before you can get the map, but don't worry about bad luck if you break the mirror. You need to cut the power before entering the house – try touching the connectors with something.

INGRID'S BACK RAINBIRD

To cross the broken bridge, drive from the top of the hill. The hermit won't sign in your presence. The short ladder helps you into Tack's farm. Can't get the plans? Ask Flopsy to do it for you. Think about Arthur Dent to stop the steamroller. Trap Amble in the lower warren to get rid of him. Sweet-talk Bane to remove him. Chugg can be dealt with by getting him drunker.

SORCEROR ORIGIN

The glass maze: sleep before entering, then memorise Fweep several times, casting at yourself and renewing as required. Then proceed as follows: e, n, e, s, w, d, e, e, n, n, u, u, s, e. You're now at the hollow, but don't get too confident because the maze now changes and the return journey is totally different...

TRINITY INFOCOM

Wind blowing the wrong way? Feed the birds.
Grass being unfriendly? Ride over it.
Can't open the doors? Transfer the moveable part of the sundial.

Dying in space? Climb into the bubble blower's dish for a while.
Can't cross the river? Search the corpse thoroughly.
Dropping sensation over Japan? Use a parachute and a bird.
Can't cross the chasm? Chop the tree down.
Can't catch the lizard? Trap it between two light places.
Can't catch the lemming? Use the cage.

DÉJÀ VU 2 MINDSCAPE

Take one of the cigar rings dropped by the thug. Show addresses to the cabbie because he can't hear you. To make time pass, double-click on objects.

SHADOWGATE MINDSCAPE

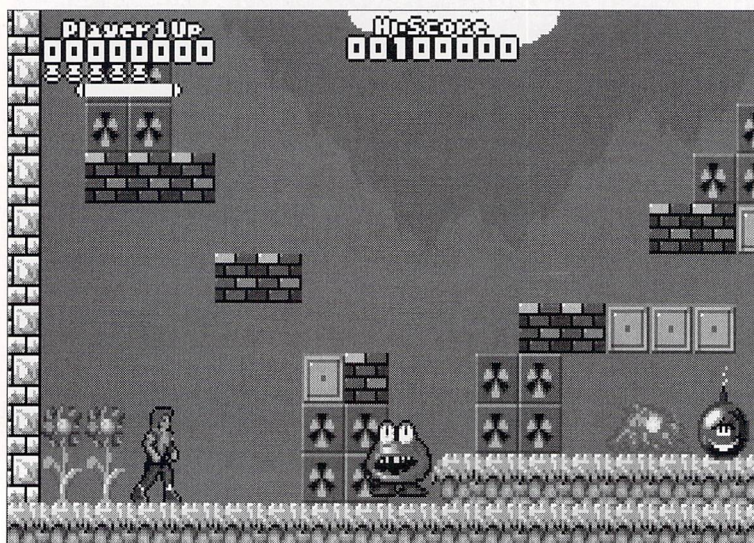
Can't deal with the wraith? Light the torch with two rings, then operate it on the wraith.
Can't use the rope? Say "EPOR."
Getting burnt at the bridge? Use the cold sphere on the fire.
Can't kill the girl? Use the silver arrow.
Can't find the wand? Put the pole in the balcony mount.
Stuck in the throne room? Operate the right panel, put the ring in the hole, then put the sceptre in the King's right hand.

THE FLYING CAPTAIN DRAGON'S BREEDING BOX

From Philip Huff in Cambridgeshire, the Komodo owner's guide to paragliding, or something.

CAPTAIN PLANET MINDSCAPE

To use this cheat, you also need Mindscape's *Captive*. On the level selection screen, put the *Captive* disk in the drive, press <Fire> and you see some stuff about the disk being broken. Put the *Captain Planet* disk back in and the cheat should kick in.



● Captain Planet? *Captain Planet?* CAPTAIN PLANET? Ooh, I hate Captain Planet with a vengeance. What a pathetic sort of superhero. Case in point: why does he need that horde of helpers to do his stuff for him if he's so wonderful?

DRAGON BREED ACTIVISION

Get to the end of Level One. As the end-of-level meanie is being loaded, hold down the left mouse button, <Delete> and <Help>. The screen flashes and you're able to skip levels – muck about with the keys. Also, try typing IREM for infinite lives.

F-15 STRIKE EAGLE 2 MICROPROSE

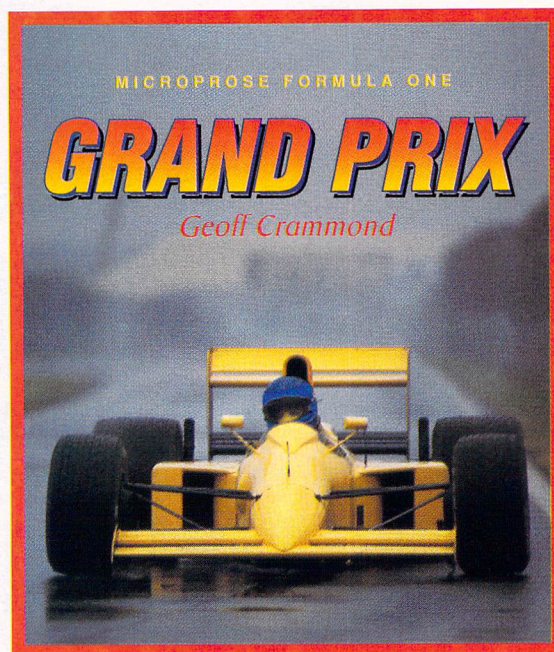
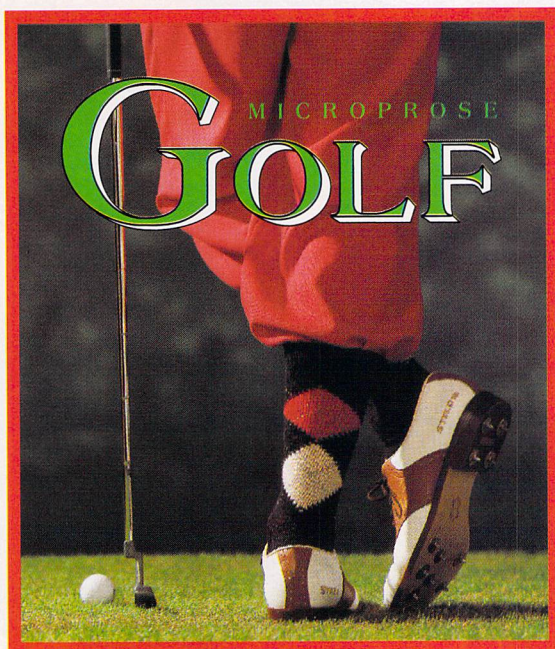
To be invulnerable, have infinite everything and still get medals: load and run as normal until you choose the skill level. Choose Demo, pick a location, then go on as normal. The plane is now flying along under the ST's control. To refill everything (ammunition, fuel, missiles and so on), hit R. Note you can still crash but enemy missiles don't hurt you. Complete the mission, land safely and you get loads of points and medals – unless you crash, of course.

FLIGHT SIMULATOR 2 SUB-LOGIC

Set the aircraft position to the following – this sets you up for take-off on the Golden Gate bridge: North 17430.159, East 5055.7683, Altitude 17.000000.



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Pukka!

SHADOWLANDS

DOMARK

Straight from the creators of the game themselves, Teque London, comes this solution to the first five levels. The rest to follow in due course. Meanwhile...

LEVEL ONE: THE WILDERNESS

To start with, collect all the apples, sticks and the bow (which can be found at the far right hand corner of the woods) for use later in the game. Follow the path, collect the two torches at the end of it and go down the steps into the next level.

LEVEL TWO: DUNGEON

Collect and extinguish all the torches you find – as a rule collect all torches and always extinguish them so you don't waste their light. Collect the three silver coins. Move over to the door and pull the switch. Proceed through the doors. Collect the stick, bread and full water flask. Drink from the fountain – this applies as a rule whenever you come across one – and fill the skeleton's flask. Collect an additional flask by the gap in the wall by using the coins. Pick up the apple – always collect food. Look for a secret switch on the wall and push it. Collect the strength potion. Now open the lock with the key, leave the torch by the gargoyle (light sensor) to open the double doors and proceed through them. Leave a weight on the floor switch ahead and enter the room.

Here you encounter a skeleton. Kill it, then collect the shield and chest. Exit from the room. Proceed around the corner, drink from the fountain, leave another weight on the floor switch and go through the double doors avoiding the skeleton. Once at the doors, pull both switches and proceed through them. Collect the apples which can be found in the corner of the corridor. Once you're at the next double doors, try to avoid the skeleton and place one character on each of the floor pads. It's also possible to place a dead body on a pad – it weighs the same as a living character. When doors open, move through. Pull the secret switch by the



● **Creative Caption Writing Volume One** states: "Captions should be short, sharp and to the point, explaining in an entertaining – and possibly amusing – way the content of the picture to which they pertain." But, hey! Rules are made to be broken, right?

side of the small door, collect the scroll (light spell) and exit from the room.

Collect the key by the fountain and open the double doors with them. Kill the skeleton encountered. Collect the chest and descend the steps into Level Three.

LEVEL THREE: DUNGEON

Collect the key. Buy the light spell, pull switch and proceed through the double doors. Pull the "Pull" switch (surprise surprise) and send only one character through the teleporter. Collect the key lying in the corner. Have a drink. Pull the switch in the far corner and exit the room through the teleporter.

Open the portcullis with the new key. Do not pull the "Do not pull" switch (again, surprise). Have a drink and collect food. Throw

anything over the middle pit onto the weight switch. This causes the middle pit to disappear. Extinguish all light (because of the light trap) and collect the chest from the alcove using spellbook and key. Exit from the room in the following way: use the key in the portcullis, stand one pair of characters on the front switch and one pair on the back switch. The two characters at the back are now teleported into the adjacent room – leave them there.

Go through the now open door with the first pair of characters. Collect the chest and then stand on the weight switch. Now go back and free the other pair. Kill the skeleton, who has the exit key, and leave the room to rejoin the team.

Kill both the skeletons and pull the secret switch which opens the next door. Collect the



● **This Space To Let:** one previous owner caption, evicted for being too tacky. We apologise for the following *Dangerous Brothers*-esque joke: "Wow, look at all those big stiffies." It's just not the sort of thing you find in this magazine, so no double-entendres, risqué puns or euphemisms need apply.

shield and go past the gargoyle in the dark. You find two pits – throw a fireball over them. This activates a light teleporter at the end of the corridor. The pits then disappear and you can proceed to open the lock and portcullis. Kill the Valkyrie with fireballs. Buy any item – we recommend the third chest. Go through the door by placing something on the weight switch. Recharge any depleted item on the altar – this procedure can also be used to resurrect a character. Have a drink, pull the switch and exit the room by pulling both switches on the outside of the door.

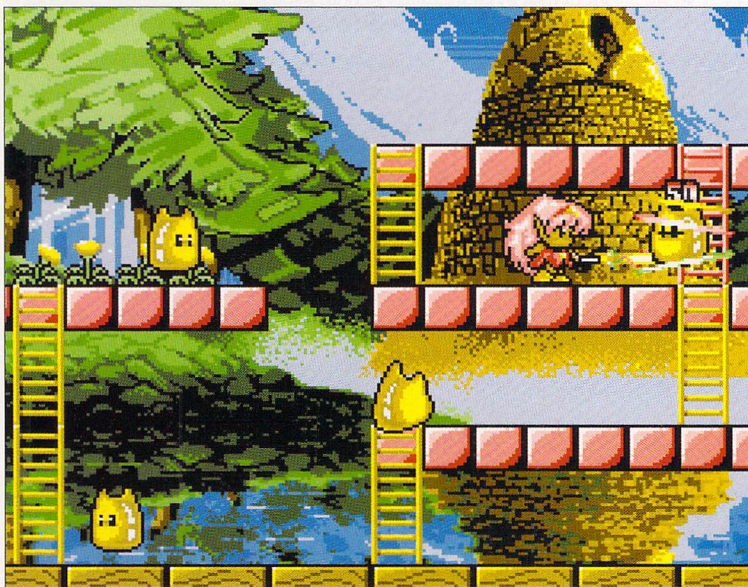
Now, either proceed past the Valkyries, kill them, collect the gold coin and open the next door to it – or go right round and stand the characters by the sign "Says nothing, reveals much." A secret wall now opens and you must



RODLAND

STORM

At the beginning of the level you're playing, press the Spacebar and everything on the screen dies. So says **Dean Cresswell** of **Watford**.



● In a land far away lived the living flour sacks. Happy they were, poncing around their cutesy platforms, growing their flowers and being bashed over the head with magic rods. Idyllic? Not half. If you're a flour sack, that is.

KNIGHTS OF THE SKY

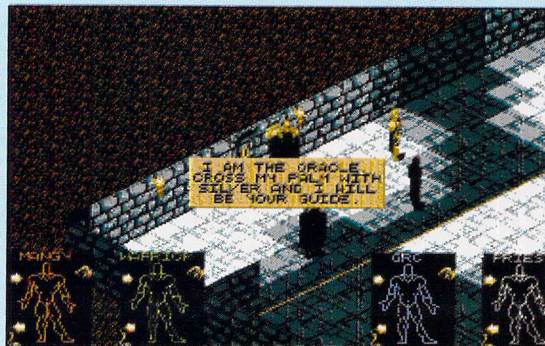
MICROPROSE

Although it's not mentioned in the documentation for this game, pressing <Alternate>G enables you to use the Gravis Mousestick for flight control. If you've also got a joystick connected, left and right on this gives you rudder control, and the Fire button drops bombs. *Knights of the Sky* is impossible to fly on either the weird, self-centring mouse, joystick or keyboard, so a tip to those who haven't got a Gravis Mousestick is: get one!

So says **Mike Eustace** of **Leeds**. Not sure about this, Mike. Our Cover Disk man Chris got on well enough with *Knights* using a bog-standard joystick, so yah boo and, indeed, sucks.



● "Dear Mum, Thanks for the sweater and fruitcake. Things a bit hairy at the front – I think it's my age." (This joke inadvertently left out of Chris's review last issue. Just cut it out and glue it on page 111, would you mind? Chris'd be so grateful.)



● Captions can be deadly weapons in the right hands. Next time you're hassled on the train by a crowd of drunken Scottish football supporters, whip out an appropriate caption and wave it in their face. It worked for me, writes our hospital bed correspondent.

SHADOWLANDS – continued from page 79
enter. Collect the chest standing at the end. Pull the switch to open double doors. Send one character down the right steps and the others down the left steps into Level Four.

LEVEL FOUR: THE PRISON

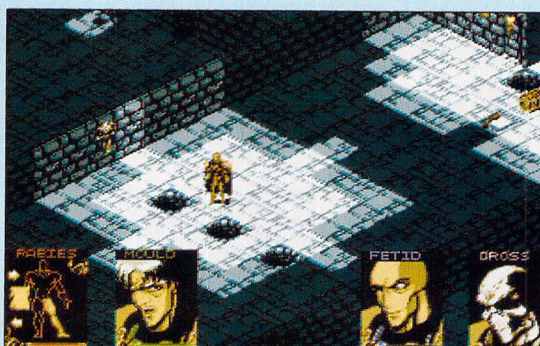
Walk the single character all the way to the fountain – it's also a dead end. Now walk the other three over to a secret switch between the second and third wall torch. Do not bother with the floor switches. Push the secret switch and rejoin the first member of your party after the secret wall has opened and you've collected all the items. Carry on down the corridor. Avoid the last floor switch because this warps you back. Make everyone read "This message is for everyone." Spend your coins and collect the chest (it takes a little time to appear). Stand three of your party on the three floor switches. This leads them to be kidnapped, but don't worry, you can rejoin them later. (Honest.) Check each of the three – one of them has to kill his cell mate. Once in the cells, look out for rats. Food and water are available and can be

obtained by collecting the key by the doorway to the "Bread and Water" cell.

Take the free character, collect the key that's appeared, open the leftmost door and collect the Waterball spell. Have a drink and continue down the corridor. Go through the small gap in the wall, which is the first gap to the characters' left, and kill the fire demon with the Waterball spell. When he dies, one cell opens and one of the previously imprisoned characters joins you. Leave the room the same way you entered it, but turn left and go right around to the portcullis and switch. Pull the switch and enter the room.

The switch also turns on the teleporter for a short period of time. Throw items into the teleporter. These warp to the floor switch which closes the pits. Collect your items and pull the switch to open the cell. Now exit from the room with three characters.

Turn left out of the room (the characters' left) and continue down the new corridor until you reach the T-junction, where you should also turn left. Pull the switch. Kill the minotaur and collect the chest, which contains a key and



● Hey! "Pits" is another anagram of "tips"! This is almost uncanny! Someone inform Arthur C Clarke immediately. (He's probably going to write a book about it – something involving babies, ships and whales, no doubt. Author? Hah.)

coins. The key opens the last cell. Don't forget the key in this cell (by the door). Exit from the room and turn right. Put the cell key in the lock and enter the dining room. Pull the switch in the corner to open the door. Buy some food and collect the chest. Have a drink. Now proceed into the Master Switch room. Don't pull switch 4! It lets the monsters in. Kill the minotaur in the room. Use switches 1, 2 and 3 to open rooms and collect the key (send someone in and wait for the key to appear – do not "choose" key). Use the key on the last room and descend the steps to Level Five.

LEVEL FIVE

Open the door by using the switch. Send one fighter into the room. The photoreceptor picks him up and opens the monsters' doors. Try and let the monsters out one at a time. Kill them and keep an eye open for any fire demons because they light the photoreceptor themselves and let all the monsters out at once!

One of the fire demons carries the exit key. Kill him and get all of the group through. Spend a coin and use the altars. Buy refreshments,

then send men into teleporter, leaving an item on the floor switch. Extinguish all light and exit through the new teleporter. Now enter the "One each" room. Send your men into the corridors one at a time. Kill the skeleton; collect the key.

Use the following key combination in the four locks to solve this corridor:

Key 1 = Lock 4
Key 2 = Lock 3
Key 3 = Lock 2
Key 4 = Lock 1

You can use the switches on the outside to free adjacent characters. You do not need all four keys to solve this.

To solve the next corridors, two teams of two men are needed, since each team helps the other to progress further. Use the following combination:

Switch 1 closes Pit A
Switch 2 closes Pit B

Get everyone through, stand together on the floor switch and enter the portcullis. Go to the "Mystery Tour" switches and take one switch (A, B, C or D) each:

A – light both photoreceptors. Keep light away from the doorway because invisible receptors create a skeleton. Collect the key.

B – Collect key, extinguish all torches and exit.

C – Collect the chest, kill the skeleton and leave all the items on "Please give generously." Go through the door and proceed through the second door (NB: No items can be carried, but don't worry – you can find them all back outside.)

D – Collect the chest. Throw the fireball in the direction of arrow. It warps X-Y-Z and the door opens.

Use the collected keys on three locks, wait for the doors to open, then proceed down the steps into Level Six.

And stay there until next month.

FORMAT NEEDS YOUR TINTS AND HIPS

Yep! Tints, hips, XFGR, GRIKBV – all those senseless level codes – we want them all! (Except *Populous 2*. Or *Lemmings*. Or anything else we've already printed.) If you've got a tip, a cheat, a short cut, a password, a map – anything at all you've found that helps you get more from your ST game-playing – we want to hear about it! That way you can share it with over 70,000 fellow ST enthusiasts, and possibly win *FORMAT's* monthly prize of £50. It doesn't have to be a complete solution or anything – whatever you've got could be the answer to a fellow ST game-player's prayers!



Name _____

Address _____

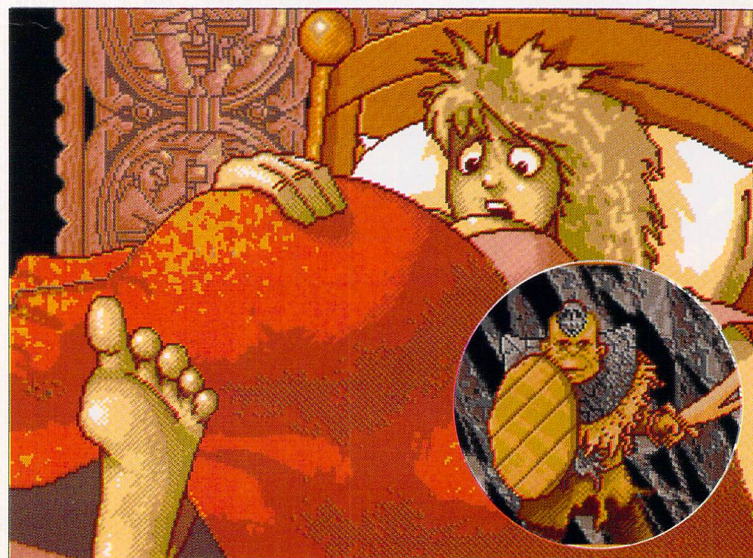
Daytime phone _____

Brief description of tip _____

Please complete this form and send it with your tip to: **Gamebusters, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW.**

HEIMDALL CORE DESIGN

Press K in combat to kill the enemy, keep it pressed down and then punch. Press K on the inventory screen to open the door without using the key. Apparently this only works on the 520STE, according to **Michael Mather of Tyne and Wear.**



● "Doctor, doctor, I think I've given birth to a foot! Can you get over here – and step on it?" "Oh, come on. That's a rather corny joke, isn't it?" (Er, sorry. And this caption looked so promising when it started, too...)

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U024 CHK 2.3, All you'd need to know about a disk. IBM MODIFIER, alter DS Atari disks for use on IBMs.
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U052 GEM PLUS, Neodesk variant.
U057 GEMDOS USER GUIDE, full of info about GEM-DOS
U058 ATARI TOS 1.4 bug fixes (STFMs with Rainbow TOS)
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U063 MEMFILE 2.0: Memory and disk editor with powerful features.
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U068 HITCHHIKERS PD shareware disk 2.0
U069 ST Zine shell, Disk mag development tool.
U070 SUPERB Intro creator, sprite, pics, text & music
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A009 COLUMBIA, Drawing prog, some 3D elements. Studio (*X*), Drawing package. Both German
A012 DOODLE, mono & colour versions. Also some Mandelzoom pics.
A013 ST GRAPH: Comprehensive graph prog, handles bar, horizontal/stacked bar, line & dot charts.
A015 FONTS2, 7 screen/desktop fonts. inc. Columbia, Devoll, Hudson
A018 CANVAS, great art package
A020 PALETTE MASTER, art package, up to 512 colours. *C*
A024 FRACKTAL drawing program from Germany. Mono/Col.
A025 FONTKIT 3.31 *D*
A027 ANI-ST, ex-commercial package, quality animation system
A029 MASTERPAINT drawing package, excellent. Mono & Col.
A030 PICWORKS, enlarge/reformat pics up to 3 times normal size. *M*
A034 PUBLIC PAINTER. *M*
A036 SNOOPY cartoon pics. *C*
A042 ST CAD v2.1, a med/high res CAD package. Full docs. CALC-PLOT, scientific calculator
A043 THE ARTIST, Great drawing package with many options. *M*
A048 JIL CAD, Shareware. *XD*
A053 MOVIE CONSTRUCTOR, FACE ANIMATOR. *M*
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G097 WIZZARD'S LAIR adv.
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G106 VIRUS, great graphics & sound. *S*
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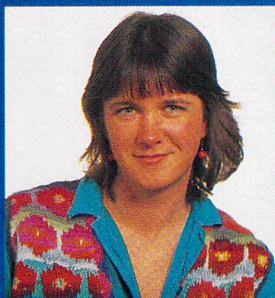
Congratulations, lucky reader. Through your luck, fortitude and niceness you've reached the part of the magazine often called Screenplay. Ahead of you lie pages of game-filled joy, a paradisiacal glade – nay, meadow – of incisive comment, forthright opinion and unusual consonant patterns

THE ST FORMAT REVIEWERS frantically clutching joysticks to escape the dubious midsummer pleasures of sun, sea, and...



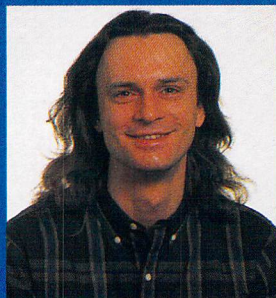
ED RICKETTS

Tired of his old wig, Ed made his own. Contributions to his Distress Relief fund are now being accepted.



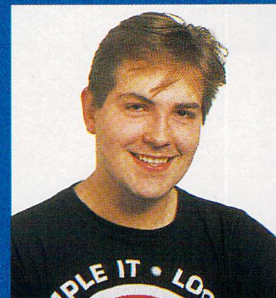
PAULA RICHARDS

Lights on but no one home. Here she's just beginning to get the joke someone told her this time last year.



CHRIS LLOYD

Chris has been practising his pout for some years but still can't quite manage to get those lips curled enough.



JAMES LEACH

A hugely misunderstood man. This is number six in James's "comedy hairstyle" range, and it's the scariest.



LINDA BARKER

Those eyes, that hair, that smile... are all available from Barker Novelties Inc, c/o Pentonville Prison.



LURE OF THE TEMPTRESS

Don't know about you, but I think this sounds like the sort of film that a character in a *Carry On* film would go to see. Perhaps Sid James, and probably Barbara Windsor would be sat in front, and then her bra would accidentally fly off for some reason, and Sid would do his lewd throaty laugh. Just a thought.

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DREADNOUGHTS

"Cap'n, sir, ye cannae sail through that German minefield. She'll never take it." "First Mate Davenport, why are you speaking with that crap Scottish accent?" "Regulation ethnic group, sir. Just ask Milligan over there." "Aye begorrah and a top of the morning to ye, Cap'n." "Oh God."

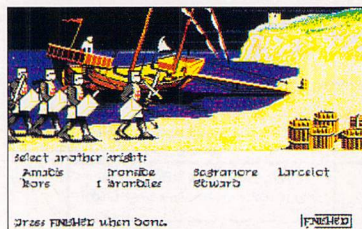
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PACIFIC ISLANDS

"Cap'n, sir, ye cannae take the tank through that Communist minefield. She'll never take it." "Hang on, Davenport, weren't we in that caption just now?" "Aye, sir. But now we're in a tank instead of a bloody great destroyer, sir." "Davenport, do you ever get the feeling that something's gone wrong here?"

PAGE 90



VENGEANCE OF EXCALIBUR

"Yeah, fine, but Excalibur's a sword, isn't it? And it's hardly likely to get up and avenge anything, now, is it? And anyway," he ranted on pedantically, "only King Arthur was able to use Excalibur, and he's dead."

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HEIMDALL

"Cap'n, sir – " "Davenport, if you're about to say 'Ye cannae take that Viking longboat through that minefield because she'll never take it,' I will personally remove your genitals with this rusty eggwhisk." "Are we allowed to say 'genitals,' sir?" "No."

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DIZZY'S EXCELLENT ADVENTURES

Sorely-missed chance for an egg joke in that title there. "Eggcellent" – see, it's obvious? Come on, chaps, if you're going to take this egg business seriously you need to keep your pathetic puns to the max.

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CRUMPLED THIS MONTH

in a homely eccentric way

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POWERMONGER: WORLD WAR ONE EDITION

When *PowerMonger* first appeared, a number of data disks were promised for it that would provide whole new worlds in which to monger power. Only now has the first – and probably the last – appeared. It transforms the twee medieval woodland of the original game into the muddled battlefields of the First World War.

The basic concepts of the game remain the same, so if you don't know how *PowerMonger* works – er, this review isn't going to make much sense to you. As before, the idea is to work your way through 175 territories by conquering at least two thirds of each. This time the map covers the whole of Europe and a lot of the surrounding countries.

Most of the changes on the data disk are in the graphics. Instead of cute

little villages, you have bunkers, hospitals and factories. The generals are replaced by mean-looking gentlemen in military uniforms. Instead of producing catapults and pikes, you make rifles, biplanes and tanks. Rifles are your basic weapon for giving to each soldier. Biplanes buzz over enemy territory and strafe them, but can be shot with good marksmanship. The meanest weapons you can have are tanks, but they take ages to build.

Apart from this, it's mostly the same. The samples aren't much different and the gameplay's still as taxing in the later territories.

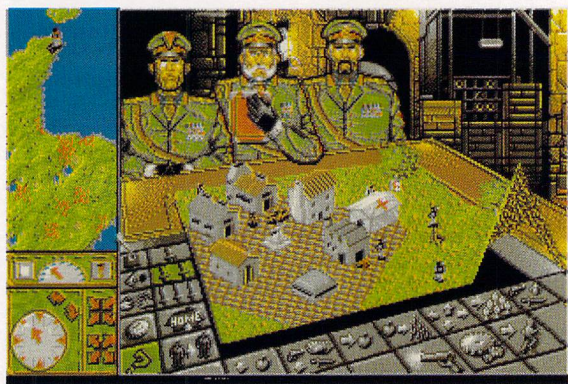
VERDICT: Probably not worth getting hold of if you've already bought *Populous 2*. *PowerMonger* never really stood much of a chance against this competi-



tor – and the data disk doesn't do much to improve its chances. Only the graphics have changed, and even having the new weapons doesn't really make the game feel very much different. Save your £15.00 to put towards *Populous 2* – *PowerMonger* is looking past it already.

ED RICKETTS

● The year is 1914. It's just been pouring with rain, there's a gale blowing, the ground's completely sodden, your spirit's somewhere down at rock bottom and you've got a war to win. No, actually you haven't, I was just being a bit over-dramatic – it's only a game after all. *PowerMonger: The World War One Edition* takes *PowerMonger* into the trenches.



● It's all go when you're trying to build enough tanks to smash Europe into tiny little bits. It takes an age to produce just a biplane, and for tanks you may as well go away and come back a few months later – even with the game speed racked right up.



● Someday all this is going to be yours: 175 naked and trembling territories just waiting to be conquered. Pity none of them are named right: seems a bit odd to be battling near Liverpool and having it called something like Frissidal.

POWERMONGER: THE WW1 EDITION

ELECTRONIC ARTS – £14.99

● Looking quite dated now with the likes of *Populous 2* around, and at this price it's not really worth it.

STF RATING 64%

TOP BANANA

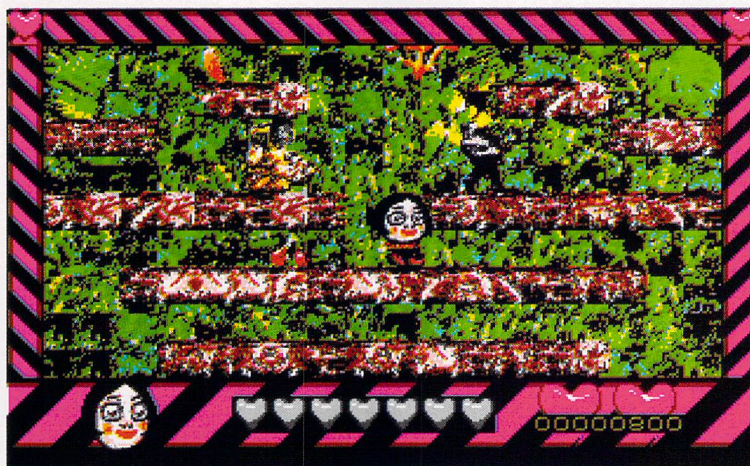
It's cringe time again. Another ecologically friendly, let's-save-the-forests-and-throw-our-arms-around-the-world game, like the ridiculous *Captain Planet*. This one's got a hardcore (you know the score) deep acid rave house sound-



● There you are happily trundling along, collecting all the bonus objects, when you go to collect the object right in front of you and it kills you! How are you supposed to know that's likely to happen then, eh? Life's so unfair.

track which sounds remarkably like most other deep acid house rave "songs."

Briefly explained, this is a platform game featuring what looks like a hastily-drawn Chinese doll with a huge head and very little in the way of



● The crap and nameless sprite with the inane grin gets swamped by the horrendously busy backgrounds and is almost, but not quite, swallowed up. Damn.

body. This crap and nameless sprite is supposed to make its way through four worlds – the rainforest, Metal City, the Temple and the Mind-Scape – beating the baddies by chucking love hearts at them (barf) and collecting all the nice, fluffy and good bonus items like big sticky cakes and fruit. Jeez.

The rest of the graphics are pretty awful, too. Possibly the object was to make them look

wacky, funky and carefree, but unfortunately they come out looking tacky, funny and definitely free of care. The backgrounds clash so much with the foreground (is it a foreground?) you can't really see what's going on.

If you're fortunate enough to own an STE, you get to hear the obnoxiously stupid sampled sound effects the crap sprite gives out, but on a normal ST you don't get any music and only stan-

dard chip noise. And you can guess what that's like without too much difficulty.

VERDICT: Hex have tried hard to make a game that's fun, young, trendy and interesting to play, and failed dismally on all counts. It's vaguely like a Jeff Minter game in some ways, but tragically in no good ways. It's a good touch to enable you get at the sprites so you can edit them, putting no copy protection on the disk, and printing the manual on recycled paper, and so on, but it doesn't make up for a crap game.

If "environmental" games carry on in this way, people will be wondering whether doing the world in isn't such a bad idea after all. Nice title, shame about everything else.

ED RICKETTS

TOP BANANA

HEX – £25.99

● Crazy graphics make it look like a Commodore 64 game. Sound effects are so weird they're not funny. Gameplay is boring. But don't get the impression that's it a bad game... oh, all right, it is.

STF RATING 48%

LURE OF THE TEMPTRESS



If the promise of playing Virtual Reality games where you do exciting things like switch lights on and off leaves you just a little cold, why don't you try Virtual Theatre? Join Ed Ricketts as he arrives late, rustles his programme and coughs annoyingly at the back



● So there you are, heroically languishing in a dungeon at the beginning of *Lure of the Temptress*. How to escape? At your disposal you have a torch, a straw bed and a stupid Skorl guard. Throw the guard at the bed and steal the torch? Perhaps not.

We are in a quiet country field. A young lad known only as Diernot is making a groat or two being a beater for the visiting King. Suddenly, up rushes a messenger with a message (stop me if it gets too technical) which says that the nearby village of Turndale has been taken over by an evil enchantress called Selena and her hordes of nasty beasties known as Skorl. Ooh.

By a twist of fate crueller than a particularly cruel fate twist, Diernot is caught up in the rush of the King's army as he gallops off to defeat the Skorl. Thus it is that, the next day, he gets to see the King being well and truly stuffed by the Skorl beasties. The town is taken over, Diernot is captured and thrown into a cell.

And so we arrive at the beginning of a new RPG. Sorry to sound like a manual there for a moment, but this plot really is quite important to the game. Diernot, a somewhat unwilling hero, has to escape from the dungeon and somehow overthrow the vicious Selena using just his skill, his cunning and his unusual name. Oh, and the help of an amateur jester, Ratpouch, who he rescues early on.

Lure of the Temptress is the first game to use Revolution Software's new game system, Virtual Theatre. This impressively-named setup is based

broadly on the almost textless point'n'click interface of games like *The Secret of Monkey Island*, but includes a few significant advances.

You carry out basic actions in the normal way. You walk by clicking where you want to go – the cursor changes to an arrow to indicate possible exits. To manipulate an object, you click on it with the right mouse button, which brings up a list of verbs possible for that object. You then choose one of these verbs and the command is carried out. Couldn't be simpler.

You talk to other characters – there are a lot of these – in a similar way. After attracting their attention, you're usually presented with a list of questions you can put to them, which changes depending on your current situation. Sometimes only one question is available and this is asked automatically for you.

You can also tell characters to do things for you, although only Ratpouch always obeys you. For instance, you can tell Ratpouch to "Go to Blackfriar's row and then ask monk for knife," and he does it. This is important, because some puzzles can only be solved by making use of other people.

The other main programming advance is autorouting. Instead of having to navigate Diernot around other characters and objects, you simply point him where you want him to go and let him off the leash, as it were. The characters sort themselves out on the



EVEN THE MAGGOTS ARE DANCING

Once you've got some way into the game, you realise you need to get into Taidgh's house. Who's Taidgh, where is he and why



● Having had a word with Luthern the blacksmith you know that Goewin has been kidnapped by the Skorl. Fat lot of good that is. However, he does have a useful-looking tinderbox in his smithy which you can nick.



● Wandering around town you notice a shifty green-coated figure skulking about. Talk to him and you learn his name is Mallin. He has a job for you – take a "worthless metal gold bar" to the shopkeeper. Okey-dokey...



● Ewan (the shopkeeper) gives you in return a sparkling blue gem! Great! Er, except it's worthless because it's made of paste. Now what?



● Now use your eyes. Hanging outside the Magpie pub is a sign with a painting of a magpie (surprisingly), carrying a pale blue gem on a chain. A clue, perhaps? Go inside...

PLACES TO VISIT IN PICTURESQUE TURNVALE

Why not take advantage of our low-cost package holiday? On your economy-priced half-day get-away break you can visit....



● ...the charming Weregate with its goorgeous statue guardians. Unfortunately only a woman can open the gates so male visitors - er, have to wait outside and buy an ice cream, or something. Inside you find - ah, sorry, that's for Luxury Class travellers only. Our next stop is...



● ...the quaint village shop, which, in this case, happens to be a herbalist. Ah, I've just been informed that the owner of the shop, Goewin, popped out a while ago and hasn't been seen since. The shop is, of course, locked, so we have to move on to...



● ...Blackfriar's Row, wherein dwell the monks. Talkative chaps they're not, because they've all taken a vow of silence. They're also quite shy about letting people into their monastery, so you have to nip in quick if you want to visit. Finally, an unscheduled stop...



● ...a dingy little place known as the Town Hall. The Skori guard is under strict instruction not to let anyone but Selena in. Rumour has it Goewin is inside... but that's it for this tour, ladies and gentlemen. If you'd like to board the coach, the driver will mumble for you during the return journey.

screen, politely excusing themselves to other characters and moving out of the way. Oh yes, the other characters talk among themselves, too. Sit in the pub and you hear priceless conversations like this one:

Ratpouch to Nellie, the barmaid: You remind me of my mother.

Nellie: Oh, really?

Ratpouch: Yes, she was a woman, too.

Or Ratpouch might call you over and tell you a joke, like: "What do you give a Skori with diarrhoea?" "Plenty of room." Trust me, these asides are quite funny in the game. So, characters are

just as important as objects. Don't insult anyone too much, because they're likely to go off and tell their friends about it, and then they get miffed with you, too.

Much of the game takes place in the village of Turnvale, though later on there are cave and castle sections (assuming you can work out how to get there). Wherever you are, the graphics are superb: finely detailed, colourful and realistic. The more you play, the more you appreciate the amount of work that's gone into them. Same goes for the sprites - they're a decent size

and expertly animated. You can even see the characters' legs moving inside their clothes.

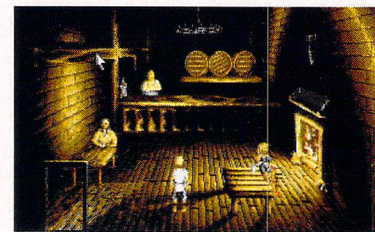
And get this: originally, Revolution were going to use chip noises, but took them out because they weren't good enough. If only, if only, other programmers would think this way. Instead, samples are used at every location, mostly quiet background noises like the dripping of water and the twitter of

birds. These samples are so good you don't notice they're there - they become part of the atmosphere.

VERDICT: What Revolution Software have come up with is something really rather special, viz. the first serious alternative to Lucasfilm's way of doing things. They've managed to blend a brand new games system with a workable plot, character interaction and stupendous graphics, and then thrown in a huge dollop of humour to lighten things up.

What you shouldn't expect from *Lure* is another *Monkey Island*. They are superficially similar, but *Lure* paints its characters with far more care and realism, and takes its subject matter quite seriously. Although there are points in *Lure* where you can't progress further without solving a particular problem, it's not nearly as linear as *Monkey*. Events just don't suddenly happen to move the plot along. Whereas playing *Monkey* is like watching a film unfold, playing *Lure* is more like reading a book - events follow a logical course without dramatic scene changes that skip over chunks of time.

Possibly, though, the game is a little easy. It's very difficult to judge a



● The Severed Arms - what a pleasant little inn. Bit of a mess at the moment because there was a big Skori party the night before, but otherwise very welcoming. Ask Morkus sat there at the table - he saw a few things last night.

thing like difficulty because often one player spends weeks stuck on a puzzle that another player has zipped past. It's just a feeling that there really isn't enough to do.

As you read this, Revolution are beavering away on the second Virtual Theatre game, this one set in the future. The possibilities offered by this game, written by a team who have used their system thoroughly, are frankly cell-boggling. But don't wait for that - get in on the act now and get yourself a copy of *Lure of the Temptress*. It could very well turn out to be the second best thing you do in 1992.

ED RICKETTS



● Ratpouch is just like Baldrick, except he's not small or smelly or stupid and he's a jester. But he's jolly handy for giving orders to - you can give him a string of commands like this and off he toddles and does his best to carry them out.

is his house locked? Well, it's a little complicated... but anyway, don't worry about that now. The way you

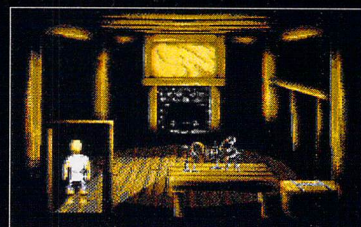
get hold of the key is typical of the character/puzzle interaction you need for most tasks.



● Have a word with Nellie. Why not give the gem to her? And, by golly, she's over the moon - turns out it's the long lost fabulous Turnvale Jewel. For being so helpful, you're rewarded with a flask full of strange green liquid.



● And so do the obvious and drink the liquid (having saved first, natch). It seems to have an interesting effect on you ("Look, mother, even the maggots are dancing!" Blimey), but you can't stomach more than a sip.



● So what's all this got to do with getting into Taidgh's house? And what's that on the table inside? And what do the Skori have to do with all this? How do you rescue Goewin? Who are Fengael and Hammawen? Not telling...

LURE OF THE TEMPTRESS

VIRGIN - £29.99

One 1MByte only

● Unashamedly based on *The Secret of Monkey Island*. It's not quite as manically funny, but its subtleties should stay with you for a long time. You'll be going back and trying things long after you've finished it. And, by God, it's British, too.

● Makes Sierra On-Line games look like the graphical, audio and gameplay dinosaurs they always have been.

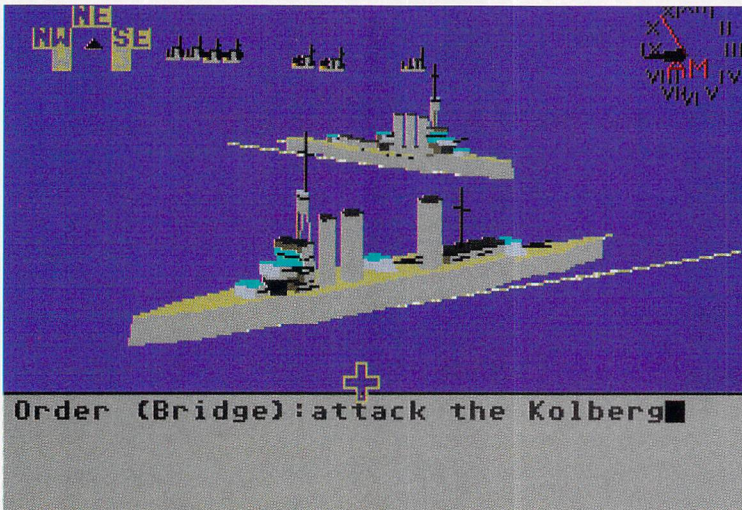
STF RATING 92 %

DREADNOUGHTS

Bloody great metal floating things, dreadnoughts – the most powerful fighting machines on the planet. You, as the Admiral, have to command a fleet of them which takes courage, determination and a cast-iron upper lip. Imagine the tang of sea spray and the acrid smell of cordite as your mighty flagship ploughs through the waves. Er, there's always the possibility of those foreign johnnies actually hitting your ship and you getting fatally mashed – letting the side down horribly. You take the helm in *Dreadnoughts* during the golden age of the capital ship – World War I.

Like the previous games in the series – *Armada*, *Austerlitz* and *Waterloo* – *Dreadnoughts* is a tactical wargame played out in 3D. You give orders to your chaps and observe the results as best you can. There are seven scenarios to play out including Dogger Bank and the mammoth punch-up at Jutland. The battles unfold in a series of rounds and, before each, you issue your commands. These are typed in and cover a wide range of actions: ships can be navigated by longitude and latitude, as well as by telling them which direction to head in or ordering them to chase after other ships.

The game comes with indispensable charts of the relevant areas. There is no overview of the proceedings, so you spend most of the game unable to see what's going on and have to use the position and sighting reports to follow the flow of battle. This "fog of war" approach gives a realistic feel, but can be very frustrating. You have to be very thoughtful and careful, since just charging straight at the enemy with all your



● This is some of the massive amount of armoured firepower the British had at their disposal. The last scenario in *Dreadnoughts* at Jutland is where the biggest clash ever between these ironclad monsters occurred. And it's a real handful to control – unlike the other battles, you need to have at least 1MByte of memory.

guns blazing generally results in one wet commander.

For the larger scale battles, your ships are grouped into squadrons and you need only issue commands to the squadron flagship. Each captain acts independently unless ordered to do otherwise. Each scenario takes a while to battle through, but you can opt to save the game and come back later. At the end of the affair, you get a little debriefing showing the final scores. Unfortunately, however, there's little else, so if you got confused and lost track of things, you're none the wiser.

The interface is fairly basic – you use the mouse as a telescope from your flagship, but for everything else you use the keyboard. You need to learn the syntax for all the commands

and keep referring to the chart. It's realistic, but having the chart on-screen would have been good, with the last known positions of each ship marked on it. The 3D display is constantly being redrawn, which can get a little slow especially if you are near land.

VERDICT: Apart from the acres of blue sea, things are detailed. It's not a game for adrenaline addicts, since nothing moves at any pace and you need patience to work through battles. As serious wargames go, this is one of the better ones – you get the impression that a good deal of research has gone into the historical background. It takes a while to get into *Dreadnoughts*, but you're likely to find yourself getting distinctly sea-doggish as you stand on the bridge of the ironclad flagship issuing the command to close range and open fire. Full speed ahead and damn the torpedos – England expects and all that utter rot.

CHRIS LLOYD

DREADNOUGHTS

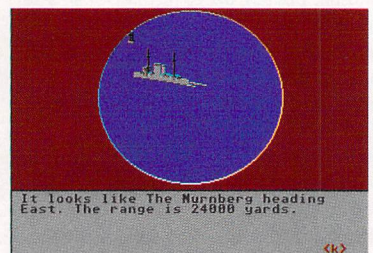
TURCAN RESEARCH –
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- Same system as *Armada*, only metallic.
- Much more realistic than the Impressions series of wargames, although not as well presented.
- Serious wargame material, but not a water-borne Pacific Islands.

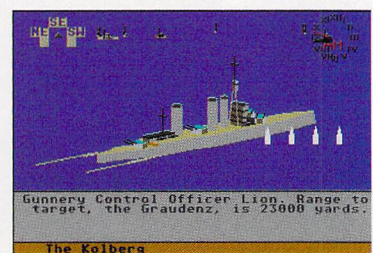
STF RATING 79 %



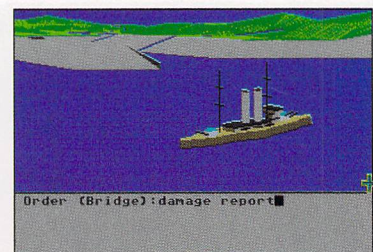
● Phoar! Look at the ironwork on that. *Dreadnoughts* puts the Admiral's cap on your head and the burden of command on your shoulders as you steer your fleet to certain victory, you hope.



● The telescope comes in handy for those interesting ship-spotting sessions. The ships are built up from vector graphics and are highly detailed, with turrets, funnels and masts.



● The bloody cheek! The foreign-type wallers are actually firing back. We'll show them, by God! This is the point in the game that gets the sound department active, with a few half decent bangs, whistles and crashes.



● If you should happen to come across these large immobile green ships that are surrounded by rocks, watch out because they're actually islands. Try not to run into them or anything silly like that, or you'll end up breaking the ship, you won't be able to play Admiral again and they'll want the hat back.



● Those were the days – the proud British navy thrusting through the water. We had the biggest one in the world, you know. Britannia rules the waves, by jingo! You can take a look towards the eight points of the compass from any of the ships.

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● The view from inside a forest. Arboreal, isn't it? Unless you can find a track running through the middle, the trees slow you down. And sneaky enemy peeps like to lurk in the middle and loom up at you unexpectedly. It's all most unsettling, really.

Aha, you're saying. Here's a good chance for me to skip a couple of pages, because (a) I don't like tanks and (b) tank simulators are dull. To which the reply must be: (a) stop talking to magazines and (b) stay a while, because you might find you like this particular tank simulator.

Pacific Islands is the belated sequel to *Team Yankee*, a fairly innovative sim from a while ago. It was innovative because it used bitmapped graphics rather than 3D vectors, gave you four separate simultaneous views and made controlling a six-man tank quite straightforward.

It seems the Yama Yama atoll (yep, Pacific islands) has been taken over by a group of goddamn pinkos under the very collective nose of the US Army. The latter draws a sharp intake of collective breath and sets out to rid the

once peaceful islands of the disgusting Communist hordes.

There are five islands in the archipelago, each of which is split into five or so areas. Although the islands have to be tackled in a set order of increasing difficulty, you have a limited choice as to which area to conquer next within each island.

Before each section, you're shown a map of the battle area and given a brief as to what you should be doing in it, which is more than a little useful. Missions range from blowing up strategic comms centres to defending villages to putting runways out of action, and it's not unusual for there to be three different objectives that need to be fulfilled in a single area. You lose missions when your objectives can no longer be achieved (for instance, when a group of enemy tanks reach a village) or when all units are destroyed. Tanks are con-



● A vicious palm tree breathes its last, succumbing to the mighty force of a SABOT missile up its barky bits. Take no prisoners! Leave no stone unturned! Take a right after the lights! There can be no going back – we take the Pacific Islands or die trying! (It says here.)



● No – don't do that – don't... oh. Blowing up innocent village buildings is satisfying in a macho mindless sort of way, but you get fined for it – the Pentagon takes a dim view of "collateral damage" these days. However, blowing up enemy buildings not on your list can earn you extra cash.

PACIFIC ISL

Did you know there are more makes of tanks than there are cheeses? No? Well, that's because we made it up. Still, there are quite a few. But not here. Well, here's a review, written by Ed Ricketts, with no help at all

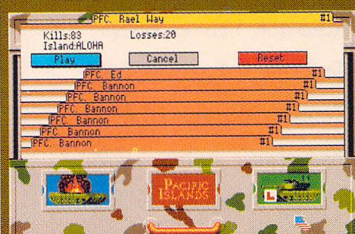
trolled in groups of four each, imaginatively known as a unit. A unit of four tanks acts like one big tank – all tanks in a unit follow your orders and all their ammunition is available to you. If you're to stand any chance at all of completing your mission within the 40 minute time limit, you need to get used to controlling all four units simultaneously. The real problem is that you can only

change the direction of the tanks from the map screen. You mark your destination with a cross, set the speed at which to travel (right the way up to a scorching 50 mph) and off they go. 'Course, crossing rivers and forests means the tanks slow down considerably.

Enemy units generally show up on the map screen when you're close

WAR, PART 1: THE BITS WITH TANKS IN

Or: what's the difference between an atoll and an archipelago, anyway?*



1 Choose an appropriate commander. At the end of each successful mission, your details are recorded here in the highly confidential camouflaged cabinet. Eight different saved games can be accessed, though, of course, at the beginning they're all empty. The icons enable you to quit, change the language or work through an extremely useful tutorial scenario.

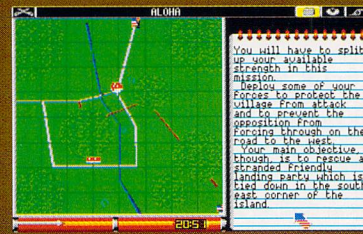


2 Next you need to choose where to fight. Only areas adjacent to previously-conquered ones can be tackled, and the order they're selected in dictates from which direction the offensive starts.



3 Then, horror of horrors, you have to buy your own tanks and weapons. Don't the Pentagon do anything any more? You've got four units made up of a maximum of four tanks each. Only certain weapons can be loaded on each tank: Abrams, the best tanks available, can't be fitted with TOWs, the missiles with the longest range. Damn.

You might also need to repair a tank (the bottom bar) or improve the crew's morale with some R'n'R (the top bar) before heading off. It all costs dosh.



4 Finally, you reach the battle briefing: what to do and where to do it. The icons at the top right show you the approximate locations of your targets (note these – it's very easy to forget where you're meant to be going) and enable you to set up artillery support for a given time. For instance, you might want to bombard a runway about 20 minutes into the game, so set the clock appropriately. Minefields and smoke screens are also available, though not all the time.



● You know how, when you're on a train or bus, and you're dozing off, not really awake or asleep, and something wakes you suddenly, and you jerk your head up in complete disorientation and realise you've been dribbling? Well, that's the sort of feeling the four-view screen induces all the time. Scary.



● The map screen. Tragically, it's beyond the scope of this article to explain the scroll controls, the zoom icons, the speed setter, the formation icons and the dead stop icon. (And that's even before we get to the Column Select, Manoeuvre Adjust, Reagent Mix and Oppenheimer Joke.)

ANDS

enough, but sometimes they remain hidden until they're on top of you, so you have to be vigilant all the time.



VERDICT: Tanks. Strategy. Map screens. Sounds thrilling, doesn't it? Well, by some strange alchemy, it is. There are a number of reasons why.

First, the tanks are easy to control. Once you know what all the icons actually do, you may find it's second nature switching between the views – not that experience makes using the simultaneous view any easier. Secondly, you don't have to be a master tactician to plan your attacks. Common sense should see you through most scenarios if you keep your wits about you.

Lastly, the graphics really are quite tasty. Although vectors might have

been faster, bitmap graphics suit the job perfectly. You soon forget to notice their loss of resolution when you zoom in, and eventually even get to like it. The buildings look different enough to be recognised for what they are, and the tricky effects like smoke and infrared look just real enough to be convincing. Sound is, sadly, chip noise, but as that abominable rubbish goes, it's not bad. Even the game's smallest details, like the intro and the manual, haven't been neglected.

Perhaps the only problem is how hard the game is. After completing a few scenarios, you tend to find you've completely run out of money and tackling the others is impossible with the few tanks you've got. So you need to start again with a clean record, returning to the first island and working through the scenarios again with your new-found knowledge. Bit of a pain, that. *Pacific Islands* is a fine game with great long-term playability. Rivetting stuff. (Rivets? Tanks? Sometimes even I despair.)

ED RICKETTS



PACIFIC ISLANDS

EMPIRE – £25.99

Hard drive installable

● Quite similar to *Team Yankee* – after all, what do you expect? It's a sequel. Much better, though, with more to do and harder missions.

● Not as complex or as realistic as the forthcoming *Conqueror*, but much more fun, probably.

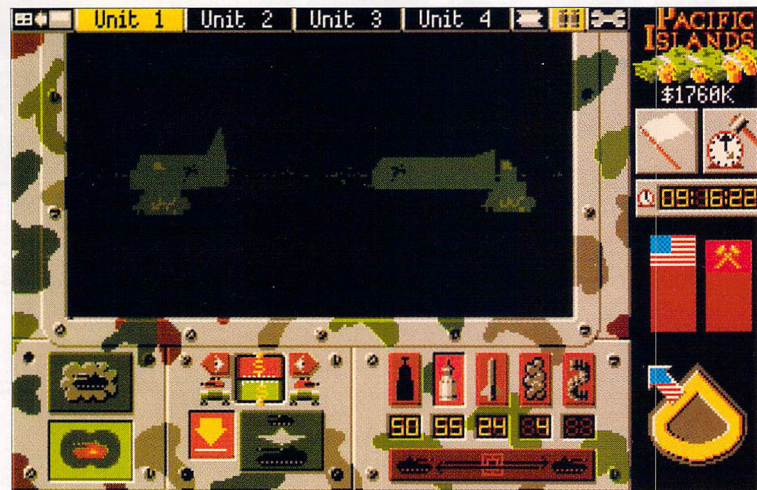
● Graphics don't rival 3D spectaculars like *Starglider 2* but they have a certain idiosyncratic charm.

STF RATING 90 %



5 Then, God help us, you're let loose on the battlefield. There are three things to keep in mind constantly: (a) your cash total, (b) the time, and (c) the enemy firing bloody great shells at you. The latter is probably the most important.

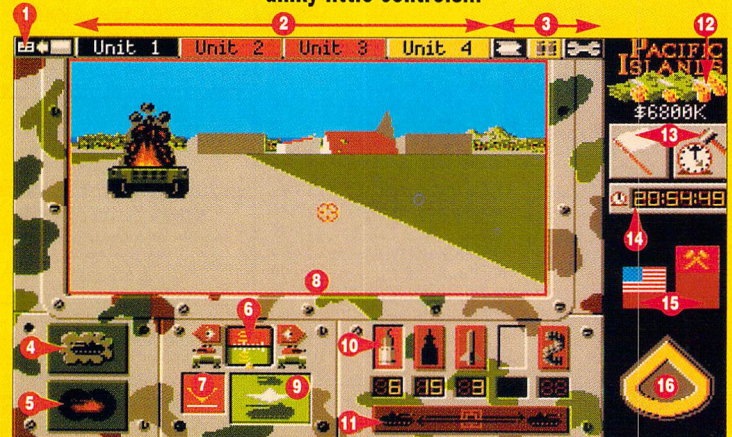
*An atoll is a string of coral islands surrounding a lagoon, whereas an archipelago is just a group of islands. Actually.



● Believe it or not, you do need to know what these shapes are in the infra-red mode, especially because some missions take place entirely at night when you can only use infra-red. On the left is a broken statue and behind that there's a church. On the right there's another broken statue and behind that there's Mrs B J Smegma of 13 The Crescent, Belmont, not being seen.

SO HOW DO I GET INTO THIRD?

While the simultaneous four-unit view is impressive, it's not really that useful in the heat of war, because you can't see much and some of the handiest icons are missing. Cue full-screen view and those dinky little controls...



- 1 Returns you to four-view mode. Don't use, on the whole
- 2 Select unit to control
- 3 These icons change between the map, the 3D and the damage views respectively
- 4 Turns on/off engine smoke to shield your movements – although a six foot moving wall of smoke is a bit of giveaway, really
- 5 Turn on/off infra-red, giving you a nice green display. The other side don't have this – ha!
- 6 The top compass shows the direction your turret is facing, the arrows either side swivel it about, and the bottom shows the direction you're actually moving in. You can't change direction from here – you need the map screen for that
- 7 Brings you to a dead stop (eventually)
- 8 The view, which you – er, see
- 8 Zooms in 16 times. Mucho useful,

- 9 not to say indispensable
- 10 Your weapons, mostly missiles: heat, SABOTS, TOWs, smoke grenades and a rather crap machine gun which has infinite rounds
- 11 Rangefinder doobrie – when the cursor's on a target and it's within range, it turns square (the cursor, not the target, obviously)
- 12 Your cash. Goes up when you're doing well, goes down when... and so on
- 13 Surrender and pause icons
- 13 Time – you generally have a time limit of 40 minutes for each mission, which means you really have to shift bottom to get everything done in time
- 14 Morale of American and Commie troops
- 15 Your rank. Er, no, I don't know
- 16 what rank this is either

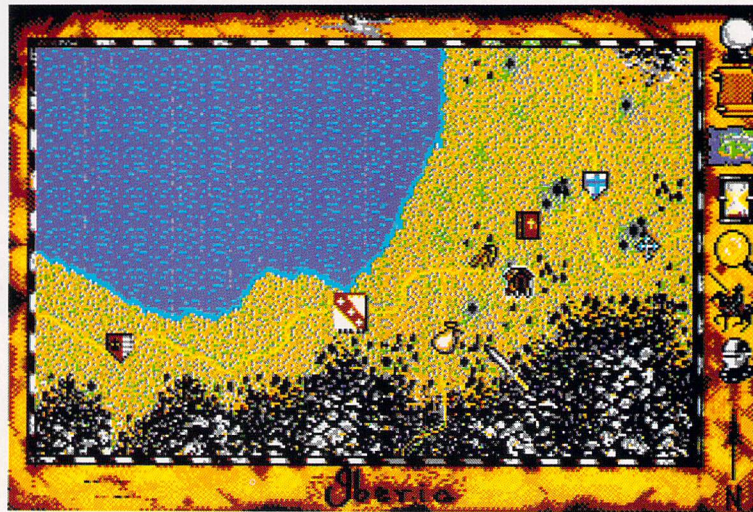
ST FORMAT JUNE 1999

VENGEANCE OF EXCALIBUR

It's 1000 AD and England has fallen foul of some horrid disease. London is full of rats, the crops refuse to grow and the weather simply can't make up its mind. It must be the greenhouse effect. And all because... King Arthur's treasures have been nabbed by a strange chap known as The Shadow. A book, Arthur's shield and helmet, Excalibur and an all-powerful scroll have been taken to the Iberian peninsula. It is your duty – as a knight of the round table – to retrieve these lost treasures. If you fail, the whole of England suffers.

Iberia is part of the Holy Islamic Empire. It's a dangerous land full of mercenaries and Christian and Muslim armies – most of the armies have their loyalties, though some may wish to join you, and, as long as you've got the gold, you can put the mercenaries to good use. Only four knights can go and each has his particular strengths and weaknesses. A knight with a good grasp of magic could come in handy, as could one with plenty of money.

Vengeance Of Excalibur is a kind of medieval strategy game, and you have to keep switching from a large map to a smaller detailed scene to really know what's going on. Chances are that you're never really going to find out exactly what's happening – at best you get a slight inkling. You have to complete seven tasks involving rescuing people, fighting others and recovering



part of Arthur's treasure. If you succeed, you're on your way to defeating Mr Shadow and lifting the cloud of disease that hangs over England. You don't have to complete each episode but, since each serves to strengthen you in some way, you might as well. Try and speak to everybody who crosses your path – you may even be able to bribe some of them, it probably won't work, but at least you can try.

Along the way you have to kill someone, but choose your opponent carefully. You always have to remember that you're a noble Christian knight who respects women, children and priests – make sure you only kill the baddies. You

● To get the best out of *Vengeance of Excalibur*, this medieval strategy game, it's best to remember to look at all the detailed screens. Now, aren't those rocks interesting?

can choose just one knight to do the fighting, or you can send the whole lot.

There are so many instructions you'd think there'd be enough in the game to hold your interest. But there isn't. *Vengeance* generates so little interest that you could well find yourself walking into an attack just to see the scene of carnage that accompanies the "you're dead" message.

VERDICT: *Vengeance of Excalibur* is an incredibly slow game that sometimes just doesn't seem worth the effort. Your first view of the game – through the introductory background sequence – is incredibly off-putting. For each few lines of text, you have to perform an inordinate amount of disk swapping. This wouldn't be anywhere near as bad if the screens were worth it, but they're not. The graphics aren't particularly brilliant and you have to continually adjust the brightness of your monitor if you want to be able to read any of the text – yellow writing on a white background is especially ineffective.

Things don't get much better when you start the game proper. On the large map which shows the entire area, the armies are indicated by a single shield – the whole concept just doesn't work too well. *Vengeance* would probably have worked better as a straightforward strategy game without any of the dressing up. You start off thinking it's going to be an Arthurian romp through strange lands with plenty of things to examine, spells to cast and a bit of good old fencing. But it isn't – most of your time is spent deploying your army, looking for knights who have got lost and swapping disks. It's an extremely stupid story, too.

LINDA BARKER

HOT HOLIDAY SPOTS

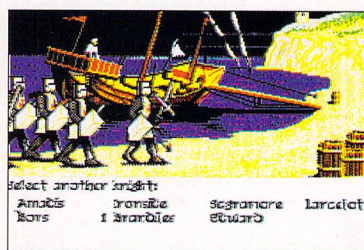
- ① **Salamancer:** This is the scene of a very famous battle which we won. (Not to be confused with salamanders.)
- ② **Barcelona:** A very sporty place with a wonderful cathedral.
- ③ This size map gives you an idea chance to view those long-distance movements. For a closer look at your troops simply click on this magnifying glass.
- ④ Those who live by the sword, perish by the sword. You have been warned.



● The good book made its way forwards, crushing anything that stood hesitantly in its path. In one village, it had completely wiped out an infants' school and the local taverna.



● The knight is utterly determined to make the old chap speak to him, so he offers him an old scabbard, a bottle of newt's blood and a curl of Sir Lancelot's hair. Is that the answer?



● The knights clank down to the beach. This is by far the worst part of any journey – it's just so difficult getting sand out of your armour. The salt water doesn't help, either.

VENGEANCE OF EXCALIBUR

VIRGIN – £29.99

- Extremely dull strategy game with very little recommend it.
- Much too complicated for its own good.

STF RATING 59

HARLEQUIN

Let's pretend for a moment here that you've read the plot of *Harlequin* already. Believe me, if we do that it'll save a lot of time. Right, so you're fully conversant with the story of the jester trapped inside a clock tower looking for four pieces of heart. The other thing you need to know is that it's a platform game. So let's go through the things we can deduce from this.

1. The plot bears very little relation to the gameplay.
2. There's a lot of running and timed jumping to be done.
3. There are various strange monsters

hanging about who you need to kill kindly – that is, by wanging hearts at them.

4. There are switches which affect various parts of the scenery, mostly moving platforms.

5. There are different themed worlds, each of which has its own particular brand of strange and surreal graphics, which are okay but not specially well animated.

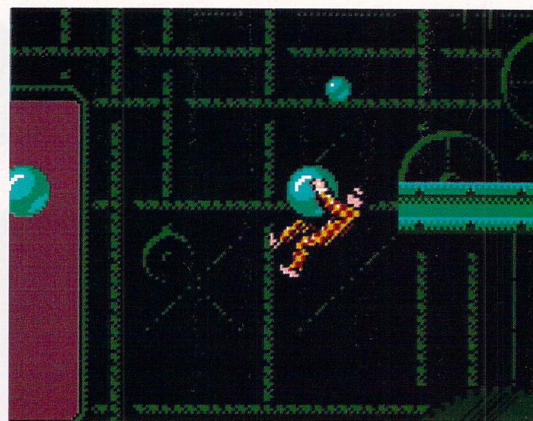
6. Bonuses abound, as do special objects which give you extra powers, viz. space hoppers, umbrellas and – er, angel fish.

7. There are only six things you can say about it.

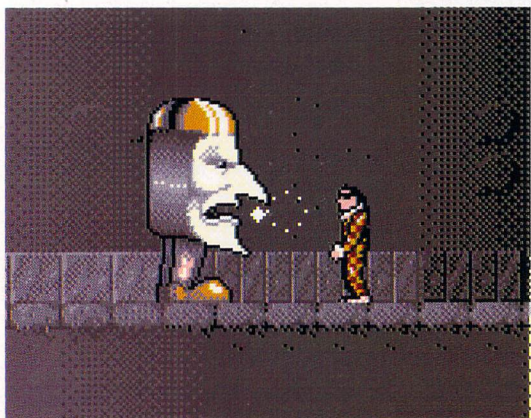
VERDICT: Against all expectations, *Harlequin* is rather good. Initially, you expect to find little more than yet another platform-'em-up, and, unless you scratch the surface of the game, that's all you get. But the deeper you get in, the more you get attuned to the game's weird flow – the routes to take, the moves to make, where you have to take running jumps – it becomes very intuitive and a pleasure to play.

There are some welcome extras, too. At various points, you can choose whether or not to read a cryptic clue as to what you have to do next – there's no penalty for reading the clue save damaged pride. And because the game's so large, you can load and save at any time.

The platform concept has been refined to a tee here, and the swinging balls, walking clocks and lurking mon-



● **Harly** clings on for dear life high above the spring-filled platforms. *Harlequin*: set inside a clock tower, featuring a jester involved in a search for four parts of a missing heart, and crawling clocks. Yep, hello to Virtual Unreality.



● When you're confronted with a giant bouncy Mr Punch, do the logical thing and bung a few love hearts at it. Alternatively, you could just try and out-weird it by telling it this joke: "What's the difference between?"

sters fit perfectly into *Harlequin*'s scheme of things. Like *Magic Pockets*, it's a rarity – a platform game that makes platform games fun once again.

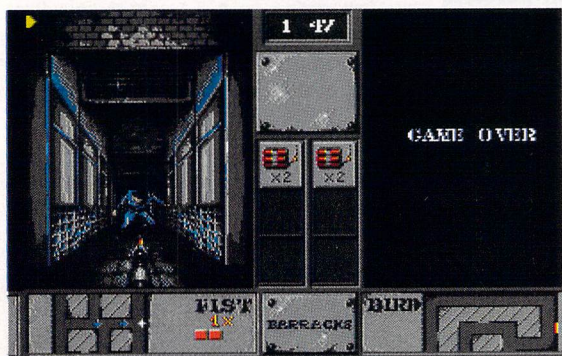
ED RICKETTS

HARLEQUIN

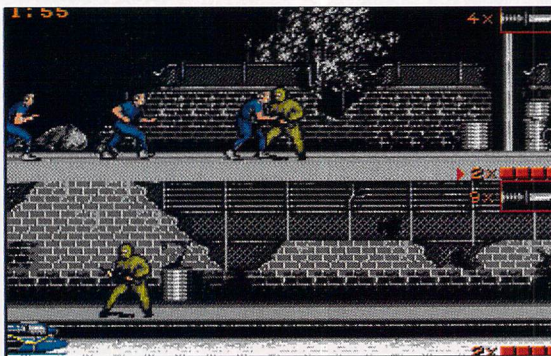
GREMLIN – £25.99

● Surrealist graphics are close to *Robocod* in style, though not in detail. *Harlequin* is the more enjoyable game.

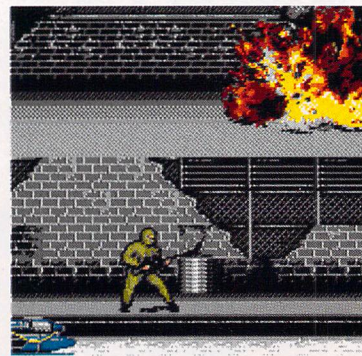
STF RATING 79 %



● Jump! Jump! You vile, crazed drug baron lackey! Oh – he's dead. Come on, get up, I haven't finished being sanctimonious yet. Finding the right rooms in the corridor bit is made slightly easier because they're marked in red on the map.



● Traditional style det. des. res. In need of some renovation. V. roomy, plenty of recreational areas. \$1,500,000 ono. If only that undesirable Tardiez wasn't squatting in *Alcatraz*, it would be snapped up in absolutely no time at all.



● Yes, great idea, step on a landmine. Why not? That way you can cover as wide an area as possible. If two of you play, number two uses the bottom half.

ALCATRAZ

Drugs. They're not big and they're not clever, even in 1996. However, Miguel Tardiez thinks different. He's holed himself up in the old Alcatraz compound with tons of the stuff and no desire to come out. You, being all crack, have to go in after him, blow up his stash and get the man himself.

As you might expect, this isn't just a case of popping in and asking him nice and politely if he could please stop being illegal. First of all, you have to find your way into the barracks building, in a horizontally-scrolling section. Baddies come aggressively at you from all sides armed with guns, knives and flame-throwers, and you have to disarm them with whatever weapon you can get from them. Guns are best, but they're noisy and the chances are that they're going to

attract other guards, which isn't really a particularly brilliant idea if you want to stay in one piece.

Once you're inside, it's time to roam miles of corridors – first of all your task is to find a report which condemns the traffickers – though that really does seem a bit pointless when you're going to kill most of them anyway – then the drug stocks, and finally a paper money cache. This section is set in first person perspective. Rounding a corner often brings a nasty into view, who is inevitably firing at you without any visible sign of compunction. So you, of course, must shoot back at them without hesitating to question what reason you have to take a life. Once you've found the right rooms, you need to leave time bombs in them. After a bit

more corridor shuffling, it's time to get into the cell houses where Tardiez is skulking. Because they're locked, you have to scale the side of the buildings – on a rope, obviously. This section involves dodging the enemy's spotlight by moving up or down the rope appropriately.

Finally, once you've made Tardiez promise never ever to do it again, it's a quick sprint back to the waiting island and home for tea and stirring war stories.

VERDICT: Considering how long it took to develop *Alcatraz*, it's a massive disappointment. It's simply a collection of uninspiring subgames. The graphics are dark, moody and well drawn, the samples are passable, but the gameplay's turgid. It's also very, very difficult even on the

Easy level. But the best thing you can do to this game is say no.

ED RICKETTS

ALCATRAZ

INFOGRAMS – £25.99

● Immensely difficult, even with four lives and four sub-lives each.

● Collection of sub-games which play remarkably like a collection of sub-games.

STF RATING 54 %

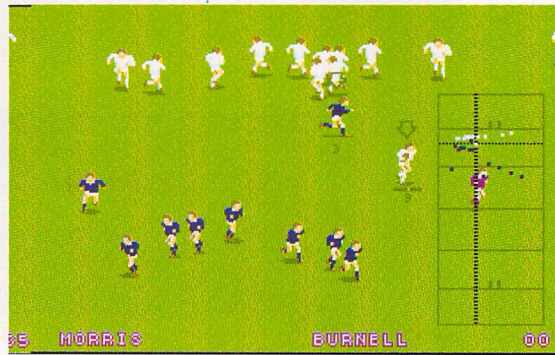
WORLD CLASS RUGBY – FIVE NATIONS EDITION

Were you one of the supporters cheering all night in the street when England won the Grand Slam? If so, shut your noise next time. Some of us were trying to get some sleep.

Anyway, as a follow up to the normal *World Class Rugby*, Audiogenic have updated the data to reflect the season just gone. All your fave players are included; Carling, Foster, Heineken,



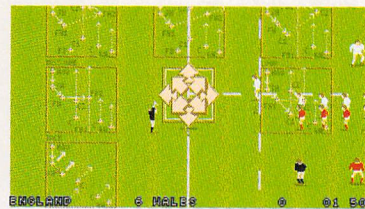
● Zoom out and it becomes three dimensional micro-rugger with Audiogenic's special five-nations *World Class Rugby* type game.



● Okay, so who's gone and hidden the ball? It was here a minute ago – I saw it. Now, if someone doesn't own up immediately, you're all going to be watching *Big Break!*

but not Condom, the amusingly named Frenchie (who has retired).

The game is fast, playable and a lot of fun. You have a semi-3D view of the players, and the pitch can be 2D or 3D. All the traditional rugby moves are included: line-outs, scrums, biting of



● In the lineout, players select which circuit diagram corresponds with the electrics of a Mk I Escort. Easy? Not at all. They must do it by smell alone.

Welsh ears and the classic boot insertion, making the game more realistic – but not if you don't know the rules. As well as running around, you can fiddle with the team selection, set the difficulty and even grow 18 inches and get kicked in the face. Very realistic.

VERDICT: A lot of fun for the rugby fan. But it's not much different to the original *World Class Rugby*, so buying both might be a bit keen. The game is playable and fun, with slow motion replays that you can save and load – unlike the first time around. Wagging the joystick during scrums is a bit onerous, as is the passing move which never works properly. But these are small gripes. Overall, it's a clingfilm-



● Good. That's it. Now, you two, if you could pretend to be tiny acorns growing into massive oak trees. And Guscott and Underwood, for goodness' sake, stop sniggering this instant.

wrapped slice of enjoyableness.

JAMES LEACH

WORLD CLASS RUGBY – FIVE NATIONS EDITION

AUDIOGENIC – £29.99

● Definitely better than *World Class Rugby*. Simpler controls, reloadable action replays and accurate teams are the major changes.

● Whether it's worth another £30.00 if you've got the first version is another matter.

STF RATING 73 %

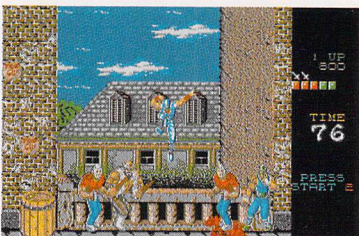
NINJA COLLECTION

Hello, I'm collecting for Ninjas. Could you possibly spare a shuriken or two? It's for a good cause... Yes, three old fighting games have got together, reminisced and re-released themselves in one box.

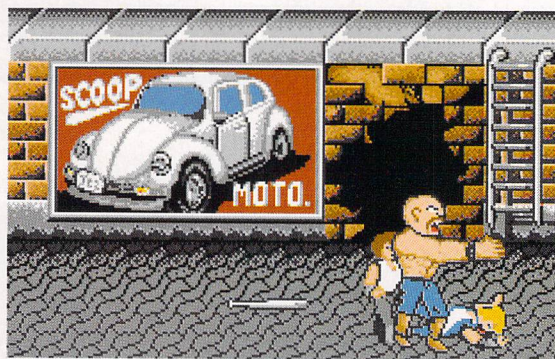
DOUBLE DRAGON

You play one of two brothers who, while out walking, get attacked by thousands of unrealistic people for no apparent reason whatsoever. You punch, kick and lipstick your way out of the problem, only to be confronted by more aggressors.

Colourful graphics, poor collision detection, girls with whips and just-visible breasts. It's all here. You just have to wait to see it. It takes



● Either *Shadow Warrior* has leapt to safety, or else he's fallen off a tall building onto some very angry men. Either way, his face is going to end up with a nasty set of bruises.



● If Frank Sidebottom attacks you, follow *Double Dragon's* example and lie still until he goes away. Do not, under any circumstances, engage him in hand-to-hand combat.

ages to progress because you have to whack each baddie a great many times before he eventually lies down and admits that death is finally inevitable. *Double Dragon* isn't particularly good, but it looks attractive though it sounds pretty strange. The ridiculous characters are a scream.

SHADOW WARRIORS

Here you must stealthily beat up several hundred shouting men with a dustbin. Tall order, eh? The idea is that you're avenging something, so you must make your way to the mystical right-hand-side-of-the-screen, killing everybody in the process.

The graphics are faster than *Double Dragon*, but are more flickery and not as substantial. There are the traditional range of ninja moves, all of which are being practised in schoolyards across Sussex as we speak.

The pace is commendable in *Shadow Warriors*. There's no hanging around. It's chop, kick, thump and bleed in a non-stop frenzy of

life-losing. Hmm. Yes, the pace. That's the best thing about this game.

DRAGON NINJA

Rescue President Ron, using your special ninja skills? Why should you? Er, well, you can have a box of Quality Street if you do.

That's the plot. *Dragon Ninja* is the fastest and most furious of the three games. Coachloads of men, all dressed in blue Anneka Rice-style boiler suits rush on and die when you kick them. Sometimes, men wearing red boiler suits come on. They die as well.

All this is quick and fairly smooth. But curiously, it doesn't have any atmosphere. It's just a sort of damage-limiting exercise. You know you're going to die, but take out as many of the Rice-fans as you can. Waggle the joystick, batter the <Fire> button and ignore the death of your soul as you try to get through to the next level.

VERDICT: Overall, the *Ninja Collection* is a selection of three pretty similar games. They're



● Fed up with his appalling puns, a couple of contestants assault Mr Dragon Ninja in a bid to free the oppressed masses who are in the lorry (and behind that wall).

all averagely terrible, but they're very fast, brightly coloured and involve plenty of violent killing. The only reason you should buy it is if you need that quick, colourful death gap in your life filled.

JAMES LEACH

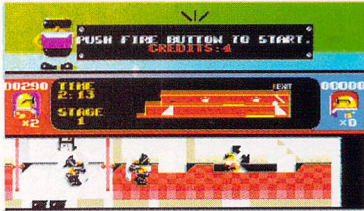
THE NINJA COLLECTION

OCEAN – £19.99

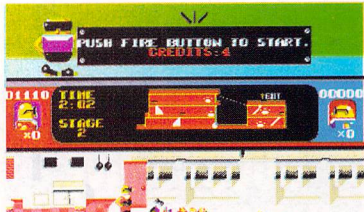
● All three games are of the same format. Forget variety. *Double Dragon* is the best-looking, *Dragon Ninja* is the fastest and *Shadow Warriors* is the one – er, most called *Shadow Warriors*.

STF RATING 53 %

BONANZA BROS



● When he reaches the top of the stairs, Robo does his world-famous impression of a plastic bottle. Those domeheads are never going to notice.



● Robo once felt very ill after eating three Cornish pasties. He's since been nursing a hatred for all pastry cooks.



● The fat chap with the bombs isn't in an especially friendly mood. Robo stands in the corner and tries desperately to think of a way to cheer him up.



● Robo (or Mobo, he was never sure) tried to be optimistic. In *Bonanza Bros*, you never know who is waiting behind the next door to You never know, one day it might be Terry Wogan.

— we need a plot. So Mobo and Robo, the cleverest thieves ever to be constructed from washing-up liquid bottles and double-sided sticky tape, have decided to throw in the swag bag.

One night, while waiting for the *James Whale Show* to start, the vertical hold goes all wonky. A strange man appears on-screen and asks you — Mobo and Robo — to test his security force. What you have to do is enter his buildings, evade the guards, guard dogs and traps and steal things. It's home from home — you get paid and there's no threat of jail hanging over your head. You take the job.

Bonanza Bros is a two-player arcade conversion platform shoot-'em-up. All you have to do is shoot down doors, stun the guards, grab the clobber and make your exit. It all sounds very easy but, of course, it isn't. The first couple of levels are dead easy —

the guards are so lazy that you have no trouble stunning them. Just make sure the guard's got his back turned before you shoot the door open and you can cruise through. Confident that you're going to be finished in no time, you start the next level only to find that the guards have got things a bit more sussed out and there are horrid traps just waiting to trip you up.

What's more, you find yourself trapped between two doors with rough guards on either side — just waiting for you to poke your tubular nose round the corner. As soon as you manage to knock one of them out, the other one shoots and make you drop your swag. These chaps just don't seem to realise that you've got a job to do.

VERDICT: Mobo and Robo are so crap they deserve to become complete heroes. All your adversaries look the

same — a big ball with legs and arms with a smaller ball perched on top. It's so bad, it's almost great. Almost, but not quite. *Bonanza Bros* is frustrating, ridiculous and fun. It's a tad too frustrating, so try and persuade somebody else to play with you and you can have a person to shout at, rather than just the screen.

LINDA BARKER

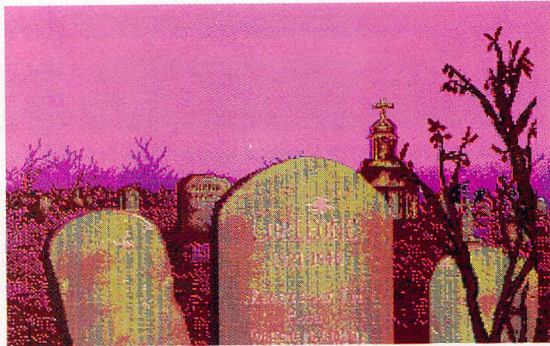
BONANZA BROS

US GOLD — £25.99

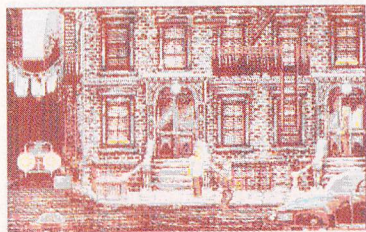
- Nifty platformer with two-player option.
- Completely ridiculous graphics that either makes you laugh or despair.

STF RATING **72 %**

THE GODFATHER



● Try not to end up in the dead centre of town — unless you want a lot of people under you. US Gold's *Godfather* is all about living slowly and dying in a hail, nay, a sleet of gunfire.



● As you stroll along, men with guns point them at you from all the windows, doors and vehicles in a two mile radius. Why didn't you think to bring your bullet-proof umbrella?



● The crucial word on the street is "Give Way," but the Corleones never ever yield to any man, unless he happens to have a more powerful handgun and an impenetrable accent.

Hrrm. Hrphmm. No, my Marlon Brando impression doesn't commit itself well to paper. So, then, *The Godfather*. A sprawling trilogy of movies with that music from the Castrol GTX ads. And this is? An arcade game. No family-controlling, no Sicilian kissing, no drug-importing. You just play Michael Corleone as he strolls through five levels of sparse gunfire — if he can survive the paltry shootings on these levels, he's fit to govern the Mafia in the USA. Fair enough.

Each level is packed with graphical detail. As you progress, you go through each decade from the '40s to the '80s. The detail of the backdrops is excellent, and Mike keeps stopping to study his fingernail collection.

Sadly, though, it turns the game into something of a slideshow. You walk very slowly, and the bullets fly like anaesthetised bumble bees. It's the wacky slow-motion world of *La Cosa Nostra*. This, presumably, is the price you pay for having such detailed sprites and backdrops.

VERDICT: The best things about the films are ignored. *The Godfather* is just a series of slow combat sequences where you have to kill people or avoid being killed. The graphics are gorgeous, and the intros, outros and other peripherals are superb. It feels like the point has been missed, though. You have to keep the Family alive, but you never get to do any of the great things they do, like frightening hamsters. Pity, because otherwise it's utterly beautiful to behold.

JAMES LEACH



● How upsetting — they've used pre-stressed concrete and I told them to use only quick-setting unstressed cement. We're going to have to build the whole thing again now.

THE GODFATHER

US GOLD — £30.99

- It's got elements of a very upmarket sideways-scroller like *Shadow Warriors* or *Double Dragon*, but the class oozes out.
- It's as slow as, well, as a Mafia-related slideshow, really.

STF RATING **62 %**

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DIZZY'S EXCELLENT ADVENTURES

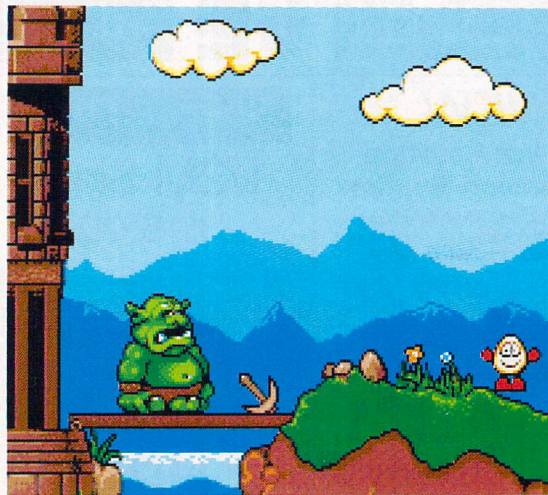


● What do you get if you mix an egg with hands and feet and half a pound of killer bee honey? Answers on a postcard to "I've got a good punchline" at the usual address. *Spellbound Dizzy* – home of bad jokes with too many yolks.

Oranges? Who needs 'em – eggs are much more – er, eggciting. Dizzy the bouncing egg is on the ST with his *Excellent Adventures* – a collection of games that have no relation to anything that eggs do in reality.

BUBBLE DIZZY

You're trapped at the bottom of the sea with sea creatures like Cecil the Seahorse. If you're going to survive, you have to get to the top of the sea because otherwise you run out of oxygen and drown. (Of course eggs need oxygen to live, how could they possibly



● The sky is blue and there are white fluffy clouds in the sky, so what could possibly be wrong? Well, Dizzy's got things to do, people to see, places to go – and all because he's *Prince of the Yolkfolk*. One of two arcade adventures in this five game nest of egggy activities.

DIZZY, PRINCE OF THE YOLKFOLK

The aim of this is to rescue Daisy from her 100 year snooze while avoiding the likes of Rockwart the Troll since he loves to eat eggs for breakfast. To do this, you travel through the countryside and across lakes collecting cherries for a pie. Along the way, you meet people and creatures – some give you advice, some are downright unhelpful – like the watchman who refuses you permission to land on solid ground telling you to go and get him something valuable – and some who need your help. A few of the puzzles are incredibly simple, but the rest are totally infuriating, especially



● You can either stand your ground like the hero that you are, or you can scarper. *Heimdall*, the Scandinavian RPG that sorts the men from the mice.

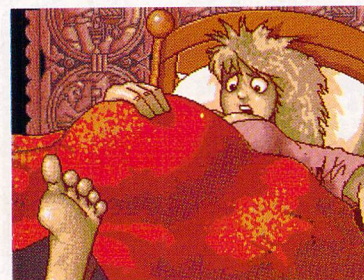
JUST TESTING

It's all very well being tall, blond and muscular, but it's not enough – you've got to be able to prove yourself before you set out. These are a few of the things you have to do...



● Here you have to chop as many plaits off as possible but you're slightly the worse for wear having been in the inn since 5 o'clock, so the axe tends to fly out of your hand and smash the girlie in the face.

HEIMDALL



● Ingrid was a very good girl, but a visit from the gods was too much even for a girl of her pious upbringing.



● Don't worry, this dastardly bunch of unshaven reprobates are your friends. As long as you make sure you're polite to them, they don't rip your legs off.

Vikings were just so gorgeous. Okay, so they might have been a bit keen on the old raping and pillaging, but you could put that down to high spirits and the survival instinct. When they weren't conquering new lands, they were eating pigs, drinking ale and plaiting their wives' hair. Honest. Another favourite pastime was telling stories. A favourite tale was that of *Heimdall* – a brave warrior with golden locks, a great capacity for beer and porkers, and the biggest horns this side of Oslo. His function in life was to save the gods from destruction by finding their lost weapons.

As *Heimdall* you must pass a few tests, choose a crew and set sail for dangerous and distant islands. Somewhere in this god-forsaken land are hidden the three weapons, but, before you can reach them, you have to run away from horrendous monsters and collect everything you come across.

Depending how well you do in the initial attribute tests, you have more crew members to choose from. Although you have five in all, you

can only take two of them with you when you land on an island. Each of them has his own strengths and weaknesses, so try and get as balanced a crew as possible. Ideally, you want brawn to snap the monsters in two, and brains to work out runic messages. Oh, and it's probably a good idea to have somebody who knows how to sail.

When you reach an island, disembark and have a look around – there might not be anything there, but it's best to make sure. Avoid the traps and pick up any food, gold and scrolls you come across. Examine the scrolls to see what sort of spell you've grabbed. You also come across chests. Now, these are a bit dodgy 'cos they might contain something useful, like a spell. Alternatively, they might contain traps. You are asked if you want to disarm the chest – if you've got the necessary spell, then you can use it. If there's no trap in the chest, then you've just wasted your spell. Food comes in handy later when the crew's rations have run out, but if you've collected enough food, then you can share it out and keep up your men's

since you can't move along any further in the game until you've solved them.

KWIKSNAX

An excellent puzzle. You run about moving blocks so you can eat the fruit to get points, move onto the next level and ultimately rescue the Yolkfolk. This is seriously good fun – you have to move out of the way of deadly creatures who manifest themselves as unpleasant things like skulls, collect the fruit, move the blocks that can be moved and try and trap the nasties (if you're keen and have the malicious inclination you need) within sets of blocks. You get bonus rounds, too, which are even better – all you do is go where the arrows tell you, manically eating the fruit in your way. Brilliant while it lasts, but it doesn't last that long.

For a different opinion of *Kwiksnax*, turn to issue 34 and see what adult Ed Ricketts had to say about it. Of course, if you don't have that copy of *STF*, go straight to page 44.

PANIC DIZZY

Remember that game you played when you were about two years old where you had to choose a coloured shape and put it into the corresponding hole in the lid of a tin? No? Well, you might when you see *Panic Dizzy*. That's it, really – you match the falling shapes to



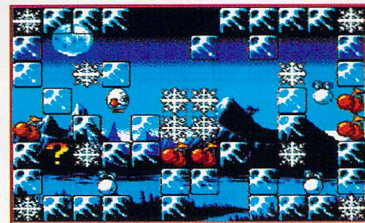
● **How could you possibly be so stupid? No way is that star going to fit into that triangular hole. It's the wrong colour for a start. Panic! Diz.**

the holes which scroll horizontally along the bottom of the screen. As you miss, chutes descend, so the shapes have a shorter distance to fall and you have to think – and co-ordinate – faster.

There's a two-player mode which is quite tough, too – you concentrate so hard on what you're doing you don't have a chance to realise how close you are to complete defeat. All in all it's pretty good for a quick couple of plays, but the absence of a bouncing egg may put real Dizzy devotees off.

SPELLBOUND DIZZY

Stupid Dizzy's gone and run the risk of getting himself and his yolk pals hard-boiled by reading out a powerful spell from Wizard Theo, which has, unfortunately, had the effect of banishing Theo and Dizzy's mates into the Underworld. To release them, Dizzy has to find a



● **Iceland in Kwiksnax. Eat those cherries and get frozen pushing those icecubes about. It's easy, it's entertaining and – er, it's got an egg in it.**

few stars and the like, travelling over vast lakes infested by hungry whales, into deep pits and across fields infested by killer bees. There are problems to solve along the way as well as things to pick up and conversations to have. It's pretty tough in places and sometimes even following the hints like – "try throwing a heavy rock on a cloud" is met with a distinct lack of a response.

VERDICT: If you're a hardened games player, *Dizzy's Excellent Adventures* isn't going to offer you anything new or exciting, mentally stimulating or addictive. But if you want something to lighten up your relationship with your ST, this collection is for you. All the games are easy to get into, attractive to look at with big, bold graphics and you can play them and get somewhere without too much trouble, so they're



● **Careful! That bubble's going to burst, and then where are you going to be? In Bubble Dizzy, smashed on the rocks at the bottom of the ocean, no doubt.**

satisfying too. The spark of originality in the uplifting *Bubble Dizzy* is also very refreshing. So, forget about eggs being bad for you – and get this.

PAULA RICHARDS

DIZZY'S EXCELLENT ADVENTURES

CODEMASTERS – £24.99

- Fantastic colourful cheerful graphics.
- Really there are only two types of game – puzzle and arcade – out of five.
- *Dizzy's Excellent Adventures* are for you if you just want some light relief or have a child-like short attention span.

STF RATING 82 %



● **Time to try your hand at a bit of pig-catching. It shouldn't be too difficult to catch a pig, but this one's more like a greased wild boar.**



● **When time runs out, pick yourself up, wipe the mud off and fight your way down to a longboat past a few vicious vikings and collect the gold.**

strength. Likewise, gold can be used when you come across shops.

As well as goodies, there are also some real nasties lying in wait for you. Get close to them and the combat screen appears indicating the health of your three characters and the monster. You can run away from some monsters but you have to fight others. Choose your method of combat – fist or sword – and fight. If you're successful, search the corpse for treasure and continue on your way. You've got loads of islands to get through, so it's best to be as organised and systematic as possible.

VERDICT: *Heimdall* is an engrossing role-playing game that should keep you occupied for ages. Until all your crew are wiped out, anyway. All the graphics are big, bold and colourful. If this is your kind of game, then there's hours of pleasure to be had from *Heimdall*. For those of a less patient nature, the disk-swapping might get a tad tedious. There are five disks and, although there's nothing difficult in taking one out and putting another one in, it does slow the game

down. It's extremely annoying to land on an island all ready for action and then have to wait a few minutes before you can carry on. But all in all, the chances are that you're going to have a brilliant time if you have a bit of patience.

LINDA BARKER

HEIMDALL

CORE DESIGN – £25.99

- A search and destroy role-playing game with absolutely tonnes to do.
- Unfortunately the action is slowed down a bit by the disk swapping.
- Great graphics and tough enough to give you a good run for your money.

STF RATING 78 %

SCANDINAVIA AS IT WAS THEN



- 1 It might not look much, but it is home.
- 2 Your longboat can't travel massive distances in one go. You have to be patient and take little steps at a time. Check out the nearest islands first.
- 3 If you try to land here from your original starting point, you are told that it's a difficult and dangerous journey. Even if you are the greatest warrior, you can't go.
- 4 Erm, a nasty monster. Eek!
- 5 Click here to access the Items screen and take a look at your men and what they're carrying. You can also choose your actions from this screen.
- 6 Click here and you are asked which island you want to visit. Click on your preferred island and, as long as it's not too far away, the breeze lifts your sails and carry you onwards.

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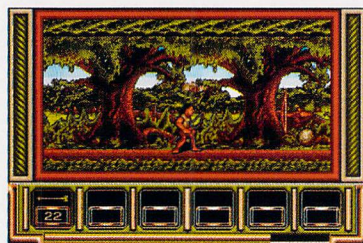
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● Oh woody woody wood, what do your woody branches hide? Arrows, rings, and apples, I bet. But not an enormous amount to do except get completely and utterly lost. *Obitus* in sanctus tempus fugit, frutum includum.



● Onto the parallax scrolling bit. Run left a bit, shoot at the baddies, run left a bit more. Sometimes, though, you have to run right. That's when it all really does get confusing.

OBITUS

Wil Mason was scared. Not only had he been transported to another world, full of goblins, trolls and apples, he was also stuck in yet another excruciatingly contrived plot with no way out except the Off switch.

Obitus is a game of many parts. Well, three parts. As Wil Mason, mysteriously etc. etc., you must find a way to leave Middlemere (the land full of apples) and return to Blighty, preferably alive and maybe even with another "I" for your first name.

First off, you need to negotiate your way through the forest, using a first-person view of its bowers and sylvan glades. This scrolls extremely smoothly

in 3D and uses some great lighting effects. Around the forest are arrows, men to fire arrows at, rings, cherries and, of course, apples. All can be picked up and any can be used, though obviously even a well-aimed cherry isn't going to fell a baddie.

When you eventually stagger out of the forest you're thrown into a horizontally-scrolling section full of more excellent graphics and superb parallax. Here the object is to run very fast (so you can see the gratuitous parallax) and shoot the nasties who pop up from the undergrowth. Assuming you found the arrows, that is.

What happens next depends on where you are. You may enter another 3D first-person bit, like the mine. Or you might enter a building, which leads to another graphical switch. This time you wander from room to room as per your standard RPG, finding more useful objects, killing baddies and marvelling at the lintels.

VERDICT: You may have noticed that words such as "superb," "marvellous" and "extremely" have been applied to the graphics, but not much mention has been made of the gameplay. Fair dos – there isn't any. Well, there's a bit, but it revolves around collecting keys, using keys, collecting arrows, using arrows to kill nasties, running, dying and getting lost.

In fact, *Obitus* is like a rotten antique table – a uninspiring collection of disparate game styles roughly slung

together and given a lick of excellent graphical varnish, all in a bid to disguise the mould beneath. No, all right, perhaps it's not really very much like an antique table, but it's certainly not much like a good game either. As Josiah Wedgewood once said, "This isn't really very good, is it?"

ED RICKETTS



● The mine is remarkably like the forest, only – er, darker, and more mine-like. You need to find a fire-brand to get in any deeper, or else the dark does what it's reknowned for and, like, stops the light getting in.

OBITUS

PSYGNOSIS – £25.99

- Lush detailed graphics can't hide the lack of anything to do beneath the surface.
- Calling it an RPG stretches the advertising laws just a tad.
- Calling it a collection of dull sub-games doesn't.

STF RATING 61 %

VIDEOKID

VideoKid is a game with a plot that confirms the worst fears of any parent when they see their dear kids watching hour on hour of *Robocop* and *The Terminator*. To wit, a small child watching a video gets sucked into the telly somehow and ends up battling his way around five worlds to get out again.

So we wearily begin yet another platform game. Billy, the bratlet, bashes his way around Medieval World, Western World, Science Fiction World, Gangster World and finally Horror World, being attacked in each by suitably designed monsters. In truth, this isn't really a platform game as such because Billy can hover wherever he wants to, without actually needing to use the platforms. The screen scrolls at a rapid rate in all directions and a large part of the game is knowing where you should be at any particular moment in order to avoid being squished in the screen scroll. There are only a limited number of exits to each area.

While you're frantically trying to beat the scroll, you have to contend with the legions of cute monsters that are firing at you from all sides, mobile ones as well as hostile parts of the furniture wanging vicious-looking spears and the like at you. Bonus weapons can be collected by shooting the spheres that occasionally float into view.

VERDICT: It's a bit 'ard. What with deciding where to go, avoiding the shots, trying to kill the monsters and looking for bonuses, you really need to be on the ball. The graphics are bright



● Seems to us they've left out the most obvious video category. Still, this is supposed to be a kid's game I s'pose. *Videokid* – it's dead hard.

and cutesy, though not specially well animated, and the chip noise is as bad as it ever gets.

What is most puzzling is the point of setting it inside a video. The setting bears absolutely no relation at all to what's happening on-screen, and obvious video effects like enabling you to replay and rewind haven't been included. Surely, if you're going to do a game

about video, then you should at least include some video-like features.

Unfortunately Gremlin have the knack of producing games that are competently programmed and good to look at but have no spark of gameplay interest to them at all. This is one of them.

ED RICKETTS



● No sweat? What are you talking about, no sweat? I've just been killed, you stupid four-eyed tot! Honestly, kids these days... I blame the comprehensive school system myself.

VIDEOKID

GREMLIN – £25.99

- Uncanny resemblance to *Mega Twins* in graphic style. Not surprising, really, since they're both by the same programming team, Twilight.

STF RATING 59 %

ATARI

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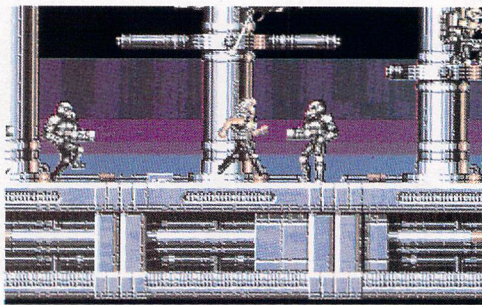
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WOLFCHILD

The wrinklies are here to stay – and they're getting wrinklier and more prolific. With advances in medical research this trend is set to continue – and in *Wolfchild*, it's helped by Kal Morrow, a leading scientist who has questionably improved the world by increasing the average human life by 40 years. He lives with his family on a remote island. Or at least he did until he went and got himself kidnapped by the international terrorist organisation, CHIMERA who also murdered his wife and eldest son. But Saul, his youngest son, was, by a happy stroke of luck since this is you, out doing a spot of oceanographic research. When you get home and find your mother's corpse, you resolve to avenge the brutal killers. Fortunately, Kal was a dab hand at writing genetic programs to create lycanthropic warriors, so you take the obvious course in view of your own wimpishness and turn yourself into a werewolf.

All this wibble is a pathetic excuse for *Wolfchild*, a not-especially-cutesy platform game played over five levels in different locations like on a boat and in the jungle. You start off as a human, but once you've picked up enough bonuses and kicked in enough radiators, your vitality bar goes above the norm and you get to be a wolf – the advantage of this is that your strength is massively



● **Wolf? Child? At the most he's an over-developed body-building adolescent. And anyway, surely children shouldn't be encouraged to get involved in platform shoot-em-ups that don't concern them.**

improved. Instead of just throwing a fairly pathetic punch, you get bullets coming out of your fingertips in various useful directions.

You do the usual stuff: exploring to collect bonuses for points, extra lives and vitality bar extensions, shooting things, punching fully armed vicious-looking exterminators – these die quite easily, actually – and leaping from platform to platform and over enormous walls. The game is totally joystick controlled and you have to be something of an expert waggler to get off the platform and over the walls without falling back to where you started from. Oh yes, and if you're a wolf, you can jump up and down on something which might break, so you can get at some other bonus underneath it.

VERDICT: Just an ordinary platform shoot-em-up, really, but remember – it's all in a good cause. If you finish the game, you'll have avenged the death of your family and rescued your father from the kidnappers – and that's important. The sound is nothing to get wound up about, the sprites are reasonably well-drawn and detailed although you might wish they were just that tiny bit bigger on occasions, then you could merely jump hard on your assailants and squash them instead of getting involved in unpleasant murderous stuff. All in all, it's okay if you fancy a quick bit of mindless violence, but for long term interest, there must be better things you could spend your time doing – like researching how to de-lycanthropise yourself.

PAULA RICHARDS

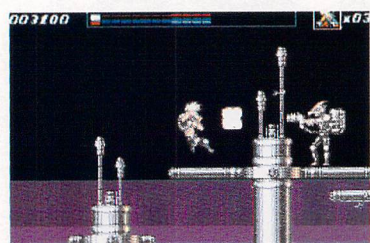
WOLFCHILD

CORE DESIGN – £25.99

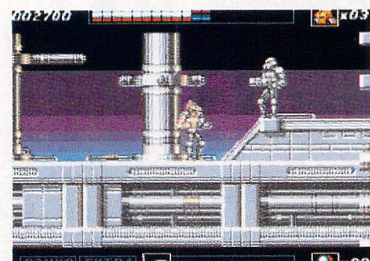
● There's nothing special about this shoot-em-up at all

● Nor is there anything especially bad about it apart from the plot.

STF RATING 61 %



● **Dear oh dear, you've taken a bit of a blow there, haven't you? Serves you right for just wandering around the boat and not concentrating on the tactics of the spaceman terrorist.**



● **"Hirsute? Me? No. I'm a wolf, you see, and I'm bigger and stronger and have got more powerful weapons than you. So there. Just put that gun down and listen to me, will you?"**

FORMAT RATINGS REVIEWED

How did **FORMAT** rate the games reviewed over the last three months?

| | | |
|--|-----------------|------------|
| ROBOCOP 3 | STF 34 | 94% |
| ANOTHER WORLD | STF 33 | 93% |
| LURE OF THE TEMPTRESS | page 86 | 92% |
| REVENGE OF THE MUTANT CAMELS | STF 34 | 92% |
| KNIGHTS OF THE SKY | STF 34 | 91% |
| RICK DANGEROUS | STF 34 | 90% |
| Germ Crazy | STF 34 | 88% |
| Pacific Islands | page 90 | 87% |
| Titus the Fox | STF 34 | 85% |
| Storm Master | STF 33 | 84% |
| Shadowlands | STF 33 | 84% |
| Dizzy's Excellent Adventures | page 98 | 82% |
| James Pond | STF 34 | 82% |
| Four Wheel Drive | STF 33 | 81% |
| Harlequin | page 94 | 79% |
| Dreadnoughts | page 88 | 79% |
| Sir Fred | STF 34 | 79% |
| Elvira the Arcade Game | STF 34 | 79% |
| Disciples of Steel | STF 33 | 79% |
| The Enforcer | STF 33 | 78% |
| Bonanza Bros | page 96 | 77% |
| Knightmare | STF 33 | 77% |
| Boston Bomb Club | STF 34 | 76% |
| Resolution 101 | STF 33 | 76% |
| World Rugby: Five Nations Edition | page 95 | 73% |
| Mystical | STF 34 | 73% |
| Special Forces | STF 33 | 73% |
| Heimdall | page 98 | 72% |
| Fantasy World Dizzy | STF 34 | 72% |
| Life and Death | STF 34 | 72% |
| Mindbender | STF 34 | 72% |
| Ultimate Golf | STF 34 | 72% |
| Voodoo Nightmare | STF 34 | 71% |
| Dizzy Collection | STF 34 | 71% |
| Subbuteo | STF 34 | 70% |
| Cyber Assault | STF 33 | 68% |
| First Division Manager | STF 34 | 67% |
| Thunderstrike | STF 34 | 67% |
| Toyota Celica GT Rally | STF 34 | 65% |
| Powermonger: WW1 Edition | page 85 | 64% |
| Gem'x | STF 34 | 64% |
| Race Drivin' | STF 34 | 63% |
| Unreal | STF 34 | 63% |
| Godfather | page 96 | 62% |
| Crime City | STF 34 | 62% |
| Jupiter's Masterdrive | STF 34 | 62% |
| Champions | STF 34 | 62% |
| Wolfchild | page 104 | 61% |
| Obitus | page 101 | 61% |
| Rotox | STF 34 | 61% |
| Combo Racer | STF 34 | 61% |
| Golden Eagle | STF 33 | 61% |
| Vengeance of Excalibur | page 93 | 59% |
| Videokid | page 101 | 59% |
| Paragliding | STF 33 | 59% |
| Venus The Flytrap | STF 34 | 58% |
| Manix | STF 33 | 55% |
| Firestar | STF 33 | 55% |
| Alcatraz | page 94 | 54% |
| Ninja Collection | page 95 | 53% |
| Brides of Dracula | STF 34 | 49% |
| Top Banana | page 85 | 48% |
| TNT 2 | STF 34 | 44% |
| Ghouls 'n' Ghosts | STF 34 | 44% |
| Space Gun | STF 34 | 32% |

Note: Games in red are reviewed in this issue

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NEW! Traffic Control Peterborough 1988 - On the busy East Coast main line, on a weekday in late summer, with lots of HST traffic to Leeds, Newcastle and Scotland. With the wires energised to Leeds, class 91 Electras are on test, and the solitary class 89 is also to be seen. Substantial freight traffic and regular cross-country services, some using the main line to Grantham, complicate your task. **Now available ! £15.95**

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The new **Deluxe** range of RAM expansions by Frontier for the older STFM must be the best available on the Atari. Expandable to 4 Mb by the use of 1/8/9 SIMMS modules, the 512k expansion is ideal for the user who may need more RAM later on. There may be similar products on the market, but when it comes to quality Frontier have few rivals.

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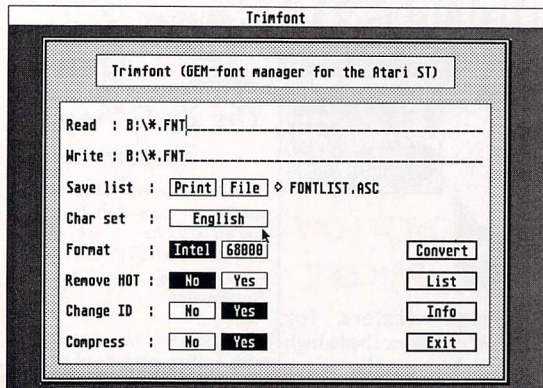
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So what's new?

Don't do it! Don't splash out on that new drive/utility/art package – until you've read **STF's** comprehensive reviews



● All of *Trimfont's* conversion options are easily set from this main dialog box, and you can use "wildcards" in the file mask to process a batch of font files while you put your feet up and read *STF*.

Cut to size while you wait

Trimfont 2

MACHINE: ALL STs, HIGH AND MEDIUM RES

PRICE: £9.95

FROM: THE ST CLUB

CONTACT: 0602 410241

One of the problems with GEM fonts is their size – they take up far too much room! Because they are "bitmapped" – that is, made up of little dots to define the shape of each character – there must be separate files for each "point size" or height of text. So the more fonts you have, the more disk space they take up, and this can be a problem even if you have a hard drive. "Vector" or "Outline" fonts don't suffer from this problem because just one file can hold the data for the shapes of the characters, and these can be re-scaled by certain software when you need to produce a particular size. Atari's new Font Scaling Module GDOS may solve this storage space problem eventually, but until it's fully available (see page 22) and implemented, what can you do? Font guru Jeremy Hughes has come up with the ideal solution in the guise of *Trimfont* and *Fontxpander*!

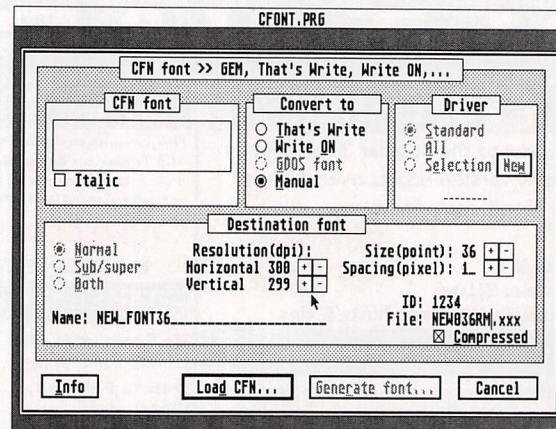
Put simply, *Trimfont* takes your existing GEM fonts and squashes them down to a fraction of their original size, enabling you to store many more of them within the same disk space. *Trimfont* now incorporates an improved method of font compression which is capable of compressing fonts by up to 90% of their original size. *Trimfont* can also read fonts which have been compressed by the previous method in version 1 of the software. The program

reads the original GEM fonts off any disk, and after compression writes them to the same or any other location you specify. Your software can then read and use these trimmed down fonts by the use of *Fontxpander*, a memory-resident program which automatically decompresses the trimmed GEM fonts whenever they are loaded by standard GDOS programs like *Timeworks DTP*, *Calligrapher* or the awaited new version of *That's Write*. Just pop *Fontxpander* (which is included as part of the *Trimfont* package) into an AUTO folder, and it does the necessary business automatically!

Trimfont is an ideal way to get plenty of fonts available for use in *Timeworks 2* if you only have a floppy drive ST system, considering they all have to be on just one disk. If you want to really get into fonts and font design, consider getting *Fontkit Plus* (£19.95 from the ST Club) – *Trimfont* is actually just part of the many utility programs which make up this outstanding suite of software. But if you just want to make more room for your fonts, *Trimfont* is a quick, cheap and easy way to do it, and the accompanying 12-page manual explains all its working in easy-to-digest detail. You can upgrade to *Fontkit Plus 3* later if you like.

PETER CRUSH

STF RATING: 89%



● *C-Font* can cleverly read the printer resolution for the new bitmapped font to be generated from your *ASSIGN.SYS* file, or you can set it manually using this main dialog box. Note the option for Compressed fonts like those produced with *Trimfont*.

Bit of all right

C-Font

MACHINE: ALL STs, MEDIUM AND HIGH RES

PRICE: £9.95

FROM: THE ST CLUB

CONTACT: 0602 410241

"Outline" or "Vector" fonts look much better than "bitmapped" fonts, don't they? Not necessarily! However nice the curved, smooth outlines of those vector characters look on-screen, when you print them out they are created on the page by what is essentially a bitmap device, the printer! Even the best quality laser printing is made up of dots (300 to the inch), so at the end of the day outline fonts get printed out as bitmapped fonts anyway! This means that technically Bitmaps can be as good looking as Outlines, but the public perception is that outline fonts are better quality. If you have a GDOS based program like *Timeworks Publisher* there has been no way of using outline fonts until now, but the release of a little program called *C-Font* has changed all that. Now you can convert *Calamus* .CFN format fonts to GEM format and use them within any GDOS application. One of the authors of *C-Font* is the ubiquitous Jeremy Hughes, so, as you would expect, this utility is completely compatible with programs like *Fontkit*.

For your money you get a disk with the *C-Font* program and a small printed manual. The program can be re-named *C_FONT.ACC*, and can then run as a memory resident Desk Accessory, which is a useful option for any program. Any outline font with a .CFN filename extension can be processed by *C-Font*, but you are cautioned by the

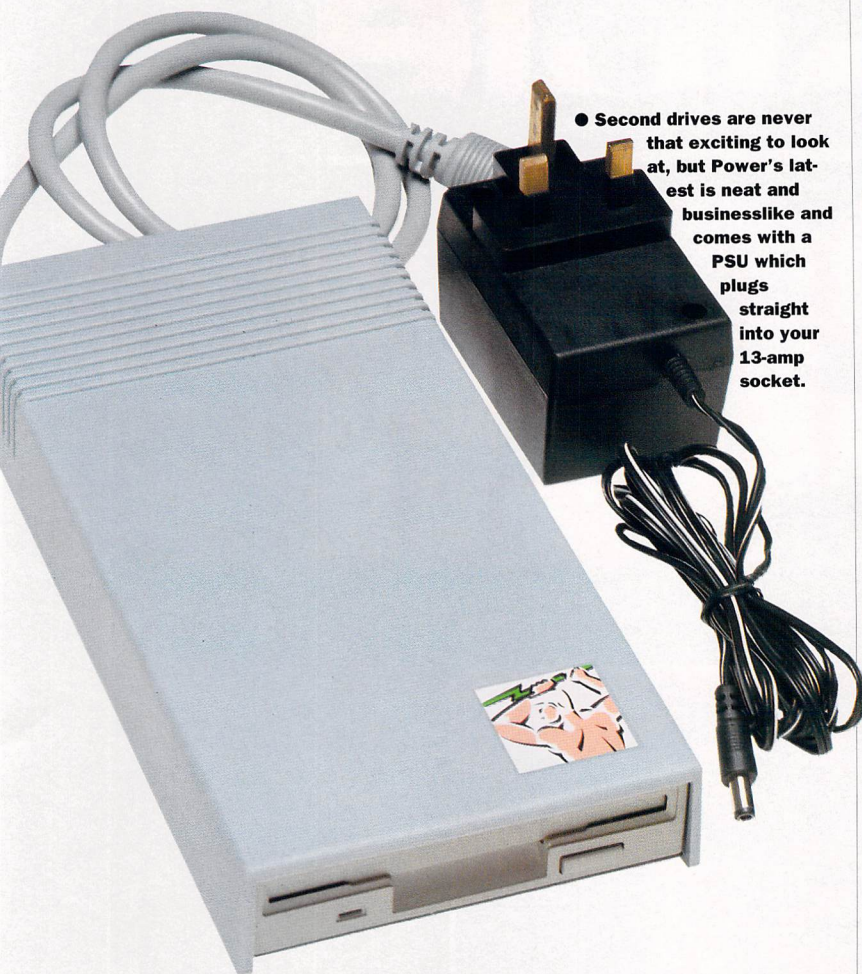
manual to only convert fonts when you have the permission of the original font's publisher. In practice any Public Domain *Calamus* fonts should be okay, but it's up to you to ascertain this. Some fonts are jealously guarded by their publishers, and you should be very careful about infringing their copyright!

C-Font is very easy to operate: the program enables you to load in the outline font that you want to convert and specify the "point size" (height) of the GEM font you wish to generate from it. The program then does all the calculations and writes the new bitmap font to the name of your choice. You can produce sizes of bitmapped fonts in a range from 1 to 99 points (there are 72 points to one inch) from just one vector font, thus increasing your font library in a very cost effective way.

C-Font is a very useful utility for those people who like to dabble with fonts, and opens up a whole new source of fonts if you use *Timeworks*, the expected upgrades of *That's Write* and *Write On*, or any other program that uses GEM fonts or GDOS. The manual is clearly written and the program uncomplicated to use. At under a tenner it won't break the bank, and producing fonts this way is bound to be a darn sight cheaper than buying them from many suppliers.

PETER CRUSH

STF RATING: 88%



● Second drives are never that exciting to look at, but Power's latest is neat and businesslike and comes with a PSU which plugs straight into your 13-amp socket.

Power to the people

PC720P external floppy disk drive

MACHINE: ALL STs

PRICE: £50.00

FROM: POWER COMPUTING

CONTACT: 0234 843388

Power Computing are well known for the many internal and external floppy drives they offer for the ST, and in a recent roundup (STF 28) we found that many of those on sale from other sources are in fact made by Power. This latest model is the external type for those owners who want to add a "Drive B" to their ST system.

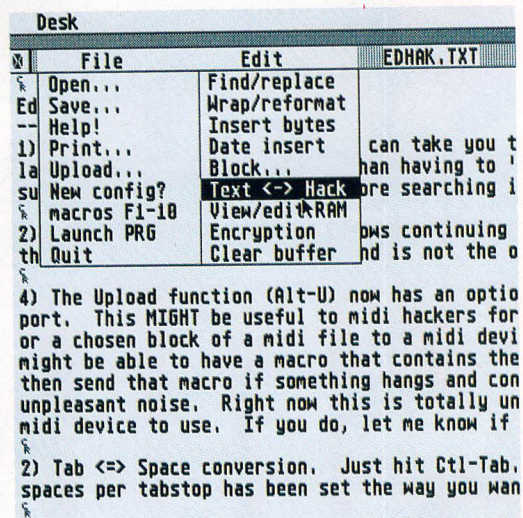
It has a separate external power supply unit rather than an internal transformer, and a good long lead connects the PSU to the back of the drive. The drive's casing is made of a grey coloured strong plastic material, and the base plate of the unit is metal. The neat assembly houses a 3.5 inch drive mechanism made by Sony, which ran nice and quietly under test. There's a small On/Off switch on the rear of the drive, and the usual LED on the front panel indicates when the drive is running. To connect the drive to your ST,

an attached 750mm long cable is provided, terminating in the 14-pin DIN plug that fits the Drive B socket on the rear of the ST.

The Power drive worked smoothly and efficiently, and when tested was capable of reading and writing to a maximum of 82 tracks. This is quite adequate, given that the ST's standard formatting process only uses 80 tracks. In common with some other floppy drives, this one insists that it is switched on or else it disables the ST from booting, making its On/Off switch rather redundant. This is not really a problem because you should always leave a second drive unit switched on anyway. As floppy drives go, this is a good unit, and if you've got 50 quid to spare, such a drive alleviates those annoying disk-swapping messages.

PETER CRUSH

STF RATING: 85%



● Details displayed from a ReadMe file in EdHak's window can be shown in Text or Hack mode. This is Text display with the carriage returns shown, but these can be turned off if you prefer.

Experienced hack

Edhak 2.25

MACHINE: ALL STs, ALL RESOLUTIONS

PRICE: US\$21.95

FROM: CLEAR THINKING

CONTACT: PO Box 715, Ann Arbor, MI 48105, USA

There are normally only six slots available for Desk Accessories, those memory resident utilities that can be called up and used from within any GEM program on your ST. So it makes sense to ensure that any DAs you have installed earn their keep and are as useful as possible. If you handle text much, either reading on-disk text files or writing short items like letters or notes, you may find that using a word processor is overkill, especially if you have to exit from the program you're using first. In these circumstances, the use of a DA text editor is just the ticket, and a little application called *EdHak* could be what you need. There is a Public Domain demo of this American program, but if you like it you can obtain the full version, and here we look at the latest version 2.25.

To use *EdHak*, you select it from the Desk menu on the menu bar like any other DA. You are then presented with a blank GEM-like window, with its own little drop-down menu giving access to various features, which are also available from keyboard shortcuts. Selecting "Load" from the menu (or <Alternate>-L) enables you to select a file for editing via the usual GEM file-selector, or any alternative selector like *UIS* (reviewed last issue). The file to be worked on then appears in the edit window, and using a cursor controlled by mouse or keyboard you can start to hack your text.

EdHak is an all-purpose editor, so you can edit not only text but also data, binary files, disk sectors and RAM, and it has the capability to enter or search and replace all 256 ST characters in Hex or Decimal. *EdHak's* capabilities as

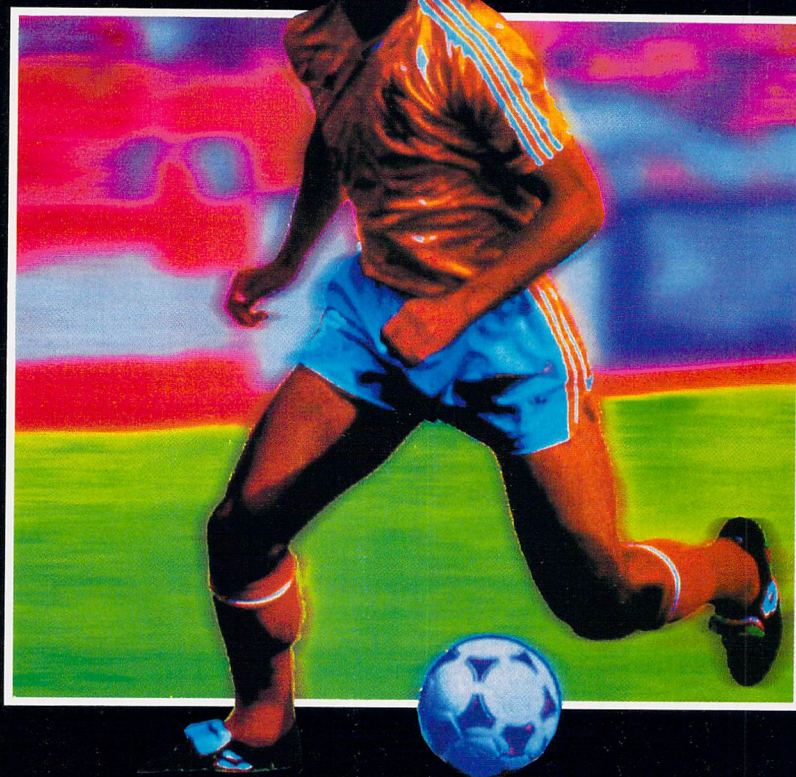
a text editor are quite good enough for simple word processing – you can easily create letters or even longer documents, but you cannot add any styling like Bold or Italic to your text, which is no disadvantage in many instances. Block operations on text like cut, copy, move and the rest are all possible. Your file can then be saved in the usual way to disk, including a RAMdisk, or it can be printed out directly to your printer. Ten "macros" of up to 80 characters can be defined and saved in a configuration file which is automatically loaded when you boot up, enabling you to insert often-used blocks of text – your address or the like – at the press of a Function key. Other options can also be set up in this Configuration file: margins, tab widths, line length, size of edit buffer and more.

You may only want to use *EdHak* to write short text files or as a disk text file reader, but if you fancy a bit of real hacking it comes into its own. There is probably nothing that you cannot load in and edit – but it helps to know what you're doing. You can also upload a file or text block to a Modem or the Serial Port, or even send messages via the MIDI port. When you switch to Hacking mode, all characters are displayed, as opposed to Text mode when just the more intelligible wordprocessing display is used. You can use *EdHak* to look at your floppy disks and examine the various sectors, but be careful not to inadvertently change any important data! *EdHak* is a trouble-free and virtually indispensable utility for the serious ST owner.

PETER CRUSH

STF RATING: 85%

Sensible SOCCER



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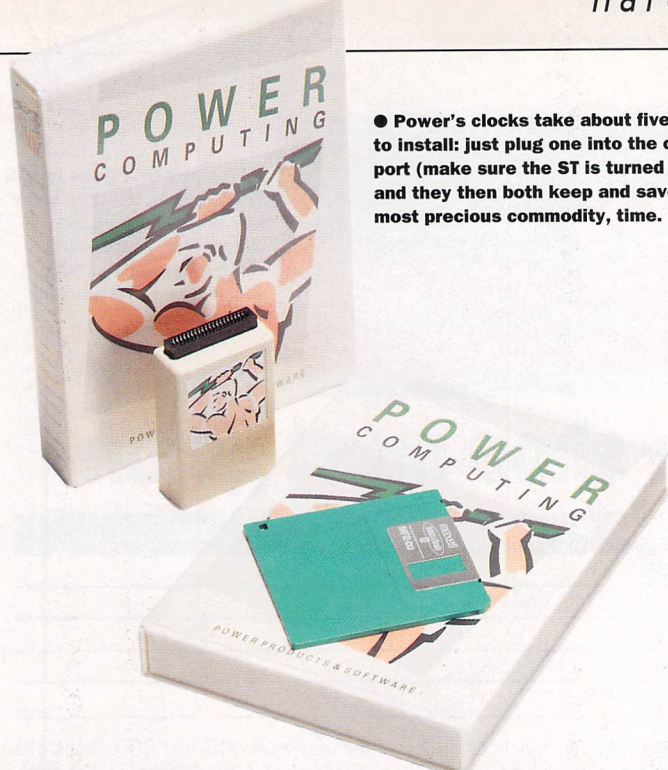
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- ★ TACTICAL ADVICE ON OPPOSITE TEAM
- ★ NAMED SCORERS



Sensible
SOFTWARE

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● Power's clocks take about five seconds to install: just plug one into the cartridge port (make sure the ST is turned off first!) and they then both keep and save you that most precious commodity, time.

Clocking-in on time

Power Clocks

MACHINE: ALL STs

PRICE: £14.95 / £19.95 with throughput

FROM: POWER COMPUTING

CONTACT: 0234 843388

When you boot your ST, you can set the system time and date manually by using the standard Atari Control Panel or any number of other similar Desk Accessories. This means typing in the correct time and date, and ensures that any files subsequently created are properly "date stamped" – invaluable when you are trying to keep track of many files. Unfortunately, setting the time manually is a bit of chore, especially if you re-boot between using different programs, so many people never bother. The easy way to solve this problem is to get a clock for your ST, so that every time you boot up, the correct time and date are set automatically for you. Clocks are fitted as standard in Mega STs, and many hard drives also have them built in.

If you have a standard ST or STE, your best bet is to use a cartridge clock. These are the easiest to fit because they simply plug into the cartridge port of your ST, involving no opening up of your machine. The market leader in this field is Frontier Software with their Forget Me Clock (£17.99 Frontier ☎ 0423 567140), but now some other contenders have entered the fray. Power Computing have recently released two such timing devices. Both Power clocks are housed in small creamy-grey coloured plastic cases, and plug into the cartridge port on the left-hand side of the ST. One version is equipped with a throughput,

meaning you can plug in further devices such as scanners, samplers and such like, and the clock should be "invisible" and not interfere with the second cartridge. The cheaper version has no throughput, but is otherwise very similar.

Each cartridge contains a small circuit board powered by a lithium battery, claimed to have a long life of five years. This little clock/calendar has to be "set" as you would set any ordinary watch or clock. You do this using a program supplied on the disk that comes with the package, and you don't need to touch it again until next autumn, when British Summertime ends. Another small program also supplied has to be placed in the AUTO folder of your Boot disk, which causes your ST to read the time and date from the clock when you start up, and enters this data into the system automatically. On an STFM these clocks have the advantage of resting nicely level on the desk, but on some other models the clock sticks out rather unsupported in mid-air.

A clock is not a luxury but an essential add-on for the serious user, especially the version with a throughput – you never know what other cartridges you may acquire in future. Both these clocks will save you a great deal of time and ensure that you remember the date for years to come.

PETER CRUSH

STF RATING: 80%



● The main screen of *Video Titler*. All functions of the program are easily accessed from this display, and the sequence of up to 50 title screens can be scrolled through at the top of the display. You may soon be creating five-minute title sequences that Francis Ford Copolla would be proud of.

You name it

Video Titler ST v2

MACHINE: ALL STs, LOW RESOLUTION

PRICE: £34.95

FROM: LASER DISTRIBUTION

CONTACT: 0579 82426

Picture the scene: after your ten week trekking holiday to Tibet, you've got 47 hours of video featuring your journey to the Dalai Lama's birthplace to edit. You want to put captions on the amusing scenes so you know which ones to send in to *You've Been Framed*. What do you use? A marker pen? Nah... *Video Titler*.

This new version of the *Video Titler* program from Laser enables you to create effective title sequences for incorporating into your home videos, whether they are holiday memories, a family wedding or an instruction or training video. You can record the titles onto video tape directly through the normal RF aerial lead, direct from the ST's monitor socket to the composite In socket of the video, or from the ST's monitor socket via a Genlock and then overlaid onto the videotape mixing your ST's output with the previously made video recording.

The program is simple to use and works by creating sequences of pictures and effects which are displayed across the top of the screen in frame order. You can then scroll back and forth through your entire sequence of frames to alter effects or delete or change screens. This information can then be stored as a script file, which can be saved to disk for future use. Title screens can be created by an external art package and then imported into

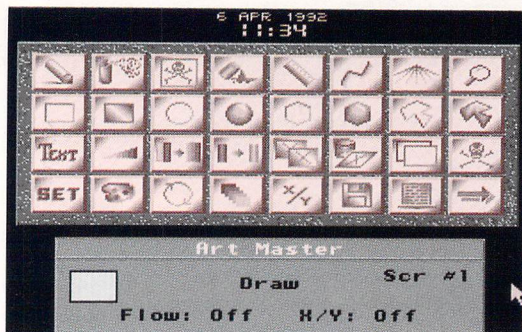
Video Titler, and text can be added to previously saved NEO or *Degas* pictures from within the package. Text can be entered in the normal system font, in normal GDOS bitmapped fonts or in the new FSM-GDOS fonts when Atari finally release it.

Pre-designed title screens are loaded into the program and appear in a small display on the left-hand side of the screen called the picture selection window. As many screens as memory permits may be held in memory at once and may be viewed by selecting the left or right scroll arrows to either side of the selection window. After you select a picture, you can choose a title effect from the Effects menu on the right-hand side of the display and insert it into the sequence by clicking with the right mouse button on the appropriate frame at the top of the screen.

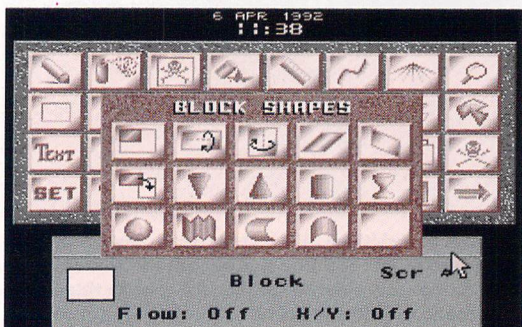
The program can cater for a variety of effects, from simple fades, wipes, dissolves and scrolls through to Venetian blind and interlocking effects. On a 520ST you are limited to about five frames of titles in memory at any one time, although you can still create sequences of up to 50 frames. This is a simple program to use and the manual is easy to follow. If you're an avid camcorder user, then you need this program to complete your masterpieces.

CLIVE PARKER

STF RATING: 79%



● The main menu screen from *Art Master ST*, showing – er, well, its main menu really. A series of easily remembered icons gives you access to the various functions.



● The sub-menu detailing the various shapes that *Art Master ST* can map blocks onto, including cones and cylinders.

● The main menu screen of *Art Master* cleverly mapped onto a cylinder, which can be an incredibly useful function. (Suggestions on a postcard to the Editor.)



New Master

Art Master ST

MACHINE: ALL STs, LOW RESOLUTION

PRICE: £29.95

FROM: LASER DISTRIBUTION

CONTACT: 0579 82462

Art Master ST is yet another drawing package for the ST and must fight to find a niche to occupy if it is to be a success among the wide range of drawing programs available. The program is designed to be easily useable by both experienced ST owners and newcomers alike. All its functions are available from the main menu by means of a set of 24 easy to remember icons. When an icon is selected the current drawing mode is displayed in a box at the foot of the main menu screen, along with the current drawing colour and screen.

All the normal drawing functions are present and work well, with accurate pixel placement made easy by the excellent magnify mode. The main feature of the program is to be found in the block menu. Once you have selected a block it can be wrapped around a sphere, various cones, cylinders and various user-defined shapes. Using this option you can create some quite stunning visual effects and paste them into your drawings. Even top-of-the-range packages such as *Deluxe Paint* do not include this type of feature. The only problem we noticed with the block function was the fact that the

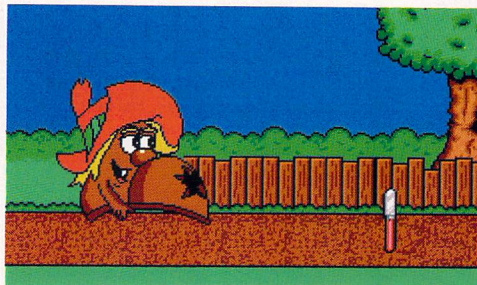
sphere generated was not in fact very spherical at all – it was more an elongated ovoid shape. Apart from this the program worked perfectly.

Art Master runs in low resolution colour mode only, but this is the only resolution most people work in for drawing anyway so this should not present any problems to any budding artists. Five file types are supported: *Degas*, *Degas compressed*, *IFF*, *Neochrome* and raw screen data. Information about the different filetypes is included in the manual for programmers to utilise in their own work. The program is one of the few drawing packages which offers support for the STE 4,096 colour palette – ordinary STs display picture files in the nearest equivalent colour from the 512 colour palette.

Art Master is an easy to use program coupled with a straightforward, no nonsense manual which is a good introduction to the world of art on the ST. Coupled with the block mapping effects, this makes *Art Master* a useful addition to any drawing utility collection.

CLIVE PARKER

STF RATING: 76%



● From the first game in *The Shoe People*. Now you know why there's always one shoe in the road: it's out visiting its friends. (Okay, you come up with a better explanation!)

The shoe must go on

The Shoe People

AGE RANGE: 4 – 6

MACHINE: ALL STs (LOW RES)

PRICE: £25.99

FROM: GREMLIN GRAPHICS

CONTACT: 0742 753423

At first glance, this package looks like a *Fun School* clone: there are six games and a choice of levels of difficulty for most of them, the screens are colourful and there are some interesting sound effects. Once you start to use it, you realise that this is not merely a "Son of *Fun School*," and that it does have unique features of its own. For a start, all characters involved are shoes!

The first section, *Trampy visits his friends*, has a simple "game plan": on Trampy's travels he comes across various objects and you have to do a matching exercise with them. Now, most matching programs restrict themselves to matching identical objects or finding the odd one out, and this is where "Shoe People" comes into its own. There are, a mind-boggling eight different types of matching exercise, like selecting from words which have similar beginnings or similar endings. Two spelling games are also included.

In *Sgt Major sorts it out* you match colours, shapes, coloured shapes or patterns, either with some help (the easy level) or without (the hard level). There is some humour here: when you select the wrong object the Sergeant-Major scowls and taps the correct one with his baton!

Margot's Colouring Book is an elementary painting package. It doesn't do much, but there's certainly no harm in having it there.

The Great Alphabet Robbery is to do with words and letters and you can work with "small," "medium" and "big" words. Apart from the matching exercise, where you match lower and upper case letters (a good idea because kids often learn lower case letters first), the point of the game is to work out anagrams from the jumble of letters shown on the screen.

This is where the program falls down: as it explains in the manual, some correct words are "marked" wrong when the program doesn't recognise them. For example, "dgo":

the answer is DOG, not GOD. Since this can be extremely confusing for a child, it's better not to bother with this game at all. After all, the whole point of learning with your ST is instant feedback. If the feedback is just plain wrong, what's the use?

Wellington goes to the Party involves counting and addition, but presented in an unusual way: blocks or dice are on a see-saw, and you have to balance the see-saw by selecting the correct object or figure from the range presented. It helps the child get to understand that, say, four dots is the same as "4."

Finally, *Charlie's Big Day* is another matching exercise: you're shown a trick or series of tricks being performed and then, depending on the difficulty level chosen (out of three), you either state which tricks were performed in what order or predict what the next trick will be too. The Medium level is quite brain-taxing because the tricks are presented more randomly than in the easy level. A wrong answer gets a bucket of water thrown over the trickster, or a pie shoved in his face. It's worth getting it wrong just to see that!

One of the very good aspects of the package as a whole is that you can get back to previous levels simply by pressing <Esc> – much more friendly than having to reset your ST.

A great deal of thought has gone into this. Many similar packages seem to pay lip service to education, but this one is based on sound principles. There are one or two niggles, like using capital letters for the on-screen instructions and options, and you would certainly need to be there to explain to your child why a particular answer is right or wrong. But on the whole, this is a sound, educational and fun program.

Contents: Two disks; 28-page manual; Picture disk labels; book: *The Mystery Tour* (no – we couldn't figure out why either); button badge

TERRY FREEDMAN

STF RATING: 76% ➔

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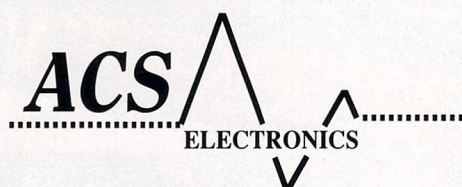
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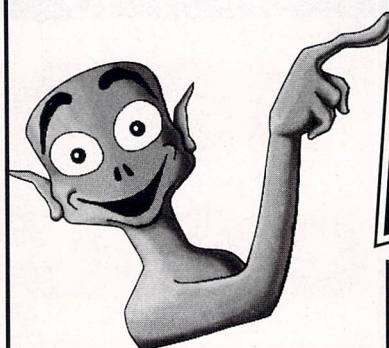
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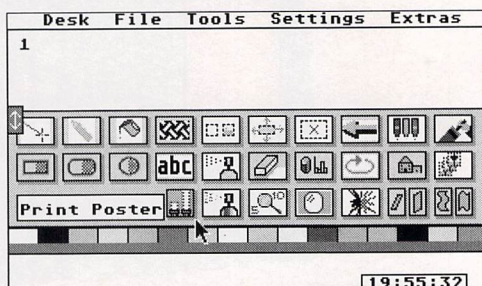
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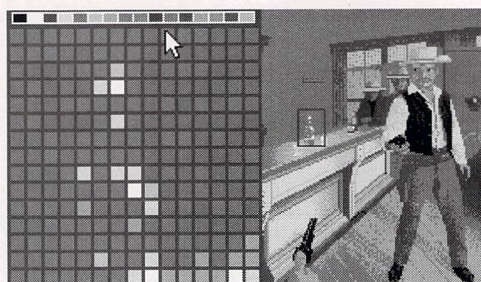
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PUBLISHING





● Move the mouse pointer over *Paintpot's* Toolbox icons and their functions are displayed in a text window. This icon produces a large "poster print-out" of your picture on a range of dot matrix machines.



● Using *Paintpot's* magnify feature the left side of the screen displays the selected area, here the bottle, for easy editing using the mouse pointer. Note the colour palette available to change the pixels with.

Pots of features

Paintpot

MACHINE: ALL STs, ALL RESOLUTIONS

PRICE: £14.95

FROM: SWITCHSOFT

CONTACT: 0325 464423

Paintpot is a user-friendly drawing and painting program for the ST. It has been improved over the years to support the STE and has other features like the ability to produce huge banner-like printouts of your pictures. Incorporating all the features of the better known packages, *Paintpot* is easy to use, and the latest version comes on a double-sided disk with plenty of sample pics. *Paintpot* runs in all screen modes. In low res it displays a palette of 16 colours; in medium res it works in black and white only, enabling users with a TV screen to see something approaching the usual high res screen mode – which is also available if you run *Paintpot* on a high-res mono monitor. *Paintpot* is compatible with *Degas* and *Neochrome* files, enabling you to load images in these formats and work on them. The finished pictures can be saved in either of these formats or as .IMG files. The program runs under GEM and supports Desk Accessories, although it is advisable to turn off the on-screen Toolbox in *Paintpot* when using a DA. If you have a 520 ST, two workscreens are available to draw on and nine are available on a 1040 ST. You can copy part or the whole screen from one screen to another by cutting and pasting.

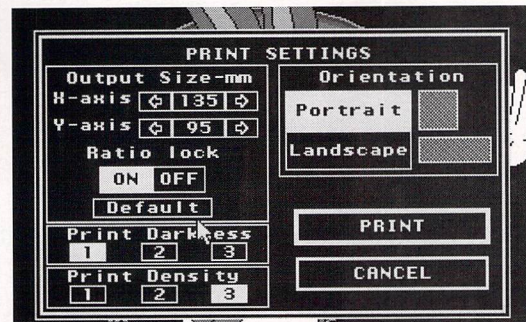
You call up the Toolbox by clicking on the right mouse button (just as you do in *Degas*). The icons are attractively designed, and a helpful feature is that when you move the mouse pointer over an icon, its function is displayed via text in a window in the toolbox. All the usual drawing tools are there: cut and paste,

copy and paste, freehand drawing, an eraser, boxes, circles, fill, and so on. You can create pie graphs and bar charts, and import text files in 1st Word or ASCII format as well as input text of up to 35 characters in a variety of sizes and styles. The program supports GEM fonts, enabling you to use these from other programs or Public Domain sources, without having to use GDOS.

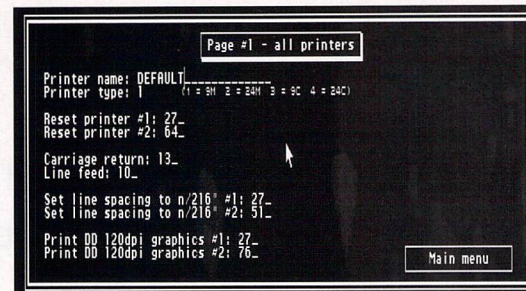
You use the familiar "rubber-banding" feature when drawing lines, boxes and such, but there is a useful extra dimension. Instead of clicking and dragging to define the line or object, if you click, release, then move to the finish position, the same rubber-banding occurs without dragging, and the line or box can be moved about on-screen by using the arrow keys before fixing its position with a final mouse click. This allows very accurate placing of the line, and its length is still adjustable during this process until the final click. This "displacement" feature works on lines, boxes, ellipses and Objects (pre-drawn groups of lines or shapes which can be loaded from disk). The drawing tools are also accessible from the four drop-down menus on the menu bar, and they also control the other more complex operations of *Paintpot*, enabling you to customise features to suit and save these as default settings. If you are looking for an easy to use and friendly paint program, *Paintpot* does all you need though it doesn't offer any more than *Canvas*.

PETER CRUSH

STF RATING: 72%



● *IMPrint's* Print Settings dialog box. Here you decide whether to print out longways, sideways or backwards, and you get to control the prints of darkness.



● One of the simple forms you use to create your own personal printer driver. Just fill in the spaces and hand it back at the desk when you've finished.

Prints of ease

IMPrint

MACHINE: ALL STs

PRICE: £15.95 for colour printer version, £10.95 for mono printer version

FROM: zzSoft

CONTACT: 0254 672965

The worst thing about creating graphic masterpieces on your ST is often trying to print them out. *IMPrint* is a printer utility which enables you to produce quality mono or colour printouts in the same fashion as *Flexidump Plus* (£39.95 Care/Zitasoft ☎ 0923 672102). The program happily deals with 9-pin and 24-pin printers and can import pictures in all the popular file formats – *Degas*, *Degas Elite*, *NEO* and *Tiny*. It works in any resolution and converts pictures from one resolution to another, automatically grey-scaling colour images when transferring them to high res. There is a loss of output quality when converting pictures from high res, because four high res pixels are replaced by one low res pixel. Generally the picture handling is good.

There are four printer drivers provided: 9-pin and 24-pin mono Epson drivers, a Star LC-10C 9-pin colour driver and a Star LC24-10C colour driver. They can be loaded when you're using the program from the Print menu, enabling you to switch between printers. If you're unlucky and none of the supplied drivers works with your printer, then you can use the Printer Driver Maker program from the disk – with your printer manual at hand and following the on-screen prompts, creating the printer driver takes no more than a few minutes from start to finish.

One feature not usually found in printer dump utilities is a drawing toolbox. Although basic, it provides enough

drawing tools to enable you to make last-minute alterations to your pictures before printing them out. Functions include frames, draw, lines, fill, text, boxes, circles and cut and paste. The text feature may be useful if you wish to add comments to drawings before printing. The Options menu gives you access to the various design functions, including text styles, picture conversion between resolutions and direct colour to mono greyscale conversion for enhanced mono printer output.

When printing you can select between the Full Screen option or the Use Mouse option to crop a section of the screen to print. Full Screen takes you directly to the Print Settings dialog, whereas Use Mouse switches to the workscreen where you can draw a box around the section of the picture you wish to print. Once it's selected you move to the Print Settings dialog box, where you can select portrait or landscape printing, the printout size and the darkness and density of the printout.

There are a few quirks which need tidying up – *IMPrint* looks for files in the root directory of drive A, not inside any folders (which is a pain when you're printing lots of pictures), and it tends to clash with some Desk Accessories, but it is a good basic printer dump utility, with a concise manual, and should satisfy anyone who can't print out in colour from within an art package.

CLIVE PARKER

STF RATING: 66%

Can you really take the Russell Grants of this world seriously? All that wibble about the stars affecting people's lives. Just because you were born at a certain time some dude in a silly sweater can tell you what kind of day you're likely to have? The horoscopes in the newspapers purport to predict things for a twelfth of the population. Come on, it's a load of old tosh, isn't it? Serious astrologers would agree – newspaper horoscopes are wildly inaccurate. It's much more complicated than that.

The basic principle of astrology is that we live in a holistic universe – there is an inter-relationship between the whole and all the disparate little bits in that whole. At the moment of birth we embody the universe focused at that point of time and space. Astrology uses the positions and relationships of the planets, sun and moon as a reflection of the forces acting on you at that moment to throw light on your basic desires and needs. Each planet represents an aspect and the relationship between them gives an insight into your character. It's not about predictions – it won't tell you what's going to happen next week.

It's more about your psychological make-up – so it may tell you how you are likely to deal with next week.

This is still a load of old tosh, isn't it? How can our characters be influenced by the positions of the planets at one point in time? It just doesn't make much scientific sense. It's easy to be sceptical – particularly for Aquarians. Oops, what a giveaway. Why not put it to the test? Find out for yourself if it does have any validity!

The first step is to build up a map of the heavens at the subject's time of birth. This used to involve a mass of books and tables and take hours. Just the job for your ST! With a decent astrology program you can just enter the birth data and the little wonder works out all the tedious bits for you. By a strange twist of destiny there's just such a program on this month's Cover Disk – *Astrocalc 22*. See page 19 for full details.

Before you get calculating you need to know the time and date of birth and the longitude and latitude of the place of birth. A good atlas comes in handy here. One more bit of information you need: was it

British summer time? The time difference tends to muck up your chart. Also on the Disk is a handy file to check this out!

Your ST then struts its stuff and your birth chart is calculated. It's now ready for a spot of interpretation – that is, figuring out what it reveals. The planetary positions reflect various traits and characteristics and the job of interpretation is a skilled one – there are zillions of factors to consider. A machine is never going to be able to replace the personal touch, but your ST can make a damn good job of it. Professional astrologers from the Association of Professional Astrologers make use of the ST, along with the right bit of software, to produce personal chart interpretations.

A chart interpretation is never going to fully reflect the complexities of an individual human character or be unerringly accurate, but you're likely to recognise a lot of yourself in it. It does give a fascinating insight, and even the most hardened of critics has to admit there is something in us that reflects the heavens and something in the heavens that reflects us. Cosmic or what?

1 THE SIGNS OF THE ZODIAC
There are 12 signs of the zodiac around the edge of the chart, dividing the sky into 12 "houses." Your sunsign – more popularly known as starsign – is dictated by which house the sun is in at your birth. Your sunsign forms the central part of your chart and gives the general direction to the interpretation.

2 THE ASCENDANT
This is the sign that was rising over the horizon at the time of your birth. It is like a second sunsign and has a strong influence on the reading of the chart. The ascendant sign shows the way in which you approach life in general – your persona. The position of the ascendant dictates the positions of the 12 houses.

3 THE PLANETS
The sun, the moon and each of the planets represent specific

functions, drives or urges within the total personality. The positional relationship between the planets shows how these forces interact. The outer planets move so slowly through the chart that they refer more to the generation in which you were born rather than individual characteristics. The sign in which each planet lies modifies its influence. They appear on the chart as glyphs.

4 THE HOUSES
The chart is divided into 12 houses, the first house starting at the ascendant. The sign which is in the seventh house is the one that was setting at the moment of birth and consequently represents the horizon. Each house represents a specific area of life experience. The houses that the planets are in indicate whereabouts in your life you are likely to meet the principles that are expressed by the planets.

5 THE ASPECTS
Lines are drawn on the chart indicating the aspects – relationships between the planets. The relative positions of the planets indicate the flows of energy between them. If the planets are in the same place then the energies are merged together. If the angles between them are 120 degrees (trines) or 60 degrees (sextiles) then there is an easy flow of energy, so that the different aspects of your personality work harmoniously together. If the angle is 90 degrees (squares) or 180 degrees (opposition) then there is some inner conflict and stress.

This is extremely oversimplified – a chart that's composed of flowing aspects may lead to a lack of direction in life – which doesn't sound so pleasant as inner harmony, while one full of conflict may lead to positive forces like great inner drive and achievement.


 **The Sun** – Real self, power, pride, conscious aim, vitality
 **The moon** – Subconscious, habits, moods, emotions, childhood
 **Mercury** – Mind, logic, communications, ideas, restlessness
 **Venus** – Love, beauty, art, relationships, harmony, women
 **Mars** – Energy, self-assertion, impulse, force, urges, men
 **Jupiter** – Expansion, enthusiasm, wisdom, learning, release
 **Saturn** – Restriction, self-control, obstacles, perseverance
 **Uranus** – Deviation, individuality, progress, science, shock
 **Neptune** – Idealism, creativity, dreams, mystery, occult
 **Pluto** – Regeneration, rebirth, underworld, crisis, obsession

HOROSCOPE AND ZENER

£2.50 Riverdene PDL ☎ 0734 451239
– Disk 512

Enter your birth date and you're given your sunsign, a few general facts about your this sign as well as a few simple predictions. Along with this program comes a weird one called *Zener*, which is a guessing game that's designed to test your ESP rating by trying to suss shapes. Strange brew indeed.

STF Rating: 64%

 Your Star Sign : Aquarius
Sign Zone : 21/ 1 – 19/ 2
Date of Birth: 2/ 2/ 63

Please select one of the following

1.. A Character Profile
2.. 1990 Prediction
3.. Calculate Sidereal time
4.. Enter new Date of Birth

● **Horoscope is a very simplistic look at sunsigns – it really only scratches the surface.**

I CHING

£1.45 ST Club ☎ 0602 410241 – Disk 145

An ancient Chinese divination on your ST, the program throws the coins for you or you can throw real ones yourself and enter the results. It then figures out the hexagram for you and gives a quickie interpretation. Also on the disk are a biorhythm program, a program to figure your lucky number and a Chinese horoscope program, as well as a couple of utilities. The Chinese horoscope is based on the year you were born – something to do with the 12 animals that answered the calling of Buddha.

STF Rating: 70%

● **After chucking your own coppers, I Ching shows you the hexagram and gives a brief interpretation. Not the most in-depth program, but it demonstrates the basic use of the I Ching.**

 KUEI MEI – The Bride

Do not confuse impulses with feelings. Before you commit yourself, make sure that your commitment will be repocated and be steadfast in your choice.

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£100.00 Magic Space ☎ 0252 703886

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STF Rating: 90%



READING THE RUNES

There's a mass of books on the subject of astrology, ranging from the horoscope-style popularist crap to the ridiculously complicated professional tomes. There are also a good few weird and wacky ones. If you plan to explore the world of charts, aspects and signs, then these books are recommended reading.

ASTROLOGY FOR LOVERS

Liz Greene

Unwin £5.99

A look at the characteristics of each sunsign, with special emphasis on relationships and

love. Each sign of the zodiac is examined, with a potted character analysis. It makes an entertaining read, but it doesn't get involved with the complexities of the birth chart itself.

DISCOVER ASTROLOGY

Cordelia Mansall

Aquarian Press £7.99

Straightforward introduction to astrology. All the basic elements are explained, including the symbolism of the zodiac, the meanings of the houses and their significance. It shows the basics of chart interpretation and gives brief explanations of what the positions of

the planets indicate. A painless introduction.

HOROSCOPE SYMBOLS

Robert Hand

Para Research £16.95

An in-depth look at the fundamentals involved in a birth chart – the planets, the angular relationships and zodiacal positions. The emphasis is on the primary forces involved.

HOW TO INTERPRET A BIRTHCHART

Martin Freeman

Aquarian Press £4.99

Once you've compiled a birth chart there comes the interesting bit of interpreting the result. This is a simple introduction to the process.

THE MODERN TEXTBOOK OF ASTROLOGY

Margaret E Hone

Fowler £7.95

A plain-speaking introduction to the birth chart. You can calculate charts and get the fundamentals of interpretation as well as background information on the whole subject of astrology making this a good book to start with.

NEW COMPLETE ASTROLOGY FOR BEGINNERS

Julian and Derek Parker

Mitchel Beazley £10.99

Covers all the basic aspects and principles of astrology. Nothing is taken to any great depth. A good book for the complete beginner.

WIN THE LOT

We've come over all generous and decided to give away the complete set of books listed here. If you're planning to get involved in astrology, then this lot'll set you up, no problem. How do you win? Just send us a postcard or a stuck-down envelope listing all of the signs of the zodiac. Easy-peasy, eh? Address your entry to I Can See Into The Future, ST FORMAT, 29 Monmouth Street, Bath, Avon BA1 2DL. First correct answer out of the hat on Friday 10 July wins the whole caboodle.

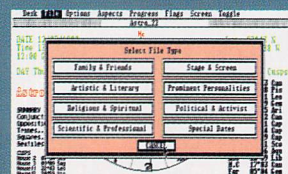
CHART YOURSELF

On this month's Cover Disk is the decidedly clever number *Astro 22*, which can calculate and draw your birthchart on-screen. It can work out the positions of the planets, zodiac positions and cusps to within 30 seconds of an arc. (A cusp is the notional line that marks the beginning of a house.) Once you've prepared your working copy – see page 19 for how – you are ready to go. The hard part of astrology, calculating the chart, is all done for you. The greyed-out options on the menus are disabled – they're for use with the add-on modules available from the author. The sexiest of these is the interpretation module that examines your chart and gives you a few low-downs on your character. Normally the module would entail a tanner in the post, but we've managed to blagg it for the Cover Disk. The only disadvantage is you can only output the results to screen. For details on getting the full version and other goodies take a look at the text file AD_ONS.DOC on the Disk – just double-click on it and select Show to display it on screen.



● *Astro 22* calculates your birth chart – you just need a few facts. Select New Chart from the Options menu and type in the information. Use the mouse or cursor keys to change categories. You need a good atlas for the latitude and longitude. The normal time zone for the UK is +/- 00; for other places, enter the time behind or ahead of GMT. To find out if it was BST or not, look at SUM_TIME.DOC on the Cover Disk and see if you need to adjust the time. If the date falls between those listed, type in the adjustment. In high res under Options you can check time zones around the world.

● The chart in all its glory. Making head or tail of it takes time. Don't expect solid answers on life's questions. It's more a pointer towards attitudes and drives.



● There's a selection of famous and infamous people's charts to load in and gawp at. Select Load from the File menu, click on one of the categories, then select a character.

● The flashy bit – interpretation. Select Textual Analysis from the Options menu. The positions of the sun, moon and planets are examined to show up character traits and personal make-up. Sounds a bit weird? Try doing your own chart and taking a look. You may be surprised how much seems to fit in. You may learn something too.

ASTROBASE REPORTWRITE

£150.00 Magic Space ☎ 0252 703886

A heavyweight of a program, with more features than you can shake several sticks at. It produces a complete and detailed natal chart and enables you to add in your own interpretation before printing. Included is a comprehensive atlas and an automatic British summer time checker, plus other fancy bits. For another ton and a half there's a report text writer which can produce a comprehensive interpretation. Included in the price is a licence to sell the finished reports. This is the business for professional astrologists.

STF Rating: 90%

● Astrocalc ☎ 0442

251809 also produce

a wide range of astrological software from

straightforward natal chart calculators to more

complex and obscure chart analysis programs. Prices

range from £18.00 for the basic natal

chart calculation program to lots

more for the full interpretation job. Everything for the

amateur to the professional

astrologer.

FUTURE SHOCK

Western style astrology isn't the only method of divination, and it's far from the oldest. The I Ching is at least 5,000 years old and throws light on the whole ethos of ancient Chinese philosophy. It is a book of oracles containing the whole of human experience. It can be used for divination using the symbolism of hexagrams created by throwing coins – these give one of 64 patterns, which can then be interpreted. The idea is that these tap into the subconscious by forming a reflection of the situation when they were cast, guiding the seeker towards a solution to difficult problems. The approach of the Chinese

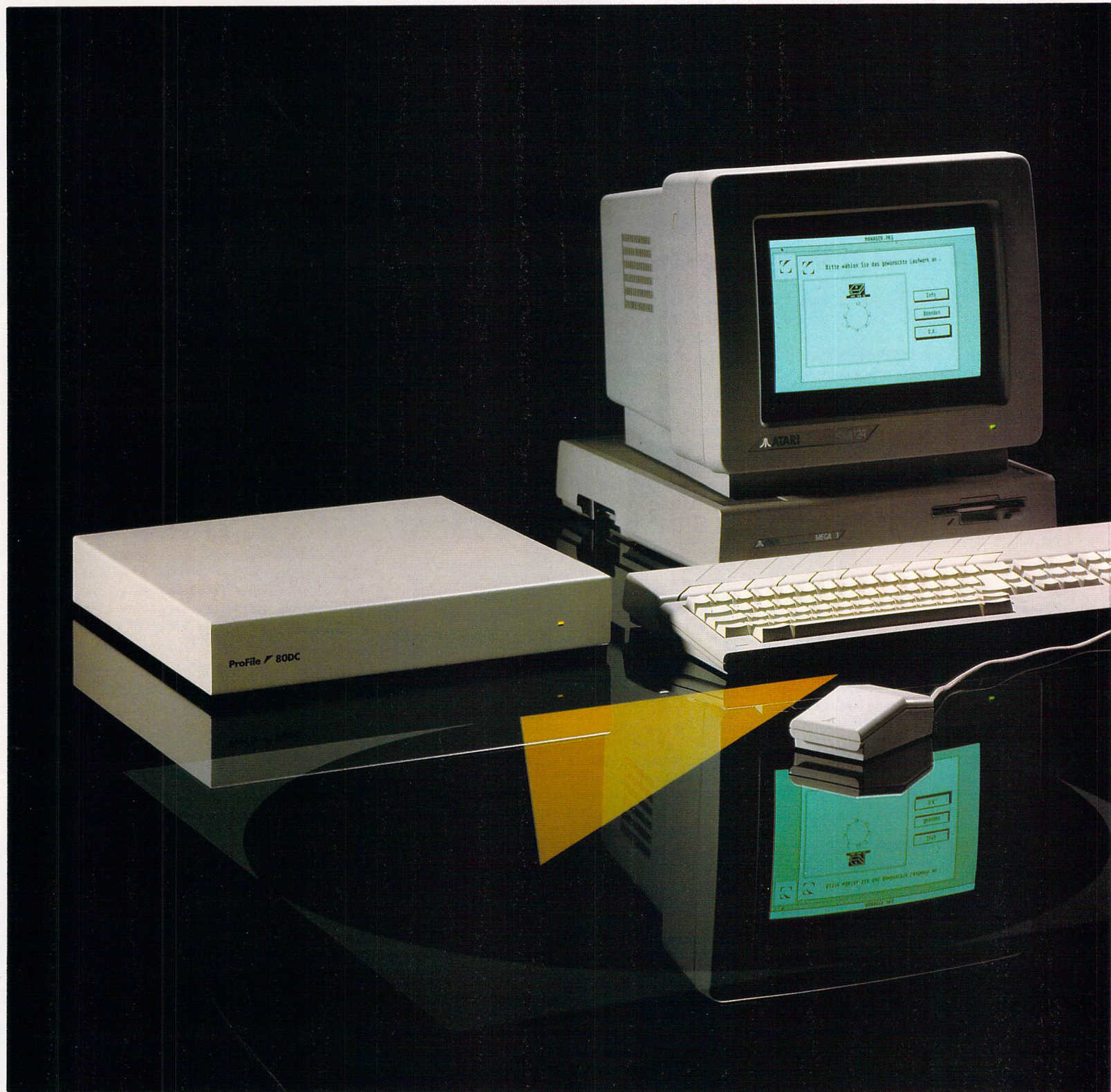
philosophy is fundamentally different from the pragmatic approach of western science: nothing is seen in isolation; everything is involved in the cycle of cause and effect. Ask yourself a question, cast the runes and the truth will be revealed – well, that's the basic idea.

I Ching

Translated by Richard Wilhelm
Arkana £9.99

The definitive version of the book of changes with a forward by Carl Jung first published in 1951. If you fancy some coin tossing predictions and an insight into the wisdom of ancient China, then start here.

protar – Looking after number one



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protar are the Number One manufacturer of third party Hard Disc Drives for the world's Number One small computers, the Atari and the Amiga. protar are Number One European market leaders in our field. Because of our many years of expertise in this field and the Number One *in-house* software and hardware technicians the quality of all protar products is absolutely second to none.

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Get the best

In the final part of our series on using *Sequencer One*, Vic Lennard suggests how you can exploit it and then set it up so you can use it with other programs



Sequencer One is an excellent sequencer to get you started in the world of ST music. This is partly because we gave it away on Cover Disk 30, but also because it has most of the basic sequencing functions such as the ability to record multiple tracks of MIDI information, step editing and the ability to cut, copy and paste bars to create a song.

However, there is bound to be a time when you're going to consider moving on to a more powerful program such as Steinberg's *Cubase* or C-Lab's *Creator*. There may be many reasons for this, but the most likely one is that you may wish to be able to print out scores of your music and *Sequencer One*

cannot do this. It may be that you are working with some other people who are using other sequencers and you want to transfer your semi-finished songs to their programs for completion, or maybe you want to load their songs into your *Sequencer One*. Perhaps you want to create songs on *Sequencer One* and use them for live backing via a "Workstation," which is a keyboard and sequencer in one, with the latter having its own disk drive. This would save you the hassle of using an ST live on stage where the lighting circuits play havoc with the monitor!

Whatever the reason, you are going to need to be able to save your songs in a format that can be

HOW TO GET RID OF

If your keyboard has a MIDI feature called *Aftertouch* or sends out MIDI program changes as you select patches, this MIDI information is recorded onto *Sequencer One* if you are recording at the time the data is sent. To avoid this happening, you should use the *Filter* function in the MIDI menu. (For details of this, see last issue.)

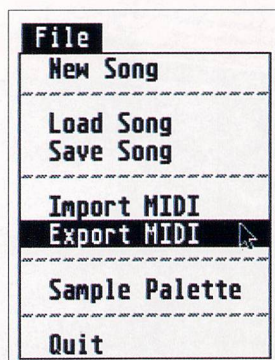
Sometimes you are bound to forget. No problem. There is a function in the *Track* menu called *Strip/Thin*, which enables you to remove certain types of MIDI information after you have recorded it without harming other kinds of MIDI data on the same track.

loaded into another program or machine. That's what standard MIDI files are for. A MIDI file is a common vehicle for transferring song information between sequencers, each of which uses a different format to save its own data. You can always recognise a MIDI file – it has the extender .MID after the title. MIDI files can even be moved between sequencers on different

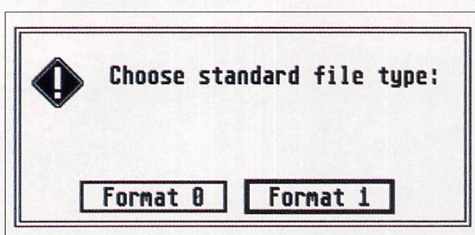
SEQUENCER ONE QUANTIZE VALUES IN TICKS

Sequencer One breaks each beat, or quarter note, into 192 ticks. This means that it is referred to as having a resolution of 192 Pulses Per Quarter Note (ppqn). Consequently, the seven boxes in the *Quantize* option have the following number of ticks (from left to right):

| Name | Fraction of a Beat | Number of Ticks |
|--------------------------|--------------------|-----------------|
| Crochet | one | 192 |
| Quaver | half | 96 |
| Quaver Triplet | third | 64 |
| Semi-Quaver | quarter | 48 |
| Semi-Quaver Triplet | sixth | 32 |
| Demi-Semi-Quaver | eighth | 24 |
| Demi-Semi-Quaver Triplet | twelfth | 16 |



● To use your *Sequencer One* files in another music package, the first step is to save your song out as a MIDI File. Go to the File menu and select *Export MIDI...*



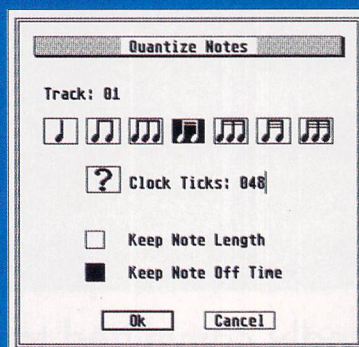
You then get this dialog box, giving you the option of saving the song in either of two formats. *Format 0* saves all the MIDI information as one track and ignores all the track names. Some sequencers need this format, but generally *Format 1* is preferable.

QUANTIZING

No matter how carefully you play a keyboard, the notes never come out quite where you want them. The fingers for a chord often go down at slightly different times and a sequencer is very good at showing up these inaccuracies on playback! **Quantizing** is the term used for when a sequencer moves notes to the nearest particular note value you have selected. If you select the wrong note value to quantize to, the music does not end up sounding the way you intended.

| BAR | 1 | 2 | 3 | 4 |
|------|---|---|---|---|
| BEAT | | | | |
| A1 | | | | |
| G#1 | | | | |
| G1 | | | | |
| F#1 | | | | |
| F1 | | | | |
| E1 | | | | |
| D#1 | | | | |
| D1 | | | | |
| C#1 | | | | |
| C1 | | | | |

1 To Quantize, you have to select a note value. If you choose sixteenth, then all notes are moved so that they start on a sixteenth note. This grid has one bar of four beats split into 16 divisions; each division is referred to as being a sixteenth (of a bar). So, each beat could be called a quarter note – which, in music, is called a *crochet*. This diagram can be used to show what happens if we select the wrong values for Quantizing, with notes shown as rectangles. The left side of the rectangle shows where the note starts, while the right side shows where the note ends.

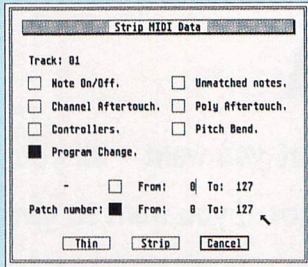


2 If you look at the *Quantize* option in the *Track* menu, you can see that there are seven boxes for you to select from, along with a question mark requiring a number of ticks and the choice of *Keep Note Length* or *Note Off Time*. The boxes show the note values; see the box above for more information on this and the meaning of the number of *Clock Ticks* next to the question mark.

| BAR | 1 | 2 | 3 | 4 |
|------|---|---|---|---|
| BEAT | | | | |
| A1 | | | | |
| G#1 | | | | |
| G1 | | | | |
| F#1 | | | | |
| F1 | | | | |
| E1 | | | | |
| D#1 | | | | |
| D1 | | | | |
| C#1 | | | | |
| C1 | | | | |

3 Let's say you played in a C major chord like the one above. This is pretty typical – all the notes for the chord should be at the same point but, since you are only human, there have been mistakes. What happens if you quantize to the nearest quarter note, or *crochet* (the far left box)?

UNWANTED MIDI INFO



● To get rid of any particular type of data, just select it, click on Strip and it's zapped! The box here is set up to get rid of any program changes.

computers: the ST reads MIDI files from a PC disk, and the Apple Macintosh can read MIDI files from PC disks via the use of a utility.

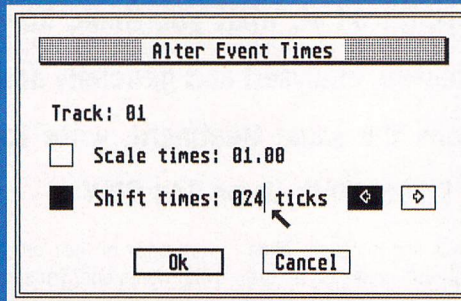
If you look at the File menu, you can see the selections of Import MIDI and Export MIDI. The first enables you to load in a MIDI file from another program, and the latter enables you to save a *Sequencer One* song as a MIDI file for transfer to another program. You use these in exactly the same way as the Load Song and Save Song functions, except that you can then load your *Sequencer One* song into another sequencer by using its "Load MIDI File" function. Most sequencers now have such a facility.

Once you have a song in memory, click on the Export MIDI option and you get a dialog box asking you whether you want it to be a Format 0 or a Format 1 type file. A Format 0 type file saves all MIDI information as one track. Some sequencers only accept a MIDI file of this type and you may need to check in the manual of the sequencer you are transferring to. Generally, you do not need to use the Format 0 type at all. You are better off using a Format 1 type file because when you load into another sequencer all your information will be as it was when you saved it – as individual tracks.

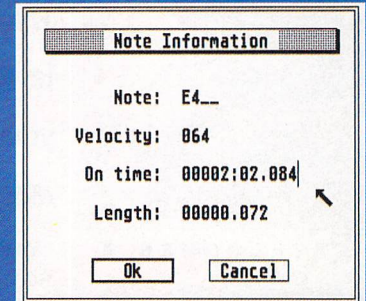
When *Sequencer One* writes a MIDI File, it saves all the MIDI information on the tracks of your song, but it doesn't save any Patch Change numbers that you have typed in on the Track List. It also saves the

ALTERING EVENT TIMES

Sometimes your playing may be inaccurate, but quantizing is not the answer. For example, a piano piece may have been played slightly after the beat all the way through, which could be due to a poor response of the keyboard being used. All you need is to move all the notes back a small distance. The Alter Times option in the Track menu enables you to do just that.



1 To achieve the correct result for the problem here, check the second option of Shift Times and set the number of ticks. This might appear to be largely a matter of hit and miss, but it isn't. Go to the Step Editor and use the INFO feature to see the precise On time of some of the notes.



2 From this you can see their actual times and get a feel for how far they need to be moved. The format of the On time is Bars:Beats in 96ths, so the last figure is always a part of 96, not a decimal!

tempo and the time signature. As for the individual track names, it saves these when it writes a Format 1 type file, but ignores them when you use the Format 0 type.

How do other sequencers handle the MIDI files that *Sequencer One* writes? Here's a couple of examples. Steinberg's *Cubase 2.0* does not accept a Format 0 MIDI File, but happily reads a Format 1 file except for the track names, which it simply calls "MIDI." C-Lab's *Creator* reads both formats and also displays the first eight letters of the track names. You may have a problem transferring the tempo to some sequencers – there are occasionally rounding errors, depending on the accuracy of a sequencer's resolution, which varies from program to program.

Can *Sequencer One* read MIDI Files from another

sequencer? Yes – you use the Import MIDI option for this. *Sequencer One* automatically knows whether the file is Format 0 or 1 type. If it is a Format 0 type, it loads it in and automatically breaks up the information so that all the data on a particular MIDI channel appears on a single track. If it is a Format 1 type, it just loads it in as it was saved; this includes the MIDI channels which the MIDI information was originally played in. **stf**

● That's it for our *Sequencer One* help series – but if you have any specific problems with *Sequencer One*, write to our ST Answers section. Just use the handy Freepost coupon on page 73.

Creator 3.1 is available from Sound Technology ☎ 0462 480000 at £330.00. You can get *Cubase* from Evenlode Soundworks ☎ 0993 898484 for £575.00.

| BAR | 1 | 2 | 3 | 4 |
|------|---|---|---|---|
| BEAT | 1 | 2 | 3 | 4 |
| A1 | | | | |
| G#1 | | | | |
| G1 | | | | |
| F#1 | | | | |
| F1 | | | | |
| E1 | | | | |
| D#1 | | | | |
| D1 | | | | |
| C#1 | | | | |
| C1 | | | | |

4 The C and E notes have been drastically moved in one direction, while the G note has been moved in the opposite direction. This certainly isn't going to sound like three notes that were played at the same time! What happens if you quantize to the nearest 8th note, or quaver (second box from the left)?

| BAR | 1 | 2 | 3 | 4 |
|------|---|---|---|---|
| BEAT | 1 | 2 | 3 | 4 |
| A1 | | | | |
| G#1 | | | | |
| G1 | | | | |
| F#1 | | | | |
| F1 | | | | |
| E1 | | | | |
| D#1 | | | | |
| D1 | | | | |
| C#1 | | | | |
| C1 | | | | |

5 The C and G notes have been moved to the correct place, but the E note was too far away from its correct position for quantize to work – you would now have to use the Step Editor to manually move the E to the correct place. If your playing is too inaccurate, you may not be able to get a correct result by quantizing and may have to resort to manual movement.

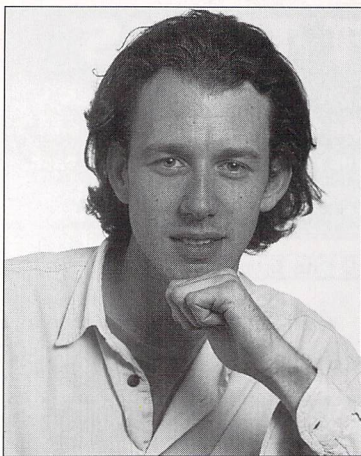
| BAR | 1 | 2 | 3 | 4 |
|------|---|---|---|---|
| BEAT | 1 | 2 | 3 | 4 |
| A1 | | | | |
| G#1 | | | | |
| G1 | | | | |
| F#1 | | | | |
| F1 | | | | |
| E1 | | | | |
| D#1 | | | | |
| D1 | | | | |
| C#1 | | | | |
| C1 | | | | |

6 All this quantizing has been carried out with the Keep Note Length option checked; if you look carefully, you can see that the moved notes are still the same length as they were before they were quantized. This is because, although you may not play in the notes at quite the right time, you are usually more accurate when you take your fingers off, so keeping the note length correct is usually accurate. However, there are times when you might wish to keep the end of the note exactly at the spot where you played it, although this would be rare. This shows the chord as originally played.

| BAR | 1 | 2 | 3 | 4 |
|------|---|---|---|---|
| BEAT | 1 | 2 | 3 | 4 |
| A1 | | | | |
| G#1 | | | | |
| G1 | | | | |
| F#1 | | | | |
| F1 | | | | |
| E1 | | | | |
| D#1 | | | | |
| D1 | | | | |
| C#1 | | | | |
| C1 | | | | |

7 This is how the chord looks after quantizing to eighth notes with the Keep Note Off Time option. The ends of the notes are in the same places as they were played in, so the actual note lengths have changed.

Don't forget that quantizing on many sequencers is non-reversible and cannot be undone. However, the Undo facility in the Track menu takes your song back to the situation it was in before quantizing, as long as you Undo before carrying out another edit, you no longer have the chance to undo the quantizing.



ARE CATALOGUES A CON?

Why do some of the companies who advertise in your magazine ask for money for catalogues about the software that they are trying to sell to the public? Admittedly, some companies ask you to send a blank disk for their

Feedback

This is where it's all at: what *you* think, how *you* feel and what *you* want – all your letters dissected, analysed and generally answered by the Editor. If you want to give your opinions the same treatment, write to The Editor, Feedback, **ST FORMAT**, 30 Monmouth Street, Bath, Avon BA1 2BW

catalogue, which is fine because, when you've looked at the contents of the disk, you can always reformat it if there is nothing of use on it. Others refund your initial outlay with your first order, but these companies are few and far between. Don't you think it would be in a company's best interests to send a

free copy of their catalogue to anyone who wants one? I'm sure they would get a lot more customers. I mean, you wouldn't expect to go into a car showroom and then have to pay 50 pence for a catalogue on their latest range of cars.

K R Walker, West Lothian

stf: Presumably you're referring mostly to Public Domain libraries. Bear in mind that they only charge a very small price for their software, so they're not in a position to give away fistfuls of catalogues to anyone who asks for them. It seems PD libraries just can't win. Last month we had readers complaining that

In issue 33, Philip Harmon, previously owner of MPH software, wrote to Feedback expressing his views about the inadequacies of the computer games industry. It stirred up quite a few of you. Here's a selection of the letters we received in response to Phil's letter.

There are a number of ways that the computer industry can clean up its image.

I think that there should be some kind of organisation set up to determine the price of software and set a regulation box size. I'm sick and tired of buying a game – with the box the size of a suitcase – only to find a single disk, and a tiny manual, or, in some cases – like Audio-genic – a piece of paper no bigger than a till receipt.

Prices of games are a rip-off. They cost little to produce (yes, I know some games take years of development and a lot of financial input), but, at the end of the day, when they are mass producing a program it costs very little. How do I know this? Well, there is a software shop in Basildon, Essex, which stocks software from £2.00 because, according to the manager, "We buy our games from our supplier for approximately £1.50 per disk."

Software publishers should sell software direct to the public at a cheaper price than to the shops. If they can sell to a middleman for as little as £2.00, then why not sell it to the public at that price? This applies especially to budget software because it costs nothing to produce except for the price of the disk – a penny to them, probably. The solution to poor quality games is for publishers to supply demos of other games with each game they sell.

Steve Mason, Brentwood

stf: Your problem with the pricing of games stems from your mistaken view that computer stores can buy their games for £2.00 a throw. This is certainly not the case and I suggest that you pass details of your games retailer onto FAST – the Federation Against Software Theft, ☎ 0734 784933 – because there's no legitimate source that would sell full price games for £2.00. If it were possible, then the mail order houses – that last bastion of cheap games – would have dropped their prices long ago. You also seem to have decided that budget software costs nothing to produce. The programmer of the game is

THE WORST INDUSTRY IN THE WORLD...

still entitled to royalties on budget releases, there's still packaging to produce and disks still cost around 40p each. Following your argument about the high street chains to its logical limit, what's the point in having shops at all? High street chains make the same amount of profit on a computer game as they do on greetings cards, so why don't we all buy cards direct from the manufacturers?

Your argument about demos has been thought through more clearly. Playable demos are available free of charge on ST FORMAT's Cover Disk.

The ST market is flooded by unoriginal software whose only selling points are the films they are based on. You state that gamers are realising that it's not the name that makes the game, but a lot of software houses still produce licences. Why? Because they sell well. Parents buying software for their offspring see *Terminator 2* and *Populous* on the shelves of their local shop. They opt for T2 because they know the name. That's who the software houses are aiming sales at, rather than the hardened software buyer.

On the point about software prices, how many games out at this minute, retailing for £25.00, are actually worth it? You state that the price of games reflects the amount of work that goes into them. But, if this is the case, why have games not improved much since the C64 days? It's because, in the early days of software, there weren't these large software houses in the market just for the money.

You go on to say that we – the public – should rely on reviews before we buy, but I have bought software on the strength of reviews only to find that, in my view, the software is rubbish. People's tastes are different, so a game your reviewer enjoys might not appeal to me. I now only buy games that I've played demos of. To me, the only way for software houses to go is to release demos of games for a small fee which is redeemable against the cost of the full game.

In my opinion, unless the software industry pulls its finger out, it's going to go down the pan. It's time for the software companies to think of Joe Public instead of the money. Obviously they have to make money, but this shouldn't involve ripping us off.

Robert Hall, Lancs

stf: Film licences don't need to be rubbish. Look at Ocean's new *Terminator 3* game – it's a brilliant concept, well worthy of a *FORMAT Gold* and proves that film licences can also be good games. Parents tend to buy games at Christmas time and it's up to their children either to convince them to read ST FORMAT or to buy quality games rather than go for recognisable licences.

I'm surprised you think that games haven't improved much since the days of the C64. I've played many games on the C64 and far more on the ST. Quality software like *Populous 2* and *Secret of Monkey Island* are so complex they just can't be converted to the C64. In cases like these, a high price point is certainly justified.

It always bothers me to think that some software publishers can make money by releasing an abysmal game hidden in good packaging. More demos are a good solution, but remember your own observation that many games are bought by parents. In these cases, a demo certainly isn't going to change the situation. Rental shops would be a good idea, particularly if royalties from the rental sales could be diverted towards the programming team.

Phil Harman mentioned that, in 1982, Sinclair Spectrum software retailed at about £5.00. While this is true, he failed to point out that, at the same time, ST software was selling for between £15.00 and £30.00 for games alone!

ST software has always been a touch on the expensive side, and even back in 1982, this was a major criticism of Atari. I don't think that we're as badly done by the software houses as we were ten years ago. Considering that the complexity of the gameplay, graphics, sound and the effort that goes into programming has increased tremendously – for our £30.00, we are getting our money's worth. And I haven't included the effects of inflation and so on.

Jonathan Harlow, Bath

stf: You have to bear in mind that, ten years ago, there were far fewer machines on the market so games producers had to hike up their prices to recoup their investment. As more and more STs have been sold, the average prices have tended to stay the same – indeed, there's a lot more budget software around than ever before.

PD libraries charge too much for software that is, essentially, free. Now this month they're coming under attack because they try to keep their costs down by charging separately for catalogues.

THE END OF THE LINES

Having read R A Bounsall's letter in STF 32, I thought it necessary to bring my problem to your attention.

I ordered a 0.5MByte upgrade board from Third Coast after discovering my ST had a surface-mounted MMU. This was on 21 December and it still hasn't arrived.

N Ellis, Stoke-on-Trent

stf: Third Coast have finally gone out of business. If you have a claim against them, call the liquidators, Grant Thornton on 061 834 5414. Call soon because many people are understood to have claims against Third Coast. ➔

WHERE TO SEND YOUR LETTERS

To improve your chances of getting a reply to your letter, it would help if you sent your mail to the right places. To help you sort out where to address your mail, here's a list of our sections:

FEEDBACK

This is where you should write if you want to get something off your chest about any topic related to the ST. Feel better for letting it all out – and you might even win some cash! Write now to The Editor, Feedback, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW

TECHNICAL QUERIES

If you can't make your ST do everything you want it to – aside from doing the washing-up or cooking your dinner – or have any difficulties using particular software packages, write your problem in as few words as possible and post your query to ST Answers, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW. We can only guarantee to answer every technical question we receive if they're sent to ST Answers. Remember, if your problem isn't answered, we may

have covered it in a previous month. You could win up to £50 if you send a technical tip to the same address.

GAME TIPS

If you have any tips, hints, pokes, passwords or short cuts to enable you improve your game playing, write to Gamebusters, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW. You could win £50!

ADVERTISING COMPLAINTS

Having problems with any of our advertisers? Put your complaint down on paper and send it to Advertising Complaints, ST FORMAT, Ground Floor, Rayner House, 23 Higher Hillgate, Stockport SK1 3ER.

Sorry, we cannot reply to mail individually – even if you enclose an SAE.

OR NO DIFFERENT FROM ANY OTHER?

From Peter Calver, Managing Director, Audiogenic
Since starting in this industry in 1978 I've seen many changes, but the situation today is more worrying than anything I've experienced before, and I'd like to share some of my thoughts with you.

While there are, indeed, examples of unlicensed games that have sold remarkably well, I'm afraid they are few and far between – and, in any case, I'm sure that *Turtles*, *WWF* and so on actually sold more than *Populous* and *Monkey Island*. From the publisher's point of view, producing an original game is a big risk – first, the concept may not work, then the reviewers may not like it, finally the public might not buy it.

Last year, Audiogenic released two highly original games – *Loopz* and *Exile* – both of which were highly rated by many reviewers. Unfortunately, neither of these games sold well to home computer users in the UK. In fact, sales so far have been so bad that we would have done better not to release them at all.

For some reason, everybody who isn't a software publisher tends to assume that all the games we release make money. The fact is, that, like book publishers, the majority of the games we release actually lose money – it's the one in ten which sell really well that keep us in business. Admittedly, there have been times in the past when the success/failure ratio was much more favourable, but I suspect those days are gone for good.

High retail prices are a consequence of the increasing costs and diminishing returns that publishers face. It may well be that everyone would be better off if prices were at a much lower level – I believe that lower prices would actually increase publishers' profitability – partly by reducing piracy, and partly by making computers more attractive compared to consoles – but any publisher who halves the price of his games risks having them regarded as budget games (or worse, as over-priced budget games). I've seen it happen.

Incidentally, while software prices have risen in the UK, in the US they have changed very little over the past ten years – I can remember the first Vic-20 cassette games in the States selling for over \$50.00! These days prices are slightly higher in the UK than in the US, but not by much.

The question of software quality is the most intriguing one raised by Philip Harman. It's virtually impossible to produce totally bug-free software – but one person's

bug is another person's feature. Where would the Hints and Tips pages be without “undocumented features”?

However, I would be the first to agree that too many poor quality games find their way onto the shelves – and by poor quality, I mean games with glaringly obvious bugs, jerky scrolling, sprites that flicker unnecessarily, or no gameplay to speak of. The problem is that most people in the chain don't have the opportunity – or the time, or both – to look at the games. Distributors often don't have the chance to test the games, retailers certainly don't get the opportunity, and, in most shops, the customers can't try them out either.

Reviews help, of course, but when you get to the shop to discover the game you really wanted hasn't been released yet, you're faced with hundreds of titles to choose from, and can't possibly be expected to remember all the review scores (which is, perhaps, why it is often said that a bad review sells more games than no review at all). In any case, a publisher who has invested a lot of money in a game that turns out to be a real stinker will hold it back from review as long as possible.

I'd like to see an independent body set up to evaluate games submitted by publishers voluntarily. Games which reached the required standards would bear a Seal of Approval. Members of the public would know that they were taking a chance buying software without the Seal of Approval – either it had failed to gain approval, or the publisher had decided (for some reason) not to submit it.

Finally, as a member of the ELSPA Council, I certainly agree that we should take notice of what the public have to say – although, since we're the ones who are risking our homes, businesses, and livelihoods, we ultimately have to follow the path that we believe to be correct. I'll certainly bring the matter up at the next Council meeting. I'd be interested to know how many ST FORMAT readers would be interested in attending a question-and-answer session organised by games publishers (not necessarily my ELSPA colleagues – I haven't consulted them yet). There would have to be a small admission fee to help cover costs, but it would be a unique opportunity to meet and play a part in the future of our industry.

stf: You do paint a grim picture of the computer industry, Peter. However, I don't agree with all your points.

Turtles outsold Populous only because it was released in a variety of different formats. The ST version

of Turtles didn't get anywhere near the number of sales of Populous. WWF hasn't been around for long enough to judge, but the signs are that the ST version of Populous is still likely to sell more copies than WWF on the ST.

I fail to see how you can insist that your two games are prime examples of original concepts. *Loopz* (STF 16: 58%) is a puzzle game and *Exile* (STF 28: 92%) was a scrolling arcade adventure. Neither was especially original and they certainly don't compare to the likes of *Populous 2*, *Mega Lo Mania* or *Sim City*.

There's a difference between a bug in a game and a hidden feature. Many of the hidden features are often put in games in order to test them effectively. Bugs which cause a game to crash, freeze or not work correctly are inexcusable. You complain that the shops don't have the facilities or the inclination to test the games they sell, but software publishers certainly get to see the games before they put them on the shelves. Rather than hold back the release of a bad game – and risk jeopardising a well-planned advertising campaign – the publishers put the game out and hope it sells enough copies before reviewers slate it. In so doing, they damage the reputation of the whole industry. Gameplayers begin to feel that high price points are a rip-off because so many games just aren't worth the money. Games publishers then get on their high horse and whinge about piracy and poor sales, when it's poor games like *Loopz* and *Wreckers* which have convinced people that computer games are a ripoff. It's hardly surprising that people turn to piracy as a reaction to being conned by bad software. You said yourself that “there have been times in the past when the success/failure ratio was much more favourable.” Now that people aren't fooled by hype and big boxes, we're told the ST games market is dead and it's not worth releasing games even though quality stuff still sells well.

The Seal of Approval suggestion sounds like a superb idea, though I'm not convinced all publishers would be happy to go through with it. At what point do you set the base level for such a Seal? Who judges such things? FORMAT Gold awards are intended to work on a similar level. If anyone is interested in participating in a question-and-answer session like that suggested by Peter, write to him at Audiogenic Software, Unit 27, Christchurch Industrial Centre, Wealdstone, Harrow HA3 8NT. In the meantime, if anyone else has thoughts about the state of the ST software industry, please feel free to write to me.

WHERE ARE THEY?

In December, I ordered Leaderboard using my Barclaycard from Turbosoft, and I have never received any goods. Many telephone calls and letters have met with no response. Have I any other recourse?

B J Pearson, Rhondda

stf: Turbosoft have disappeared without trace. If you have a complaint, contact the Fraud Squad in your nearest big town and explain what's happened.

PUBLICLY PIXELLATING PORN

While checking through some recent copies of *The Times*, I was shocked to find an article concerning the distribution of pornographic material on disk for the ST. Apparently, many Public Domain outlets offer these disks which contain pictures, often animated, of naked young women of the sort found in many "adult magazines."

Since I was so outraged, I asked my son – who owns an Atari 1040 STE – if this was true. Not only did he confirm what the article said, but also showed me several Public Domain catalogues which publicised these pictures along with more serious programs. Surely they realise that children are likely to hear of, and obtain, such disks because the PD libraries do not ask for any real identification?

I believe it's appalling that children owning an ST can so readily lay their hands on explicit, X-rated material without having to give any proof of age or endorsing their signatures. Something must be done about this before it gets too out of hand and people see computers as a more viable market for pornography than magazines.

J Nicholson, Aston

stf: If you look at some of the "pornography" on offer, you'll see that there's no chance of it denting the profitability of pornographic magazines. The ST's screen resolution and number of colours means that it's impossible to get the kind of quality available from photographs. Animation is limited to a very small number of frames which are repeated over and over again. Nevertheless, this kind of thing doesn't do the image of Public Domain software much good and the blatant advertising of such software in PD catalogues is senseless. This kind of stuff isn't limited exclusively to PD software – there's a wide variety of strip poker games available in the shops.

I certainly don't think that pornographic PD should be kept away from adults. If adults want to go out and buy this kind of stuff, no one should stand in their way. Clearly though, any adult who's after pornographic material is likely to turn to magazines – the quality is much better, there's more of it and there isn't the hassle of loading soft-

ware into your ST. The vast majority of people who buy this stuff must, therefore, buy it because they can't get magazines and videos from newsagents – presumably because they're under 18.

There is certainly something wrong with this state of affairs. I suggest that the solution is to force people to sign a form saying they are over 18 years old, and to insist that people who want this

kind of software use a cheque and not postal orders which can be bought by anyone. A blanket ban isn't the solution, but greater responsibility and vigilance by the PD libraries is essential.

THAT'S LIFEBOUY

Thanks for the inspiration in the article "Going for Gold" about John Pegg and his DTP business. I've just been made

redundant for the fourth time, but, as my Dad used to say to the bar of soap, "that's Lifebuoy." Bad news kills your sense of humour! Anyhow, with the few quid I got, I bought *Protext* and *Pagestream* because of your good reviews – I can now testify that they are, indeed, great pieces of software. Not only do I use them, my children will, too.

When this recession ends, there will be plenty of small firms starting up needing DTP services of which I hope to be a part, so I am now saving up as much as I can for a colour printer.

Most of all, I hope this gives other people in the same boat as I find myself some hope for the future. I've had inspiration, through an article in your magazine, to make something of my life – and some money, of course! It should also put an end to me losing jobs through no fault of my own. At least if I do fail, it will be my own doing and not somebody else's. So, go for it – life without hope and dreams is, indeed, an empty life.

Michael Clay, Essex

stf: Keep us informed about what comes of your venture, Michael. Has anyone else gone ahead and used their ST for money making purposes?

SO WHAT WAS THE POINT OF THAT?

Last summer, I upgraded my 520 STE to 2MBytes but I'm disappointed that most software does not make use of the extra memory. For example, *Flames of Freedom* would have been more enjoyable if you did not load new info. every time you change the screen. I also noticed that there are no 2MByte demos in the Public Domain – is there any reason for this?

STs should come with 1MByte as standard. This would mean that games could have sampled sound and better graphics with digitised pictures.

Jonathon Lukas, Gibraltar

stf: To cater for all ST owners, many software programmers write their games so that they run on the lowest common denominator – the 520 STE. More and more ST owners are now buying machines with at least 1MByte of memory or are upgrading their STs using the range of memory upgrade boards available. This has given a new lease of life to games programmers. Instead of making games which require constant disk accessing, they can now confidently release 1MByte-only games in the knowledge that there are enough ST owners out there to buy them. *Flames of Freedom* is a perfect example of a game written for the 520 ST which should have been made to work on 1MByte machines only. *Populous 2* and *Railroad Tycoon* were written to work only on 1MByte machines and



SHORTIES BUT SWEETIES

If you can put all your comments down on the back of a postcard, we're more likely to print your letter

I've heard that early versions of *The Secret of Monkey Island* have a bug. When I enter some screens, a message appears saying "41 Heapfill Game Over!" What should I do?

Richard Desmond, Sheffield

– Does your ST have over 1MByte of memory? Although *US Gold* say the game runs adequately on a 520 ST, this problem does crop up on occasions. Consider investing in a memory upgrade – turn to page 26 to see how simple and cheap it is.

Can you buy *Chess* from the compilation *Five Intelligent Strategy Games (STF 30)* on its own?

Nigel Chapman, Glasgow

– Oxford Softworks don't sell the chess game separately, but they do sell *Chess Champion*, a similar game, for £19.99. Give them a call on ☎ 0993 823463.

I saw *SEUCK* in your Buyer's Guide. Is this games creator still available?

Glenn Jacobs, Chelmsford

– Each month we check every item in the Buyer's Guide to make sure it's still on sale. *Gremlin* sell *Shoot 'Em Up Construction Kit* for £9.99. Call them on ☎ 0742 753423.

Will you be reviewing any more lightgun games? Can you get any lightguns apart from the Trojan phaser? If I buy one, will it enhance any games I've already got?

Tom Wells, Lowestoft

– We'll be reviewing more lightgun games as they become available. They certainly enhance the playability of certain games. At the moment I'm not aware of any other lightguns, though I'm sure they'll become available as more games publishers write games which use lightguns. Unfortunately, you can't simply use a lightgun instead of a joystick – you need to buy games which have been specially written for them.

I've heard that Commodore are planning to buy the STE range and then dump it so the Amiga gets the market. Is this true?

Aidan Green, Worcester

– What an interesting idea – spend millions buying the ST range and then dump it, so that the Amiga games machine doesn't have any competition. The ST and Amiga now cover very different areas. Commodore have no plans to buy the ST range.

I've just received a standard of service from one of your advertisers which I challenge any company to better. I bought a 2MByte memory upgrade for my STE and, during the fitting, I broke it. Frontier Software replaced the damaged part in record time, with no charge for the broken part. They also gave me details of how to get technical help should I need it.

Colin Fish, Leeds

– I'm always glad to hear of good service from our advertisers. Unfortunately, *Frontier Software* are no longer in business, having been taken over by *Marpit Developments* – see our News story on page 22 for more details. Hopefully they will provide an equally good service – you can get in touch with them on ☎ 0423 530577.

Thanks for publishing a review of *Evolution* in STF 29. Some people seem to have had trouble getting hold of the game. *Evolution* costs £8.95 for two double-sided disks or £9.95 for three single-sided disks. Please make cheques payable to *Nigma Adventures* at 10 Greygoose Park, Harlow, Essex CM19 4JH.

Mark Howlett, Harlow

– Thanks for the info. *Evolution* was reviewed in issue 29 and received a score of 70%

Are there any plans for a beginner's guide on how to use hard drives covering topics like how to set up partitions, how to set up a boot sector, what needs to be in the AUTO folder, how to install programs on a hard drive and the general management of many files and folders?

David Eaton, Coppenhall

– In the August issue I intend to run a feature on how to make the most of your hard drive, especially aimed at beginners to the subject.

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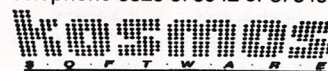
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disk copying is effectively reduced to a minimum. Looking at the games planned for release over the next few months, you can guarantee there will be many more 1MByte-only games to come.

PD demos are often written primarily for 520STs, but if you glance through the catalogues, you come across an assortment of demos that require additional memory. For example, the Walker 2 demo in the PD needs 2MBytes of memory to run.

There are many other programs which demand more than the bog standard 512K to run properly. Desktop publishing programs, music samplers and word processors all become easier to use the moment you upgrade. Indeed, to make use of an Atari laser printer, 2MBytes of internal memory are a necessity.

There really is no better time to increase the memory of your ST – and it's all so simple. Turn to page 26 to find out how you can upgrade your ST.

HOW TO ANTAGONISE AN AMIGA GAMES MACHINE OWNER

I would like to complain about a reply you gave to a letter in April's Feedback. You stated that the games the reader enquired about were only available on the Amiga "games machine." There! You've guessed it, I'm an Amiga owner.

Just because spotty-faced kids like playing games on Amigas, it doesn't mean it is necessarily a games machine. The Amiga is also a very powerful and versatile tool that can be put to use doing most applications you could possibly want. It is not a dedicated games machine such as a console, so please do not call it one.

Jonathan White, Taunton

stf: You seem very touchy about criticism of your machine, Jonathan. I wonder why? Although the Amiga is quite a good games machine, it just isn't being used by people for other purposes. There's a limited range of serious software for the machine, but it's not going to beat anything for the ST. The ST is far superior for applications like desktop publishing, music and word processing. Not only is there more software to choose from, but when it comes to using the machine the ST is far easier to get to grips with – which is probably why it's been popular for so much longer than the Amiga. Halco (☎ 0734 441525) are so impressed with the ST that they're establishing it as the ultimate desktop publishing system for selling to magazine publishers. Musicians the world over – including Madonna, Queen and Soul II Soul among many – use the ST for its musical skills – you only had to browse around this year's MIDI music fair or the Dusseldorf music show to see which machine is the musician's favourite.

The Amiga is notoriously difficult to program, has one of the slowest disk drives in history and one of the least friendly Desktops. It's hardly surprising that only games are outselling the ST because it's only these that make the Amiga's main hangups almost invisible to the user.

That's enough of this "my machine is better than yours" rubbish. I don't want anyone writing to me saying the Cray Super computer beats the ST.

WE ALL WANT MORE GAMES

I have been reading ST FORMAT for over a year and have noticed an increasing trend for certain software houses to avoid producing games on the ST claiming there's no market for

them – for example, Eye of the Beholder and its sequel, and more recently, Civilization and Sim Ant.

In STF 22, Bob Gleadow of Atari was reported to have said that there are half a million STs in circulation – there must be even more now that the price of the STE has dropped dramatically. How, then, can software houses justify not producing an ST version of a game? Admittedly, more people use the ST for more serious applications, but even so, how many sales constitute a market?

With reference to Civilization by Sid Meier, I thought that Railroad Tycoon did well, so why is there no Civilization? I read with interest that they do not feel that there is sufficient demand for an ST version. How can they say this when

it is common knowledge that god/sim games do so well?

I have taken your advice and written to Microprose expressing my views on their policy and I hope by writing this letter, that I am speaking on behalf of other ST owners and bringing this issue to the attention of those offending software houses. Maybe some sort of poll could be set up by you, through the pages of ST FORMAT, so that a larger response could be obtained. I know I am not the only ST owner who feels he is being let down.

Andrew Dalglish, Worthing

stf: Recently, the dying Spectrum games market has seen a number of new releases which have come about because Spectrum owners wrote to the software publishers demanding they release certain Spectrum games. Publishers are clearly prepared to change their policies if enough people write to them and complain. The same must happen on the ST front. If we want to get more quality games on the shelves, then the only way to do it is to let the publishers know what we want. They often cite the lack of sales of hackneyed games as evidence that the ST games market is dying. Original games which demand greater commitment and expense by the publishers suffer as a result. Last month, we ran a special coupon encouraging readers to write to the games publishers and demand more ST releases – please take the time to fill it out and post it.

NEW USER GROUPS

We've sent you a copy of STupendous, our quarterly club mag, RAW our club disk which comes with STupendous, a copy of the LYNX Sequencer – a program we are releasing, and also a "pre-view" edition of the Insane Remix 2.

The Insane Remixes are a new idea of ours – probably the nearest thing you could get to an Atari ST radio show and they're packed full of ST music, reviews, news and fun. Club membership is currently £15.00 per year and is open to all owners of Atari STs – both STFMs and STEs are catered for.

Kenny Jarman, The Atari ST Users Association, 18 Poplar Close, Biggleswade, Bedfordshire SG18 0EW

stf: It's always good to hear of new user groups and particularly those that offer something a bit different to their members.

One small point, though: you could do with a sub-editor to weed out the spelling and punctuation mistakes in the copy. It really does make such a difference.

DO I NEED A PATCH?

In your article about using Write On from STF 33, you state that a patch is needed in the AUTO folder to make it run properly on older STs. Clicking on

COMPARE AND CONTRAST

It concerns me the way you review games. You seem to be the only magazine whose prime concern is how original the game is, and it really annoys me that a game has marks taken off just because it's been "done before," as you frequently put it. In my view, this is pathetic. Each game should be judged individually by its content – how much work has gone into the graphics, sound and so on. It should never be compared to other games. A good example of this is SWIV, which you gave 78%. It had superb graphics, good sound, immense playability, and is as addictive as Xenon 2, but you didn't give it a deserved FORMAT Gold because it's "just another shoot-'em-up." It's a crazy policy, guys. Remember, not every new game released can be innovative – that's impossible. Ideas can run out. Everybody enjoys a good shoot-'em-up or a car racing game, so why waste time and effort trying to invent new ideas when you can improve on genres that everybody likes? The only people capable of this are the Bitmaps.

Now, this is something that really pisses me off. I disagree with the marks you give some games. Llamatron – a very poor sub-normal shoot-'em-up with graphics that my old Atari 8-bit could beat without trying. Is Ed Ricketts blind? How can you give this crap 95%? My friends agree. Surely you're not saying that it is better than the likes of Magic Pockets or Gods? I almost died laughing when I saw the rating you gave it.

Z-Out has far better graphics and sound than R-Type. Sure it's hard, but not impossible, whereas R-Type is just frustratingly unplayable. Midwinter 2: 92% (three marks less than Llamatron – certifiable if you ask me). How can you give the original 96%, and the sequel 92%? It's bigger, smoother, faster, more fun and noisier.

Kevin Jones, Dumfries

stf: You say that a game "should never be compared to other games" and then go on to compare one game to another in an attempt to prove your point. When you're talking to your friends about certain games, how often have you said "X is better than Y" – it's a natural way to measure the quality of a game. If you've played and enjoyed Xenon 2, then, when somebody tells you Gods is even better, you know you ought to go out and buy it. We use the same comparative technique you use during chats with your mates in our ratings system.

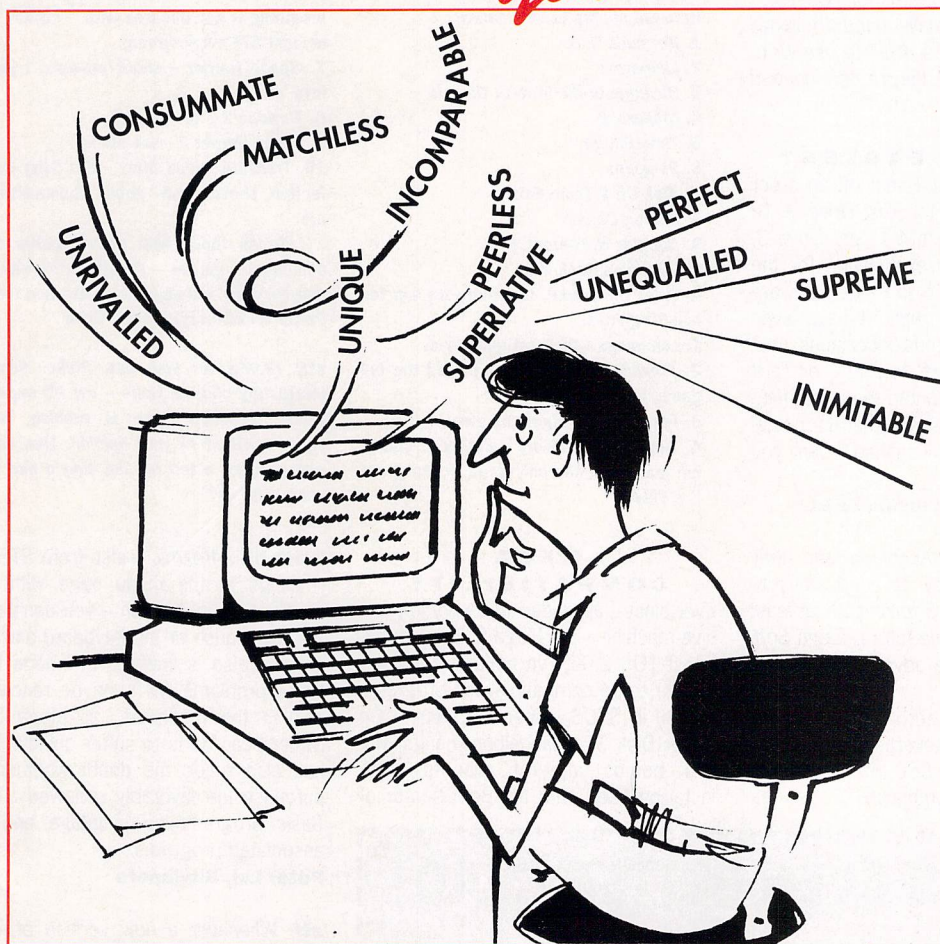
Our passion for original games is hardly surprising. Each new game that appears on the shelves has to offer something more than its predecessors, otherwise there's no point in buying it – but that doesn't mean a game concept has to be unique to score a FORMAT Gold. Gods could be described as a straightforward platform game, but it scored a Gold because it had smart graphics and intelligent gameplay which adapted itself to your abilities. If a programmer can sufficiently improve a hackneyed game genre, then it gets a high rating – Vroom was a superb car racing game which weighed in with a FORMAT Gold because it was different. It really doesn't matter if a programmer has spent 20 years of his life writing a game if it's out of date and no one wants to play it.

Llamatron also came up with some unique attributes. I'm sorry you're attracted by good visuals and sound effects rather than quality gameplay, otherwise you'd have enjoyed Llamatron as much as the rest of us. It's one of the fastest shoot-'em-ups ever, has been specially tailored to meet the abilities of the player (as programmer Jeff Minter admits on page 51), has superb samples and is very cheap. What more could you want? And yes, I would say it's a better game than Gods and Magic Pockets.

Your criticism about Midwinter 2 seems a little more valid on the face of it, but bear in mind that the original Midwinter was released more than a full year before the follow-up. In the intervening time, the standard of games has improved. If SWIV had been the first ST game ever released it would have scored a FORMAT Gold, but now there's much more competition around, so it deserves a lower score. If, when the ST was first released, we set some arbitrary standard that games should meet, then everything would be getting a FORMAT Gold now. Is that what you want?

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the Desktop gives a copyright date for TOS of 86/87, so I need POOLFIX4. This is not so – booting with this in the AUTO folder gives me "Patch NOT required for this TOS."

So I removed Poolfix from the AUTO folder and replaced it with LA.PR.G and rebooted. This time I received the message "Line A Patch not Installed."

Next I got out TELLER.ACC from STF 14 and tried this. This program told me that I have TOS version 1.02 copyright 1987. Then I tried ST_TYPE.PR.G from STF 23. This says I have TOS version 1.2 also copyright 1987.

Please can you tell me what version of TOS I have, something of its history and whether or not I need a patch in the AUTO folder?

Bill Elwell, Slough

stf: There's always been some confusion about the way programs read the TOS version number in ROM. Because of the way it's stored, it can be interpreted as either 1.2 or 1.02 – the same applies to all other versions, such as 1.6/1.06. The "1.02" interpretation is more common.

This version of TOS was installed in the second "wave" of STs, after the first early machines (which had TOS 1.0) and before the arrival of the STE (1.06). TOS 1.4 was a somewhat minor

upgrade to this version which fixed a few bugs and improved things like hard drive access speed, but also introduced new bugs, particularly regarding memory management. This is why you need the patch programs for TOS 1.4.

You don't actually need to install any patch programs at all to use Write On with TOS 1.2 – they're only needed for 1.4.

ILLEGAL EAGLES?

In September 1991 I sent off an order to Eagle Software for Test Drive 3. To date I have not received Test Drive 3, my money or any explanation for the delay. I have written to Eagle Software and have got no reply, I have even phoned on numerous occasions, but the phone is just left to ring – or so it seems. I have contacted the post office and they have confirmed that the postal orders have been cashed. Can you please help?

Anthony Brown, London SE11.

stf: I contacted Accolade and they confirmed that they have no plans to release Test Drive 3 for the ST, at least not in the foreseeable future. Eagle Software are therefore advertising a game that does not exist.

Your best course of action is to get in touch with the Advertising Standards Authority (☎ 071 580 5555) and let them know your complaint.

MY FAVOURITE GAMES



I am 12 years old and, because I cannot afford normal commercial games, I find PD and Shareware a good substitute. Here are my top ten PD games:

1. *Bermuda Race*
2. *Llamatron*
3. *Revenge of the Mutant Camels*
4. *Megaroids*
5. *Time Bandit*
6. *Penguins*
7. *Kick Off 2 Team Editor*
8. *Boxing Champ*
9. *Douglas Rockmoor 2*
10. *Douglas Rockmoor*

And, for the record, these are my top ten non-PD games:

1. *Lemmings* – the best game ever
2. *Populous 2* – I haven't played the full game, but I liked the demo
3. *Populous* – brilliant god game
4. *New Zealand Story* – cute and cuddly fun and about the only good Ocean game I've played

5. *Tetris* – I know it's dated, but its good puzzle fun
6. *Gods* – as addictive as breathing (I got this free with my last STF subscription)
7. *Space Harrier* – shoot-'em-up's, I just love 'em
8. *Turrican 2* – see above
9. *Space Harrier 2* – see above
10. *Treasure Island Dizzy* – the *Dizzy Collection* shows how good Codemasters are.

To all those who spend £100s on commercial games – for goodness sake, give PD a try and pay the registration fee. **Philip Witcherley, Cleeve Prior**

stf: Thanks for your list, Philip. Some interesting choices there – our PD expert thinks *Bermuda Race* is rubbish, but you're entitled to your opinion. Has anyone else got a top ten list they'd like to share with us?

MEGA COMPATIBILITY

Ever since I upgraded to a very impressive machine – the Mega STE – with the latest TOS 2.06, I've noticed it doesn't appear to be compatible with programs written in STOS, especially games. On Cover Disk 32, *Mandelboot* hangs with two bombs after it reboots when installing itself onto the Boot sector of

a new disk. *Kozmic* – also from STF 32 – hangs at the menu page with the arrow stuck in position – you can't control the mouse or the keyboard and the joystick also is ineffective. I hope that these problems will soon be resolved, but, in the meantime, all Mega STE owners can do is to suffer quietly. This has also made me doubt whether to purchase the favorably reviewed STOS Basic programming language and its associated programs.

Peter Lai, Singapore

stf: Whenever a new version of TOS appears, STOS is always the most likely program to fall over. TOS 2.06 is currently only supplied with Mega STEs, and since the majority of ST owners have either "normal" STEs or FMs, STOS hasn't yet been updated to run with it.

However, TOS 2.06 is about to become available as a switchable upgrade for all ST owners (see next month's issue for some very special news on this). Because of this, Mandarin Software are about to release yet another STOS upgrade to make sure that STOS is compatible and all programs written in STOS will run with the new version of TOS without difficulty – try saying that when you're drunk!

Believe it or not, we've only just got hold of a Mega STE with TOS 2.06 ourselves, so we've haven't been able to test programs on it – we believed in good faith that programs that ran on an STE would run on the Mega. From now on, though, every Cover Disk program will be tested on the Mega and ruthlessly deleted if it doesn't work.

● Got something you want to get off your chest? Want to reply to one of these letters? Write now to The Editor, Feedback, **ST FORMAT**, 30 Monmouth Street, Bath, Avon, BA1 2BW.

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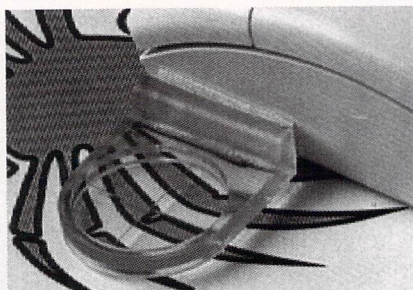
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AND HARDWARE
ITEMS LISTED**

Before you go out and buy a new piece of hardware or software for your ST, make sure you take a look through our updated Buyer's Guide and make sure you're investing your hard earned cash in the best possible package. This month we present a special guide to buying memory upgrades from mail order advertisers. This is your opportunity to find out what all the jargon means, what you should watch out for and where the pitfalls lie

If there's one area of ST hardware which is loaded with baffling jargon, it's got to be memory upgrades. SIMMS, SIPS, populated – what do they all mean? Why can't you just go out and buy a straightforward memory upgrade which plugs into your cartridge port? After all, you only want the memory so that you can make the most of *Secret of Monkey Island*, use a DTP package to the full or enjoy the luxury

of more fonts in *Write On*. You don't want to take a degree course in engineering to fit the upgrade.

Memory upgrades are broadly divided into two groups – those for the old-style STFM's, and those for the STE. Many companies like Ladbroke Computing (☎ 0772 203166) and Evesham Micros (☎ 0386 765500) offer to fit the upgrades for you if you send them your ST, but the cheaper alternative is to do

it yourself. If you own an STE this is usually – but not always – a straightforward case of taking the lid off your ST and inserting extra memory chips. If you own an STFM, then the task is a little more difficult – you have to track down certain chips and deal with chunky circuit boards. And, if you're really unlucky, you might even need to dig out your soldering iron. Before you buy a memory upgrade, have a look at

the sample ad below to see the things you should watch out for. Check that the company concerned offers some sort of repair service should you make a mistake – it happens to all of us!

Turn to page 26 for our complete step-by-step guide to installing your own memory upgrades. We've listed all the different circuit boards you're likely to encounter, so you can identify what type of upgrade you're after. Go for it.

WHAT YOU NEED TO LOOK OUT FOR BEFORE UPGRADING YOUR MEMORY

Not for STEs. These upgrades cannot be increased at a later date. Decide between these and an unpopulated board.

Not for STEs. Instead of buying a specific upgrade, you can buy an unpopulated board so you can then plug in and take out SIMMS. These enable you to add extra memory at a later date. You could buy an unpopulated board from one supplier, and SIMMS separately from someone else. Alternatively, you can buy the board with SIMMS already installed.

Some shifter chips are soldered directly into the circuit board – to upgrade, you need to desolder these chips and pull them out.

SIMMS are the chips which plug straight into your STE. If you buy an unpopulated board for an STFM, then you can buy SIMMS separately and install them at a later date. You can't mix 256k SIMMS with 1MByte SIMMS. Neither can you upgrade an ST to 3MBytes, so don't get ideas of buying three 1MByte SIMMS – though STFM's can be upgraded to 2.5MBytes. SIPS are chips on a circuit board like SIMMS but they're soldered directly onto the motherboard, so they're not as easy to install. Only a tiny number of STEs use SIPS.

Atari have produced STs with a wide variety of different boards. Complete instructions aren't very helpful if they don't cover your particular circuit board type. It's difficult to identify the type you actually have until you get the instructions.

It's usually more difficult to add extra memory to an STFM or Mega ST than any of the STE range.

Intellectual Hardware
The very best memory upgrades you can buy – and all at the best prices. You can't go wrong with Intellectual Hardware!

PLUG-IN EXTRA MEMORY FOR ALL STF MACHINES!
No soldering required

512K plug-in RAM upgrade..... £40
2MByte plug-in RAM upgrade..... £115

Alternatively, upgrade your STF with these SIMMS RAM expansions:

Unpopulated board £30
Board populated with 512K £45
Board populated with 2MBytes £80
Board populated with 4MBytes £140

Straightforward installation. Full step-by-step instructions included!

Please note there are a very small number of STs in existence which may require a little soldering if your shifter chip is not socketed. Please check before ordering or call our technical department for advice.

ATARI STE MEMORY UPGRADES – ADDING ADDITIONAL MEMORY COULDN'T BE SIMPLER!
Ideal for people who may need more RAM at a later date

1MByte upgrade (2x256K SIMMS) £25
2MByte upgrade (2x1MByte SIMMS) £70
4MByte upgrade (4x1MByte SIMMS) £140

Repairs **CALL FOR DETAILS**

All upgrades include a three month warranty against defective parts and labour. DIY kits come with complete instructions for fitting. THE ENTIRE JOB SHOULD TAKE NO LONGER THAN 20 MINUTES.

*If your STE can't be upgraded without soldering, send it to us and we'll fit it for you for a nominal £10 charge!

HURRY! SPECIAL OFFERS ON SIMMS FOR THIS MONTH ONLY!

SIMMS are getting cheaper and cheaper all the time.

Check that the company you choose can repair your ST if you cock it up.

A warranty against defective parts and labour isn't a lot of use if you blow up your ST during the installation process! Make sure the company will take your ST back if you really can't upgrade your machine.

It only takes 20 minutes to destroy your ST altogether! Allow about an hour to fit an upgrade into an STFM – less if you're installing an STE upgrade. It can take a good 20 minutes just to get the lid and shielding off your ST.

Very few STEs need soldering to upgrade them. Check that yours doesn't need soldering before you buy the upgrade – this makes a big difference to the one you need!

WHAT THERE IS TO BUY, WHERE TO GET IT AND WHAT WE THINK

SOFTWARE

PROGRAMMING

You're not limited to using the pretty awful *ST Basic* if you get the urge to write a program. There are plenty of other languages out there – some of them are more suited for games programming whereas others are biased towards more serious applications. *GFA Basic* is a pretty good bet for the novice programmer, while if you want speed and flexibility at the expense of user friendliness, *C* is the language you want. For programming games, *STOS* is highly recommended.

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| C Interpreter Hisoft Reviewed: 30, 31 | £59.95 ☎ 0525 718181 STF Rating: 95% | An ideal introduction to C, this interpreter enables you to make changes to your program and try them out straight away. Includes tutorials on GEM and the C language. |
| Devpac 2 Hisoft Reviewed: 30, 31 | £39.95 ☎ 0525 718181 STF Rating: 95% | Regarded as one of the most powerful assembly language development systems for the ST. Comes with an integrated editor/assembler/de-bugger and more. |
| GFA 3 Compiler GFA Reviewed: 2 | £24.99 ☎ 0734 794941 STF Rating: 91% | Having written your <i>GFA Basic</i> program to run it as a "stand-alone" program, compile it into machine code with this utility. |
| GFA Basic 3 GFA Reviewed: 30, 31 | £34.95 ☎ 0734 794941 STF Rating: 95% | Everything you need to write your own quality programs, including a comprehensive manual. A very fast, popular form of BASIC. A compiler to produce fast, small programs and an assembler are also available. |
| Lattice C Hisoft Reviewed: 30, 31 | £149.00 ☎ 0525 718181 STF Rating: 87% | Said to be the best version of C available on the ST, and although it is powerful, it is not an easy programming language to master. |
| Power Basic Hisoft Reviewed: 30 | £39.95 ☎ 0525 718181 STF Rating: 88% | Being a compiled language, this enables you to generate smaller, faster programs than with normal BASIC interpreters. Compatible with <i>ST Basic</i> and <i>FaSTBASIC</i> . |
| Prospero Pascal Prospero Reviewed: 30, 31 | £86.91 ☎ 081 741 8531 STF Rating: 95% | Pascal is widely taught in schools and colleges, but is not popular on the ST. This version is the best implementation of the language for the ST and comes with very good manuals. |
| STOS Compiler Mandarin Reviewed: 1 | £20.99 ☎ 0625 859333 | Having written your <i>STOS</i> game, the compiler produces a machine code version of it enabling it to run at high speed. |
| STOS Mandarin Reviewed: 30, 31 | £29.99 ☎ 0625 859333 STF Rating: 92% | This game creator software is a specialised programming language very much like BASIC, but optimised to handle sprites and GEM functions, play music or scroll the screen with extreme ease and speed. Well supported and popular. |

BUSINESS

Business programs come under three main categories: spreadsheets, databases and accounts programs. Spreadsheets are used to analyse information. They're particularly useful for assessing the results of questionnaires or performing "what-if" tests on your budget. Instead of analysing, databases store information like people's names and addresses. Many video libraries use databases to store information about the videos rented by people. Accounts packages are different again. These are used to keep track of income and expenditure. A good accounting package can also keep track of your VAT demands.

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| Adimens Kuma Reviewed: 28 | £121.30 ☎ 081 309 1111 STF Rating: 70% | A very powerful relational database. It's very straightforward and logical to use. |
| Cashbook Combination Digita Reviewed: 28 | £79.99 ☎ 0395 270273 STF Rating: 80% | Enables you to balance your books to trial balance stage. Enables you to keep track of profits and loss and your bank transactions. Balance sheets can be created. |
| DGBase Digita Reviewed: 28, 31 | £49.99 ☎ 0395 270273 STF Rating: 71% | Useful only if you have fairly modest database requirements. Designed to be useable with other Digita business packages. Only 64 fields of 255 characters can be used. |
| Home Accounts 2 Digita Reviewed: 28, 31 | £54.99 ☎ 0395 270273 STF Rating: 90% | Aimed at the home user, this accounts package enables you to keep track of your incomings and outgoings. Vastly improved from <i>Home Accounts 1</i> and far easier to use, as well as being presented very nicely. |
| Informer 2 Soft-Aware Reviewed: 23 | £56.74 ☎ 0101 714 9828409 STF Rating: 79% | This American program is a fairly easy-to-use database; you can incorporate graphics in the form of <i>Degas</i> pics, but there are plenty of cheaper home grown alternatives. |

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| K-Spread 4 Kuma Reviewed: 19, 28 | £136.30 ☎ 0734 844335 STF Rating: 80% | This popular spreadsheet comes with all you'd expect from a high-end package – including an enormous, but very helpful, manual. Graphics can be imported into documents and a vast range of statistical and trigonometrical functions can be applied to your information. |
| LDW Power Silica Reviewed: 28 | £114.95 ☎ 081 309 1111 STF Rating: 84% | This spreadsheet is extremely simple to use, made all the easier by a thorough manual. Can generate a range of different graphs to analyse your information. |
| Mini Office Communication Silica Reviewed: 28 | £21.95 ☎ 081 309 1111 STF Rating: 71% | This comms module facilitates the logging on to the many on-line services – if you have a modem! |
| Personal Finance Man. Plus Michtron Reviewed: 19, 28 | £39.95 ☎ 0726 68020 STF Rating: 81% | Helps the home user or small business handle all every accounting need – many useful features, see the demo on <i>STF Cover Disk 18</i> . |
| Personal Tax Planner Digita Reviewed: 28, 31 | £49.99 ☎ 0395 270273 STF Rating: 74% | An interactive tax advisor, it asks the questions, you provide the answers. It helps with the creative filling-in of your tax return form. |
| Prodata Arnor Reviewed: 7, 28 | £99.88 ☎ 0733 68909 STF Rating: 74% | You need 1MByte of RAM to run this powerful database program, and it's fully compatible with <i>Protext</i> . The latest v1.2 uses friendly GEM-like menus. |
| ProShare ST TC Devel'ts Reviewed: 15, 28 | £49.95 ☎ 0937 591145 STF Rating: 69% | A dedicated Shares database, monitors the progress of your investments and shows you that they can go down as well as up. Useful either as a warning – if you're really lucky – or as an educational tool to show how the stock market works. |
| Superbase Personal 2 Oxxi Reviewed: 19 | £112.12 ☎ 0753 551777 STF Rating: 91% | All-singing and dancing database program, intuitive VCR-like controls, copes with anything the home user requires. Can be upgraded to the Pro version. |
| Superbase Pro Oxxi Reviewed: 28, 31 | £255.39 ☎ 0753 551777 STF Rating: 86% | Wow, this is a bit pricey for an ST program, but it is rated as one of the best all-round relational databases for both private and business use. Also enables you to store graphics and text. |
| System 3 Digita Reviewed: 11 | £49.95 ☎ 0395 270273 STF Rating: 90% | Dead easy to set up, this is ideal for the small business. It produces professional-looking invoices, statements and so on for up to 99 customer accounts. |

MUSIC

Musicians the world over use the ST to create their masterpieces. As a result, there's a wide range of professional packages which have spawned a healthy selection of lower end-of-the-range programs ranging from straightforward sound-sampling to MIDI sequencing. To create music using MIDI, you need to invest in a MIDI device like a keyboard. These can be expensive, so low cost solutions like sound samplers and sequencers are available. They usually comprise a hardware cartridge for "grabbing" the sound in the first place and a software package to manipulate it. Besides specific music programs, there are also related programs like scorewriting packages.

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| Band in a Box Professional Zone Dist Reviewed: 29, 30 | £69.00 ☎ 081 766 6564 STF Rating: 94% | This reasonably-priced sequencer program generates auto-accompaniment to match your own song creation in a range of styles and tempos. Instant karaoke! |
| C-Lab Creator v3.1 Sound Tech Reviewed: 20 | £330.00 ☎ 0462 480000 STF Rating: 92% | This top-of-the-range sequencer is not cheap, but it might be worth its weight in gold if it helped you produce a hit – many pros and studios use it. |
| C-Lab Notator Alpha Sound Tech Reviewed: 23 | £225.00 ☎ 0462 480000 STF Rating: 85% | The cut-down version of the £499.00 <i>Notator</i> , this sequencer excels at producing printed score sheets of your ST-created music. |
| C-Lab Notator Sound Tech Reviewed: 30 | £550.00 ☎ 0462 480000 STF Rating: 92% | This up-market version of <i>Creator</i> enables you to sequence your MIDI music and then produce professional quality printed score sheets, or import these as IMG files into a DTP. |
| Chameleon Keynote Reviewed: 7, 12 | £89.00 ☎ 0761 32610 STF Rating: 85% | A very useful Desk Accessory for those MIDI maniacs with more than one synthesizer, this Librarian program can up-load, down-load and store your voice data for any synth. Update due soon. |
| EditTrack Gold Atlantic Audio Reviewed: 30 | £116.32 ☎ 071 272 8944 STF Rating: 86% | This great value sequencer is so flexible, no two musicians use it in the same way. Can handle pattern based or linear based sequences, and has graphic editing. |
| Fractal Music Composer Fractal Music Reviewed: 28, 30 | £65.00 ☎ 081 766 6564 STF Rating: 85% | Fractals are mathematical formulae which can create unusual visual patterns – this program harnesses them to assist in the production of music and saves them as MIDI files from which you can replay it or carry out edits. |

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| Freestyle pro | £179.00 | Another auto-accompaniment sequencer like <i>Band In A Box</i> , but not as accomplished and much pricier. |
| Zone Dist | ▣ 081 766 6564 | |
| Reviewed: 30 | STF Rating: 76% | |
| SLAM sample librarian | £89.00 | If you have an Akai sampler, <i>SLAM</i> makes it easy to find any |
| Intrinsic Technology | ▣ 081 761 0178 | thing from a sample to a single sound in your collection. <i>SLAM</i> |
| Reviewed: 34 | STF Rating: 80% | also enables you to print a disk label listing samples and even |
| | | read sample data from an Akai disk. |
| MIDistudio Master | £99.99 | A well-received challenger to the expensive sequencers, this |
| Ladbroke | ▣ 0772 203166 | has many powerful features but suffers from one or two annoy- |
| Reviewed: 30 | STF Rating: 91% | ing little glitches. |
| MusiCAL | £39.95 | A music teaching program that takes the student through a |
| Evenlode | ▣ 0993 898484 | range of activities using both MIDI and the ST's own sound- |
| Reviewed: 11 | STF Rating: 90% | chip. Ideal for schools. |
| Quartet | £49.95 | The simultaneous playing of four samples is possible with |
| Microdeal | ▣ 0726 68020 | this software. Many samples are available enabling you to |
| Reviewed: 5 | STF Rating: 94% | compose songs and play them with realistic-sounding voices. |
| | | <i>Quartet 2</i> is coming soon. |
| Sequencer One | Cover Disk 30 | This is a 32 track sequencer with a high level of recording |
| Gajits | ▣ 061 236 2515 | accuracy and resolution. <i>Sequencer One</i> comes with a full |
| Reviewed: 8 | STF Rating: 91% | sound chip editor which means you can play music through |
| | | any ST, but if you do have some MIDI gear, you can really |
| | | exploit its advanced music features. |
| Steinberg Cubeat | £295.00 | The more affordable version of <i>Cubase</i> – the £500-plus |
| Evenlode | ▣ 0993 898484 | sequencer. Excellent visual editing, intuitive operation and a |
| Reviewed: 17, 30 | STF Rating: 89% | good manual make this a good pro package. |
| Trackman 2 | £99.95 | Amazingly highly scoring sequencer, fast, powerful, yet easy- |
| Hollis Research | ▣ 0481 728286 | to-use and packed with features. An optional foot pedal helps |
| Reviewed: 22 | STF Rating: 97% | you to control it. |
| Virtuoso | £299.00 | By not using GEM, this British sequencer achieves great speed |
| Digital Muse | ▣ 071 828 9462 | of operation with fast machine code. |
| Reviewed: 3 | STF Rating: 88% | |

UTILITIES

There are certain programs you just can't afford to be without, programs which make using the ST more of a pleasure than a chore. These nifty bits of software range from useful Desk Accessories which can save time switching from program to program, to disk recovery programs – invaluable for salvaging seemingly lost data from corrupted disks. Other programs are necessities – UVK should be in everyone's collection, and once you've used *Neodesk 3* you'll wonder why Atari didn't do the Desktop that way to begin with.

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| 3D Constr'n Kit | £39.99 | Features a fantastic and versatile range of tools for creating |
| Domark/Incentive | ▣ 081 780 2222 | 3D games of your own. Comes close to DIY Virtual Reality. |
| Reviewed: 24 | STF Rating: 95% | Manual and VHS demo video provided, too – if you actually |
| | | watch the video, you'll find this dead simple to use. |
| Art Tutor | £19.95 | An unusual package that teaches you to draw, on both the ST |
| Castlesoft | ▣ 0333 421243 | and on paper using a workbook type manual and three disks |
| Reviewed: 21 | STF Rating: 73% | of exercises and programs. Good results are possible. |
| Astronomy Lab | £19.95 | Study the night sky at any date in history and from any location |
| ST Club | ▣ 0602 410241 | on Earth, all on your monitor screen! A first rate program, with |
| Reviewed: 9 | STF Rating: 90% | a large manual to teach you all about astronomy. |
| DC Desktop | £21.00 | This "alternative" Desktop enhances and improves on the bog- |
| Softville | ▣ 0705 266509 | standard Atari one by enabling you to add the features you |
| Reviewed: 21 | STF Rating: 71% | want with various modules, but it's not as good as <i>NeoDesk</i> . |
| DC Utilities | £21.00 | This collection of nine programs is a suite of useful utilities, |
| Softville | ▣ 0705 266509 | file compactors, RAMdisks, screen grabber and so on. Comes |
| Reviewed: 21 | STF Rating: 85% | with a good printed manual, superior quality PD. |
| Fastcopy Professional | £24.95 | This disk formatter and backup utility comes with an 80 page |
| The ST Club | ▣ 0602 410241 | manual to guide you through its extensive features. Keyboard |
| Reviewed: 34 | STF Rating: 83% | shortcuts, virus checker and high density formatting are all |
| | | available. |
| Flexidump Plus | £39.95 | <i>Flexidump</i> enables you to make user-defined size printer- |
| Care/Zitasoft | ▣ 0923 672102 | dumps of <i>Degas</i> , <i>Neo</i> or <i>Tiny</i> pics. Comprehensive manual via |
| Reviewed: 21 | STF Rating: 84% | on-screen help. Works on mono and colour printers. |
| Fontkit Plus 3 | £19.95 | This program by Jeremy Hughes is the best all-round Font |
| ST Club | ▣ 0602 410241 | Editor for the ST. Always being improved with numerous excel- |
| Reviewed: 20 | STF Rating: 90% | lent features. Load in fonts of various formats and then you |
| | | are able to convert, edit and adjust them all to suit your |
| | | desires. |

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| Harlekin 2 | £59.95 | The ultimate Desk Accessory – with this installed, you have |
| Hisoft | ▣ 0525 718181 | access to many valuable utilities including a text editor, |
| Reviewed: 27, 31 | STF Rating: 92% | comms package, RAMdisk, macros, and a comprehensive |
| | | manager/calendar module. |
| Knife ST | £34.95 | A powerful programmer's tool. Using <i>Knife</i> you can cut deep |
| Hisoft | ▣ 0525 718181 | into the innermost depths of your ST's disks, sectors, FATs |
| Reviewed: 31 | STF Rating: 86% | and hack your way around, altering and recovering data. |
| Mission Control | £20.00 | Of interest to serious programmers, this shell program can |
| GFA | ▣ 0734 794941 | control and co-ordinate the various GFA language programs, |
| Reviewed: 12 | STF Rating: 79% | launch applications and the like. |
| Multidesk | £29.95 | Gets round the problem of only being able to have six Desk |
| Atari W'kshop | ▣ 0753 832212 | Accessories available at once by enabling you to load or |
| Reviewed: 5, 31 | STF Rating: 80% | remove up to 96 Accessories at once if you have the memory, |
| | | with no re-booting necessary. Favourite Accessory setups can |
| | | be saved for future use. |
| Neodesk 3 | £39.95 | This truly excellent replacement Desktop utility makes the |
| Electric Dist | ▣ 0480 496666 | Atari GEM Desktop everything it should have been. Particularly |
| Reviewed: 18, 31 | STF Rating: 94% | useful for hard disk owners – multifarious features including |
| | | the ability to drag files onto the Desktop for instant access, |
| | | individual icons for specific programs, improved file handling, |
| | | extended formatter and thousands of improvements. |
| Shoot 'Em-Up Construction Kit | | price to be confirmed |
| Gremlin | ▣ 0742 753423 | This easy-to-use games creation program enables you to make |
| Reviewed: 4 | STF Rating: 86% | your own shoot-'em-ups, complete with sprites, music and |
| | | sound effects. |
| Ultimate Virus Killer | £9.99 | Virus killer general Richard Karsmakers has written one of the |
| Douglas | ▣ 061 456 9587 | best programs of its kind. A working demo version was on |
| Reviewed: 31 | STF Rating: 91% | Cover Disk 26, the full version has even more features. |
| Ultimate Virus Killer v5.3 | £9.99 | The latest version of this popular virus killer. <i>UVK</i> recognises |
| Douglas Comms | ▣ 061 456 9587 | 57 Boot viruses and five Link viruses. If it detects an infected |
| Reviewed: 34 | STF Rating: 80% | disk, you can destroy and then immunise a disk. |
| Universal Item Selector | £19.95 | You can get PD alternative fileselectors for free, but <i>Universal</i> |
| ST Club | ▣ 0602 410241 | <i>Item Selector</i> is the king. With the special Desk Accessory pro- |
| Reviewed: 5 | STF Rating: 90% | vided, you can call it up at any time for disk copying, file eras- |
| | | ing, and other operations. Indispensable. |
| Universal Item Selector v3.32 | £14.95 | Replace the traditional ST fileselector with this pro version. |
| The ST Club | ▣ 0602 410241 | You can change the directory line, filename extensions and file |
| Reviewed: 34 | STF Rating: 90% | mask by clicking and dragging a name from elsewhere in the |
| | | selector box. |
| ART AND GRAPHICS | | |
| With a palette of 512 colours on the ST and a palette of 4,096 on the STE, it's hardly surprising that art software has boomed ever since the first days of the ST. All of those listed here, except <i>Retouche</i> , come with the basic tools – different brush sizes, an airbrush tool, cutting, pasting and magnification. If you've got an STE, try to make sure your art program supports the extra colours like <i>Canvas</i> does, which we gave away on Cover Disk 34. | | |
| Canvas | Cover Disk 34 | A fully featured graphics package with support for the STE's |
| Microdeal | ▣ 0726 68020 | enhanced graphics capabilities. A clever 3D modelling section |
| Reviewed: 9 | STF Rating: 94% | enables you to create 3D shapes and use them in your pics. |
| Cyber Paint 2 | £49.95 | A drawing package with all the features of other graphics |
| Electric Dist | ▣ 0480 496666 | packages. Includes a unique animation section enabling you to |
| Reviewed: 24, 30 | STF Rating: 88% | define the start and end of an animation and then leave your |
| | | ST to work out the intermediary frames. |
| Cyber Studio | £49.95 | A 3D modelling studio which consists of a set of programs |
| Electric Dist | ▣ 0480 496666 | enabling you to create your own 3D objects and then illumi- |
| Reviewed: 30 | STF Rating: 79% | nate them from a wide variety of angles and in a selection of |
| | | different shades. |
| Degas Elite | £25.99 | One of the original ST graphics packages and still highly |
| Electronic Arts | ▣ 0753 549442 | praised. Good budget package with all you need to create |
| Reviewed: 30 | STF Rating: 90% | standard pics. There is no support for the enhanced STE |
| | | palette. |
| Deluxe Paint | £59.99 | Has all you need to create pictures but it's not as simple to |
| Electronic Arts | ▣ 0753 549442 | use as packages like <i>Degas Elite</i> because of the awkward lay- |
| Reviewed: 15, 19, 24, 30 | STF Rating: 88% | out of its menus. Limited animation is possible and has some |
| | | interesting techniques like Bezier curves and stencilling. |
| | | Support for all the STE's 4,096 colours. |
| GFA Draft Plus 3.0 | Cover Disk 34 | A sophisticated 2D Computer Aided Design drafting package |
| GFA | ▣ 0734 794941 | to help you plan everything from a spacecraft to the look of |
| Reviewed: 19 | STF Rating: 90% | your bedroom. The manual is available at a special price this |
| | | month – see page 11 for details. |

FREE!

WITH EVERY ST FROM SILICA

When you buy your new Atari 520, 1040 or Mega ST-E computer from Silica Systems, we will give you an additional £324.75 worth of software FREE OF CHARGE, including some great entertainment and productivity programs. These free gifts will introduce you to the world of ST computing and help you to get off to a flying start with your new ST. Plus, with every ST and every TT computer, we will give you up to 16 nights FREE holiday hotel accommodation for you and your family to enjoy a break at home or abroad.



TENSTAR PACK:

| | |
|---------------------------------|--------|
| 10 Superb entertainment titles: | |
| ASTERIX | £24.99 |
| CHESS PLAYER 2150 | £24.95 |
| DRIVIN' FORCE | £19.95 |
| LIVE AND LET DIE | £19.99 |
| ONSLAUGHT | £24.99 |
| PIPE MANIA | £19.99 |
| RICK DANGEROUS | £24.99 |
| ROCK 'N' ROLL | £19.99 |
| SKWEEK | £19.99 |
| TRIVIAL PURSUIT | £19.95 |

PRODUCTIVITY PACK:

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| 1st WORD | £59.99 |
| Word processing package from GST | |
| SPELL IT | £19.99 |
| Spelling checker to complement 1st Word | |
| ST BASIC | £24.99 |
| Basic programming language with tutorial | |
| TOTAL VALUE: | £324.75 |

16 NIGHTS HOLIDAY HOTEL ACCOMMODATION

Every Atari ST from Silica comes supplied with a free 72 page colour brochure with accommodation vouchers. These entitle 2 people to stay up to a total of 16 nights in any of 250 hotels with accommodation FREE. All you have to pay for are your meals (prices are listed in the brochure).

WORTH NEARLY £325

NEW!

EXCITING LINE-UP FOR

ATARI ST



NEW!



DISCOVERY XTRA



The Discovery Xtra Pack II is a top quality entertainment pack based around the 512K 520ST-E with 1Mb disk drive. It includes four great games titles plus some productivity software.

| | |
|-------------------|----------------|
| NORMAL RRP | £299.99 |
| £279 | |
| Ref: STC 6252 | |

HARDWARE:
520ST-E COMPUTER £299.99
8MHz 16-Bit 68000 CPU, 512K RAM, Mouse, TV Modulator, Internal PSU, 1Mb Disk Drive

SOFTWARE - ENTERTAINMENT:
ESCAPE FROM ROBOT MONSTERS .. £19.99
Fight to destroy the robot army
FINAL FLIGHT £25.99
Fast action beat-em-up game
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| | |
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- HARDWARE:**
1040ST-E COMPUTER £399.99
8MHz 16-Bit 68000 CPU, 1Mb RAM, Mouse, TV Modulator, Internal PSU, 1Mb Disk Drive
- SOFTWARE:**
PRO 24 III £150.00

| | |
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Which computer(s), if any, do you own? 79

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| | | |
|--|---|---|
| GFA Raytrace GFA Reviewed: 3 | Cover Disk 35 ☎ 0734 794941 STF Rating: 78% | Do you want to give your pics a new realism? Raytracing enables you to simulate light hitting solid surfaces. This is used to generate those shiny balls in so many PD demos. |
| Outline Art Halco Reviewed: 6 | £79.99 ☎ 0734 441525 STF Rating: 95% | If you want to get the best out of <i>Calamus</i> , the DTP program <i>O Line</i> enables you to generate fancy logos by manipulating existing fonts and pics to give curved and 3D type effects. V2 of <i>Outline Art</i> is out for the new colour <i>Calamus SL</i> program. |
| Paintpot Switchsoft Reviewed: 9 | £14.95 ☎ 0325 464423 STF Rating: 76% | This must be one of the easiest-to-use art programs for the ST. Although it lacks any animation features, it has a few unique capabilities and it is STE compatible. |
| Quantum Paint 2 Eidersoft Reviewed: 4 | £14.99 ☎ 0234 273000 STF Rating: 79% | Using some very clever techniques, this drawing program enables you to have up to 4,096 colours in your pictures. Unfortunately, it's slow and difficult to use. |
| Retouche CopyCare Reviewed: 21, 30 | £175.00 ☎ 081 686 8121 STF Rating: 81% | A retouching program for use with scanned images. Instead of the usual drawing tools, you have functions like charcoal, brush and water which act the same way as they do in real life. Block, zoom and masking functions can be used to alter small areas of the image. High res only. |
| Trip A Tron Llamasoft Reviewed: 24 | £34.95 ☎ 0734 814478 STF Rating: 91% | Not an art program in the traditional sense, but it certainly enables you to create some mind-teasing kaleidoscopic patterns. Using its own programming language, you can create cosmic colourful creations. |

WORD PROCESSORS/EDITORS

There are probably more word processors around for the ST than any other sort of program. The one you need depends on the sort of text processing you do: if you need fast bulk text entry, *Protext* is your best bet, but for fancy fonts and WYSIWYG layout, go for *Write On* or *WordFlair*.

| | | |
|---|---|--|
| Calligrapher Working Title Reviewed: 22, 26, 30, 31 STF Rating: 85% | £139.00 ☎ 0865 883592 | An excellent document processor, including features such as a <i>Degas</i> picture processor enabling you to alter images as you import them. Good for producing the occasional special letter or notice. |
| First Word Plus GST Software Reviewed: 22, 31 | £81.68 ☎ 0480 496789 STF Rating: 83% | The upgrade to the PD <i>First Word</i> word processor, these have become almost the "standard" WPs for the ST. A fairly capable program, stable and well supported, but lacking some of the flashy features now found in the newer packages. |
| K-Word 2 Kuma Reviewed: 28, 31 | £41.00 ☎ 0734 844335 STF Rating: 76% | One of the cheapest WPs, showing its age a bit, but compatible with the Kuma range of business programs. Uncomplicated. |
| Protext 5.5 Arnor Reviewed: 28, 31 | £152.75 ☎ 0733 68909 STF Rating: 95% | This latest upgrade adds a Collins Thesaurus with 43,000 entry words and a massive 827,000 responses to its armoury. Plus a stack of new features to give you more power than you will probably ever want. Superb printer support and the ability to mail merge from <i>Prodata</i> makes this a worthwhile upgrade. Doesn't quite give you on-screen what you get on paper. |
| Redacteur 3 The ST Club Reviewed: 34 | £119.00 ☎ 0602 410241 STF Rating: 90% | A very fast word processor from France. Incredibly powerful. It boasts lots of graphical features – though it doesn't have the near-DTP features of <i>Calligrapher</i> . |
| Tempus 2 Hisoft Reviewed: 3 | £39.95 ☎ 0525 718181 STF Rating: 78% | An incredibly fast GEM based text editor, this program can work on up to four files at once, and compare them. Of use to programmers, but contains some word processor-like features. |
| That's Write Compo Reviewed: 3, 22, 31 | £99.99 ☎ 0480 891819 STF Rating: 82% | Fast gaining friends, this multi-fonted word processor is not only easy-to-use, but is very powerful. It can import pictures, and is capable of virtually DTP-quality output. V2 just released. |
| Word Writer GST Software Reviewed: 22, 31 | £43.43 ☎ 0480 496789 STF Rating: 86% | Related to <i>First Word Plus</i> in style and content, but includes many normally expensive options like a Thesaurus and an Outliner. Imports text from other sources. |
| Wordflair Hisoft Reviewed: 22 | £59.95 ☎ 0525 718181 STF Rating: 87% | A word processor with an unusual range of additional features like a database and the ability to do statistical calculations and produce charts. There isn't a spelling checker, however. |
| Write On Compo Reviewed: 22 | Cover Disk 33 ☎ 0480 891819 STF Rating: 90% | This new WP offers upmarket DTP-type features at a budget price. You are not limited to one font either – several are provided and you can import others from various sources. Highly recommended. |
| Redacteur 3 ST Club Reviewed: 34 | £119.00 ☎ 0602 410241 STF Rating: 90% | This recently released french WP is the first real challenge to <i>Protext</i> in terms of speed and power. Uses GEM and can import a wide range of pics in all formats, multiple fonts too. Formidable. |

DESKTOP PUBLISHING

To give your words a professional look, you need to present them in the right way. Using desktop publishing programs, you can take words created in a word processor and lay them out in an eye-catching and imaginative manner. DTP programs are used to design the pages of magazines like these, to create letter headings, posters, party invitations, flyers and more besides. The more advanced DTP programs like *PageStream 2* can import colour screen pictures and use these in your pages. Inevitably, the quality of the printout depends on the quality of your printer. All DTP programs print pages using the graphics features of a printer, so for the best quality output you need an inkjet or laser printer.

| | | |
|--|---|--|
| Calamus Halco Reviewed: 6, 30 | £139.95 ☎ 0734 441525 STF Rating: 90% | The first DTP package aimed at high-end publishers. This mono only v1.09 has all the usual features plus the ability to run text around odd-shaped pictures and extensive text editing features. You need at least 1MByte of RAM to run it as well as a high resolution monitor. A new colour version has just been released. |
| Calamus SL Halco Reviewed: next month | £587.50 ☎ 0734 441525 | The long awaited colour version of <i>Calamus</i> is now available, and it improves on the capabilities of v1.09 plus supports colour separations as used for professional page layout. Very memory intensive, and a hard disk is necessary for large colour images. |
| Easy Text Plus zzSoft Reviewed: 30, 31 | £20.00 ☎ 0254 672965 STF Rating: 68% | The cheapest DTP program on the market. It lacks the frills of its big brothers, but is still a worthwhile introduction to desktop publishing. A demo of <i>Easy Text Plus</i> is available from the Public Domain, check our listing of libraries on page 38. |
| Fleet Street Publisher 3 Silica Reviewed: 6, 28, 30, 3 STF Rating: 76% | £204.30 ☎ 081 309 1111 | Has all the features – including picture runaround, graphics commands and image import functions – that you'd expect from a high-end desktop publishing package, though it's not easy to use. Capable of superb printing using the Ultrascript module. Overpriced. |
| PageStream 2 Soft-Logik Reviewed: 28, 30, 31 STF Rating: 95% | £169.00 ☎ 081 309 1111 | The first ST DTP package to support colour pictures – easily the best value and most versatile package available at the moment. Picture runaround, text handling facilities and a wide range of picture formats supported. Produces excellent output even on the lowliest dot matrix printer because of its font scaling technology. |
| Timeworks Publisher 2 Electric Dist Reviewed: 32 | See page 58 ☎ 0480 496666 STF Rating: 88% | The follow-up to <i>Timeworks DTP</i> . To run text around pictures, simply define your own outline around the image and the text flows around it. No support for colour. Easy to use, good printer support. Pretty quick compared to other ST DTPs when it comes to screen redrawing. |

EDUCATIONAL

There is a proliferation of educational software for the ST. The vast majority of it is aimed at the under 10s. Many packages, like *Fun School 3* for instance, are available for different age groups. Be careful not to invest in packages which look good and intrigue your children, but offer no educational benefits.

| | | |
|--|---|--|
| Better Maths School Software Reviewed: 29 | £22.95 ☎ 0353 6149477 STF Rating: 53% | Ages 12-16. A comprehensive tutorial and testing program, but one which is too wordy and actually pretty boring. Buy it only if you're allergic to textbooks, since there are no other advantages to it. |
| Count and Add Scetlander Reviewed: 30 | £25.99 ☎ 041-357 1659 STF Rating: 82% | Ages 4-7. Focuses on how to help your child learn to count and add up. Colourful and generally friendly. Good value both educationally and financially. Interesting, well-thought out, and puts the parent (or teacher) firmly in the driver's seat. |
| Death of a President Goodmans PDL Reviewed: 32 | £4.95 ☎ 0782 335650 STF Rating: 80% | Aged 11 upwards. Excellent open-ended three disk learning package on the assassination of JFK. Includes a photographic and audiographic database as well as an adventure game <i>A Day in Dallas</i> . Extremely interesting with lots to explore. |
| Donald's Alphabet Chase Mickey's Runaway Zoo Goofy's Railway Express Nathan Software Reviewed: 26 | £24.95 each ☎ 0268 541212 | Ages 2-5. Supposedly "educational" games from Disney. All come with superb Disney style graphics but the educational problems are not nearly challenging enough. |
| First Letters Rainbow Reviewed: 28 | £7.99 ☎ 0392 77369 STF Rating: 67% | Under 5s. Well-thought out and quite educational, the idea being that the child has to relate objects to their names. Needs an extra package to supplement it. |
| First Maths ST Club Reviewed: 29 | £2.50 ☎ 0602 410241 STF Rating: 75% | Ages 4-6. Three games to teach addition and subtraction. Very well presented, fairly straightforward to use and based on sound educational principles. Excellent value-for-money. |

The Digita range...

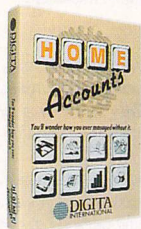
Home Accounts2®

An advanced version of Home Accounts, which is limited only by the capacity of your computer. Sophisticated reporting with graphics, and special options such as VAT and loan calculation facilities. Equally suitable for businesses, clubs and charities (ST and Amiga). **£54.99**



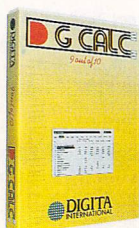
Home Accounts

Ideal for home users who want a simple low-cost way to plan and manage home finances. **£29.99**



DGCalc

This fast, simple spreadsheet includes many advanced features, including a windowing facility, so that you can look at different parts of the spreadsheet at the same time. **£39.99**



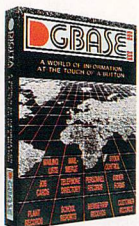
Mailshot Plus

If you ever need to send out mailings or print labels, this program is for you. Animated labels appear on-screen as a continuous sheet, allowing you to scroll backwards and forwards. You can search, sort and detect duplicate labels, print side by side and much more. **£49.99**



DGBase

If you're looking for fast access to information, and the ability to create customised reports, then this relational database is for you (ST). **£49.99**



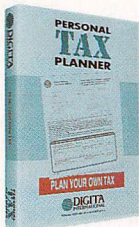
Day-By-Day

An excellent way to get organised. You'll be reminded of birthdays, meetings and appointments. It includes month/week/day planners and automatic reminders of overdue events. **£29.99**



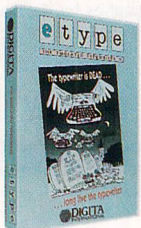
Personal Tax Planner

Plan your own tax with ease. This simple program will calculate your income tax liability, allowing you to perform instant 'what-if' calculations and produce pertinent facts about your tax position. A professional version is also available for accountants and financial advisers. **£49.99**



E-Type

Transform your computer into a type-writer. Because text is printed instantly, you can line up your form, press return and space a few times to move to the correct place, and then start typing. Ideal for filling in forms and envelopes. **£39.99**



System 3

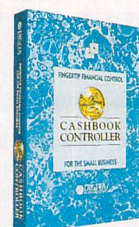
A suite of programs which perform all the basic functions for a small business. They may be used independently or integrated and include Cashflow Controller, Stock Control and Invoicing and Statements. **£59.99**



System 3e

Like System 3, but with extended capacity for customer accounts and stock items. **£79.99**

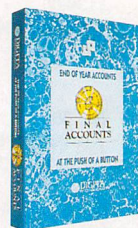
Cashbook Controller



Take the drudgery out of book keeping as this program will replace your cash and petty cash books. In addition to recording cash, bank and VAT transactions, you can enter credit sales and purchases, and for all these entries the program will automatically complete double entry routines, to ensure your records are always in balance. **£59.99**

Final Accounts

Using the information created with Cashbook Controller, this program will produce a complete set of accounts, including Trial Balance, Trading and Profit and Loss Account, Balance Sheet, as well as useful accounting ratios. **£39.99**



Cashbook Combo

A money-saving combination pack containing Cashbook Controller and Final Accounts. **£79.99**



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| | | |
|--|-------------------|--|
| Fun School 4 | £24.99 each | Packages for under 5s, 5-7s and 7-11 year olds. Each package contains six programs covering a variety of subjects including graphics, music, typing as well as the traditional subjects like geography and maths. Emphasis on learning through play. Very well-presented and a good investment in education. |
| Europress Software | ☎ 051-357-2961 | |
| Reviewed: 31 | STF Rating: 91% | |
| Henrietta's Book of Spells | £24.99 | Age: 7-14+ A well-put together package consisting of five word puzzles to complete. Facilities for parents to customise the program as well as report results. Makes learning to spell fun and exciting. |
| Scetlander | ☎ 041 357 1659 | |
| Reviewed: 28 | STF Rating: 92% | |
| Junior Typist | £16.95 | Ages 4-10. Apart from the rather boring presentation, not a bad typing tutor, with interesting activities like <i>Space Invaders</i> style typing and spelling games. Pretty good value for money. |
| School Software | ☎ 010-353 6145399 | |
| Reviewed: 30 | STF Rating: 78% | |
| Magic Story Book | £29.95 | Age: pre-school upwards. A complete creativity package - write a story, illustrate it with animated pictures, and add sound effects. You decide how far to take it in terms of technical know-how. A must for anyone with an ounce of creativity. |
| Softstuff | ☎ 0732 351234 | |
| Reviewed: 28 | STF Rating: 87% | |
| Memory Lane | £24.99 | Ages 2-6. Package to help children learn to discriminate between shapes through five different sorts of matching game. Somehow, doesn't quite make the grade, needing to be supplemented by other maths edsoft. |
| Ablac | ☎ 0626 332233 | |
| Reviewed: 27 | STF Rating: 64% | |
| Mix and Match with Maggie | £24.99 | Age: under 5s. A good shape-recognition package containing exercises designed to develop the sort of skills you need before you can add and subtract. Lots of scope for parental input. |
| Scetlander | ☎ 041 357 1659 | |
| Reviewed: 34 | STF Rating: 75% | |
| Moon Letters | £3.95 | Age: under 5s. A spelling game styled along the lines of a shoot-'em-up where the aliens are letters. A bit boring after a while, but you get a lot of control over the words used. Well worth buying. |
| Shoestring Software | ☎ 0792 649060 | |
| Reviewed: 28 | STF Rating: 67% | |
| Money Matters | £19.99 | Age range: very young. Brilliant graphics, and a keyboard overlay to help your offspring to learn about money through three games. There's no advantage using your ST rather than real coins. |
| Triple R | ☎ 0742 780370 | |
| Reviewed: 33 | STF Rating: 52% | |
| My letters, numbers & words | £24.99 | Age: 2-6. Helps kids to recognise letters and numbers, as well as keyboard familiarisation. Does what it does well, but it doesn't do that much. |
| Ablac | ☎ 0626 332233 | |
| Reviewed: 27 | STF Rating: 67% | |
| Pepe's Garden | £25.99 | Age: 3-7. Similar to the <i>Fun School</i> range in many respects, the difference being that this has more "fun" but less "school". Better suited to the lower end of the target age group. Superb graphics and sound. |
| Prisma | ☎ 0244 326244 | |
| Reviewed: 32 | STF Rating: 72% | |
| Picture Book | £19.95 | Age: 2-5. Consists of four different pre-school exploration type games, this package can be seen as an appetiser. Pretty good but there's more variety in <i>Fun School</i> and more depth in Scetlander's products. |
| Triple R | ☎ 0742-769950 | |
| Reviewed: 34 | STF Rating: 68% | |
| Read Right Away | £14.95 | Age: 5-8. Not a bad reading tutor - there are good graphics and sound effects, and you have a bit of control over the type of words used - but likely to get boring after a while. Good value for money, and can be used with older children who find spelling difficult. |
| HS Software | ☎ 0792 298283 | |
| Reviewed: 33 | STF Rating: 73% | |
| Robot Words | £3.95 | Age range: very young. A high-tech version of <i>Hangman</i> which knocks spots off some commercial edsoft. Colourful, with a facility to edit the word banks. |
| Shoestring | ☎ 0792 649060 | |
| Reviewed: 30 | STF Rating: 82% | |
| Shapes & Colours | £7.99 | Under 5s. A colourful and imaginative package which draws on tried and tested techniques for teaching basic maths. Good value for money. |
| Rainbow | ☎ 0392 77369 | |
| Reviewed: 29 | STF Rating: 81% | |
| Shoe People | £25.99 | Ages: 4-6. Six games to help your child with a variety of different learning tasks based on sound educational principles. User-friendly with colourful screens and interesting sound effects. |
| Gremlin Graphics | ☎ 0742 753423 | |
| Reviewed: 35 | STF Rating: 76% | |

HARDWARE

EMULATORS

As you know, the ST is a great machine, but occasionally through necessity you might want it to be another sort of machine entirely. Perhaps you use a PC at work and need to have one at home, too. Easy - a PC emulator tucked away inside your ST can transform it into a fairly powerful PC at much less than the cost of buying a separate machine. And with a Spectre GCR you can have a Macintosh Plus which is actually faster than the real thing for a fraction of the price.

| | |
|---------------------|-----------------|
| AT Speed C16 | £249.00 |
| Compo | ☎ 0480 891819 |
| Reviewed: 25 | STF Rating: 82% |

First came PC Speed, then the faster AT Speed, and now AT Speed C16 gives you super-fast emulation of the IBM PC, enabling you to run the latest Windows software with aplomb. Supports all screen resolutions up to VGA and offers 640K of free RAM on a 1MByte ST.

| | |
|---------------------------|-----------------|
| ATonce/ATonce plus | £199/£219 |
| Silica | ☎ 081 309 1111 |
| Reviewed: 25 | STF Rating: 85% |

These 16-bit 80286 emulators may require soldering into place - Silica can fit them if required. They come with good system software, and the Plus model runs at a faster 16MHz.

| | |
|-----------------|-----------------|
| PC Speed | £99.00 |
| Compo | ☎ 0480 891819 |
| Reviewed: 4, 25 | STF Rating: 74% |

This is a budget-priced PC emulator based on an NEC V30 central processing chip which is installed inside your ST without interfering with other upgrades, it enables the ST to run PC software. It also supports floppy and hard drives as well as the PC mouse but isn't actually very quick, though it is a good budget buy.

| | |
|--------------------|-----------------|
| Spectre GCR | £409.99 |
| Ladbroke | ☎ 0772 203166 |
| Reviewed: 25 | STF Rating: 94% |

It seems like magic, and it is! Using this box of tricks - which plugs into the ST's cartridge port - your ST turns into a Mac. Apple's Macintosh computers are the ones used in the publishing and media world, and are favoured by writers and journalists because of their excellent, but expensive, software. Now all this power is available on your ST, but a minimum 2MByte of memory is recommended because of the size of Mac software. There are also some problems likely with reading and writing to Mac disks.

| | |
|---------------------------------|-----------------|
| Moriarty Monulator v1.85 | £20.00 |
| Moriarty Software | ☎ 0293 539215 |
| Reviewed: 34 | STF Rating: 82% |

Don't buy a high resolution monitor, use this high-res. emulator with your monitor or TV instead. The monulator doubles the height of a medium res screen giving you a clearer and faster display than Public Domain emulators

HARD DRIVES

If you find you're always flicking through an enormous collection of floppies just to find one program, it's probably about time you invested in a hard drive. A 20MByte hard drive can store the equivalent of 22 double-sided floppy disks. The advantage is that your ST can read information from a hard drive over three times faster. Hard drives plug into the DMA port on the back of your ST. This is also the same port the Atari laser plugs into. If you intend using an Atari laser with your ST at some point, check you invest in a hard drive which comes with a throughport. Many hard drives come with an a memory cache which speeds up the rate at which you can read and write information.

| | |
|--------------------------|-----------------|
| Atari Megafile 30 | £369.00 |
| Silica | ☎ 081 309 1111 |
| Reviewed: 27 | STF Rating: 60% |

Has a short lead making it difficult to use on a 520 or 1040 ST. Only enough utilities to get you going. Very slow unless you're worried about compatibility, there's little to entice you to buy this outdated drive.

| | |
|--------------------------------|-----------------|
| Gasteiner 44R removable | £499.00 |
| Gasteiner | ☎ 081 365 1151 |
| Reviewed: 27 | STF Rating: 73% |

Uses removable SyQuest cartridges each capable of storing 40MBytes of information. Drive is noisy and slow. A poor manual, but the hard drive does come with some helpful utilities.

| | |
|-----------------------------|-----------------|
| Hunter 70MByte | |
| £359.00 for 70MByte version | |
| Hunter Business Systems | |
| ☎ 0382 581035 | |
| Reviewed: 27 | STF Rating: 52% |

70MByte DMA throughport. A 64K cache. Drive is very fast and quiet. At the time of reviewing this drive there were problems making it compatible with all ST software, though Hunter now insist this difficulty has been overcome.

| | |
|-----------------------------|-----------------|
| Ladbroke 52MByte | |
| £389.99 for 52MByte version | |
| Ladbroke | ☎ 0772 203166 |
| Reviewed: 27 | STF Rating: 81% |

One of the fastest drives available. ICD utilities provided and a helpful manual. 64K cache on the drive. A front-mounted power switch which could be prone to knocks.

| | |
|---------------------|-----------------|
| Mega Drive | |
| £269.00 for 32MByte | |
| Gasteiner | ☎ 081 365 1151 |
| Reviewed: 17 | STF Rating: 88% |

These come in a range of capacities up to 100MBytes, and you can have Seagate, Quantum or NEC mechanisms. Rather big and chunky, but they work well enough and are fully featured.

| | |
|-----------------------------|-----------------|
| Power 40MByte | |
| £329.00 for 40MByte version | |
| Power | ☎ 0234 843388 |
| Reviewed: 27 | STF Rating: 77% |

Comes with a write-protect switch on the back, effectively preventing you from writing any information to the hard drive. Noisy. Comes with all the ICD utilities. Simple to connect up, but there isn't any way to change the DMA address.

| | |
|-------------------------------|------------------|
| Power 40MByte Slimline | |
| £250.00 for 40MByte version | |
| Power | ☎ 0234 843388 |
| Reviewed: 27 | STF Rating: 74%. |

Slimline model no bigger than a small floppy drive. No throughport to enable you to connect other DMA devices but quick, cheap and reliable.

| | |
|----------------------------------|-----------------|
| Power 900E Data Injection | |
| £299.00 for 52MByte version | |
| Power | ☎ 0234 843388 |
| Reviewed: 17 | STF Rating: 85% |

Exceptionally small and quiet, as fast as much bigger units. Go for a larger capacity if you can - you need it! ICD utility software is supplied.

Power Drive 900
£399.00 for 40MByte version
Power ☎ 0234 843388
Reviewed: 17 STF Rating: 92%

This older model is great value although it's not as small as the newer 900E, but still more compact than most.

Protar 40DC
£285.00 for 20MByte version
Protar ☎ 0923 254133
Reviewed: 27 STF Rating: 90%

Good manual. Easy installation process helped by the excellent explanations. Quiet drive. 64K cache. Not as fast as Ladbroke's. Auto-booting and auto-parking. Good quality manufacture. Short DMA lead provided. Two year replacement warranty.

Protar 44R Removable £611.00
Protar ☎ 0923 25413
Reviewed: 27 STF Rating: 79%

A removable drive using the SyQuest mechanism used in the Gasteiner 44R. Considering the slow speed of removable hard drives, this one is actually quite fast.

Reference 40
£299.00 for 40MByte version
Evesham ☎ 0386 765500
Reviewed: 27 STF Rating: 73%

Very poor manual, but simple to install. Has a bulky external power supply. No power switch on the drive. DMA throughput. Average speed.

Vortex 40MByte
£599.00 for 40MByte version
Silica ☎ 081 309 1111
Reviewed: 27 STF Rating: 68%

A write-protect switch to protect your information. Instead of auto-parking at power off, it auto-parks the head after a pre-set period without activity – 15 minutes default. It also powers down the motor after about five minutes of no activity. Excellent manual. Smart case. Robust. Near silent drive. Auto-parking heads are difficult to get to grips with. Ineffective caching which is awkward to set up. Generally adequate performance, but expensive.

MEMORY UPGRADES

But do you really need extra memory? It depends on the uses you put your ST to. For playing games, you can probably get by with a basic model 520 ST, although even some games now need 1MByte of memory. But for business or serious uses like desktop publishing or music sequencing, you really need to have a bigger RAM in your ST. Assuming you already have a double-sided internal disk drive installed, a RAM upgrade should be your next priority. But is it worth going beyond 1MByte, to 2MByte or even 4MByte? Well, you might need to if you want to use large programs, DAs, replacement Desktops like *NeoDesk*, and also hook up an Atari Laser printer, which needs a minimum of 2MBytes just to control it! Before you decide to invest in an upgrade, turn to our step-by-step guide on what to do on page 26.

Alfa Data £99.00
Gasteiner ☎ 081 365 1151
Reviewed: 25 STF Rating: 83%

Comes as either a 0.5 or 2MByte populated board, we look at the 2MByte which takes any 520 ST to 2.5MBytes. Made in Taiwan, the quality of this neatly-made board looks good, and suppliers Gasteiner give a two year warranty with it – and also offer an extremely cheap installation service for the timid! You cannot upgrade this board any further, but if 2MByte is enough, it might be one to consider.

Power 2/4MByte upgrade
£99.00/£169.00
Power ☎ 0234 843388
Reviewed: 31 STF Rating: 92%

The memory is housed on a small PCB which plugs into the Video Shifter chip socket, and is linked to the MMU by the usual ribbon cable terminating in another small PCB which plugs onto the MMU chip. Jumper leads are supplied if existing memory needs to be disabled, and the instructions are clear and concise. Extra RAM can be added up to 4MByte.

Aries 2MByte £99.00/£169.00
Ladbroke ☎ 0772 203166
Reviewed: 25 STF Rating: 84%

Can be expanded up to 4MByte. The smallest, most compact board on test, the RAM chips reside on a PCB only 61mm long by 51mm wide, and with a total thickness of only 11mm – it easily fits over the Video Shifter chip. The kit requires the soldering of a number of colour coded leads attached to the board to various locations on the ST's circuit board. Ladbroke can fit it for a small charge.

Evesham 2MByte
STE: £80.00/STFM: £99.99
Evesham ☎ 0386 40303
Reviewed: 25 STF Rating: 72%

This kit uses SIMM chips which means that expanding it to 4MByte later is merely a matter of plugging in two small boards to the empty sockets on it. The RAM board connects to the Shifter and MMU chips via the normal method, and also takes a four way lead from the point which normally powers the internal drive, with an additional lead supplied to link the board to the drive, thus restoring its supply. Jumper cables are also supplied to disable any excess RAM already on board the ST.

Gigatron £279.00
Compo ☎ 0480 891819
Reviewed: 25 STF Rating: 82%

This board is a German product – very nicely made and easy to install. To install this board, the MMU chip is taken out of its socket using the tool supplied, and the PCB with the RAM chips on it are plugged into its place. The MMU is then plugged into this board, and a ribbon cable links this to the Video Shifter chip, where the usual procedure is carried out, that is, the Shifter chip removed, PCB plugged into its place, chip plugged into PCB. This isn't the cheapest board available, but it takes you up to maximum memory in one very easy move.

X-Tra RAM
£69.99/£159.99
Marpet Developments ☎ 0423 530577
Reviewed: 25 STF Rating: 86%

These boards from Marpet Developments are tried and trusted products. The board can be used to provide a 0.5MByte upgrade for any 520 ST, and is expandable to give a maximum memory of 2.5MByte by changing the RAM chips later if you wish. The RAM is on its own board, which connects to the MMU and Video chip via the usual two small PCBs at the end of ribbon cables. Clear instructions and a RAM testing disk are provided. This board is used by many of the RAM installation services. A new and cheaper deluxe version is now available.

FLOPPY DRIVES

There are many times when you need another disk drive – whether you want to backup your software or avoid tedious disk swapping in two-disk games, a second floppy drive is essential. They now come very cheaply, and plug into the back of your ST – no messing around with installation utilities required to set up a hard drive.

CSA 354 Drive £69.90
We Serve ☎ 0705 325354
Reviewed: 28, 31 STF Rating: 90%

Cumana make one of the best drives in terms of quality of build. Uses a Chinon FZ354 mechanism formatted to a maximum of 84 tracks. Heavy construction and well made, complete with moulded-on 13 amp plug. Excellent quality throughout.

PL720B Drive £69.95
Power ☎ 0234 843388
Reviewed: 28 STF Rating: 89%

The "B" stands for Blitz. A clever drive because you can use it in three modes: on, off and Boot from Drive B. Also comes with a virus blocker mode which prevents data being written to track 0 of a disk. High-speed disk copying is also possible. Uses an Epson SMD 300 drive mechanism and formats to 82 tracks. Ideal if you want a neat cheap drive.

Zydec Drive £54.95
Evesham ☎ 0386 765500
Reviewed: 28 STF Rating: 80%

Uses a Citizen OSDC-41C drive mechanism. Can format to 84 tracks but has a higher than average noise output. Poor quality on/off switch.

PRINTERS

So you've got your ST complete with word processing, graphics and desktop publishing programs, but sooner or later you're going to want to get those masterpieces you have created off the screen and onto paper. To achieve such hard copy you need a printer – the most essential hardware accessory for your ST. But buying the right one can be a daunting task, with dozens of makes on the market and each manufacturer producing many models, there are hundreds to choose between! Humble dot matrix printers are still around, but as the lasers and inkjets get cheaper, their days could be numbered.

BJ-10e £405.00
Canon ☎ 081 773 3173
Reviewed: 17, 25, 31 STF Rating: 90%

Not only the cheapest at under £270 in the shops, but also the most innovative and exciting inkjet printer. Its compactness and portability make it unique. Fast printing comparable to dot matrix speed on text. Splendid printing, solid blacks, no noise, a pleasure to use. Laser printing quality at a price you can afford!

DeskJet 500 £586.00
Hewlett Packard ☎ 0344 369369
Reviewed: 20, 25 STF Rating: 90%

This is probably the most sensible inkjet buy for heavier use, and it's not too dear at about £380 from discount suppliers. Bigger and sturdier than the Canon BJ 10e, but about equal in print quality. The DeskJet machines are generally better supported by ST software, and the in-built auto-sheet feeding tray is a bonus – it costs about £50 extra to fit one to the Canon BJ 10e.

HL4 £1291.00
Brother ☎ 061 330 6531
Reviewed: 25 STF Rating: 89%

A compact, attractive machine with a very good range of of emulations, it pretends to be a HP Laserjet 2, making it compatible with most software which drives laser printers. Print quality is equal to the Atari SLM 605, but it's not as fast, especially on graphics.

KX-P1081 £240.00
Panasonic ☎ 0344 853915
Reviewed: 25 STF Rating: 85%

A very simple to use printer, and is a good all-round performer despite what appears to be a low specification features-wise. At just under the £135.00 mark in the shops, it's the budget buy of the dot matrix group. The snap-in endless cartridge ribbon gives about the most solid black you could wish to see.

KX-P1123 £311.00
Panasonic ☎ 0344 853915
Reviewed: 25, 31 STF Rating: 90%

Available in the shops for about £185.00, this is the best buy best buy in the 24-pin group, and gives a pretty good all-round performance. This new model is fairly quiet, and is self-contained – no bits and pieces to assemble like most printers. Modern styling and design make this printer an attractive option.

KX-P4420 £1,404.00
Panasonic ☎ 0344 853915
Reviewed: 25 STF Rating: 80%

The most expensive and biggest laser on test, this is more at home in the office than the home. Although the printed results are very good, and it offers a good speed and range of fonts, the general user unfriendliness of this machine lets it down.



RICOH PCL5 LASER PRINTER

Ricoh UK Ltd is part of the worldwide Ricoh Group of companies, originally established in Japan, in 1936. With a turnover of over \$5 billion and 37,000 plus employees, Ricoh has been producing computers and peripherals since 1971. They are renowned in the industry as pioneers in the field of Office Automation Equipment and have won many awards for outstanding industrial design. Ricoh have employed all their expertise to produce a 'first' in laser printers for the worldwide market, the LP1200 with FLASH ROM.

Fully HP LaserJet III™ compatible, the new LP1200 laser printer employs industry proven laser technology. Unlike LED page printers, which use light emitting diodes, the LP1200's laser lightsource, focussed by high quality lenses, is able to produce the most accurate and intense printed images. It has 2Mb of RAM built-in and requires no additional RAM to print a full A4 page of graphics. Its fast, efficient processor and engine, together with straight paper path design, allows printing at a full 6 pages per minute. Unlike its competitors, this advanced laser engine enables the LP1200 to address a range of print resolutions up to 400dpi. A printer driver is scheduled for release in late April, to enable the Ricoh LP1200 to print at 400dpi from Windows 3.

Again, unlike the competition, the LP1200 includes a powerful document description language as standard. This language, 'LAYOUT', offers unique opportunities to develop custom-made printing systems. In particular, forms and document templates can be designed and stored electronically in the LP1200's unique FLASH ROM, alleviating the need for pre-printed forms!



The Ricoh LP1200 is a genuine laser printer and not an LED printer. Make sure you check out the competition!

See how the Ricoh LP1200 compares to its Laser Printer Competitors

| FEATURES | EPSON EPL4100 | HP LASERJET IIIP | MANNESMAN TALLY MT904+ | RICOH LP1200 |
|--|---------------|------------------|------------------------|--------------|
| Average Street Price (*expected) | £569 | £699 | £699* | £699 |
| Official RRP | £945 | £1,179 | £1,099 | £1,195 |
| Maximum resolution in dots per inch | 300x300 | 300x300 | 300x300 | 400x400 |
| Windows 3 Driver @ 400 dpi (April) | - | - | - | YES |
| Print Speed | 6ppm | 4ppm | 4ppm | 6ppm |
| Straight Paper Path | YES | - | - | YES |
| PCL 5 Printer Command Language | - | YES | YES | YES |
| HP-GL/2 Vector Graphics included | - | YES | YES | YES |
| Resolution Improvement/Enhancement | YES | YES | YES | YES |
| Full A4/300 dpi graphics with standard RAM | - | - | - | YES |
| Warm Up Time | <45 secs | <60 secs | 60 secs | 45 secs |
| First Page of Text Output | <20 secs | <40 secs | 34 secs | <15 secs |
| Document Description Language included | - | - | - | YES |
| Flash ROM | - | - | - | YES |
| Upgradable Firmware | - | - | - | YES |
| IC Card Slot | YES | - | - | YES |
| Scalable Resident Fonts - in HP LJ III Emulation | - | 8 | 8 | 8 |
| Resident Bit-Mapped Fonts | 11 | 14 | 14 | 14 |
| AGFA Intellifont Scalable Font Technology | - | YES | - | YES |
| HP LaserJet III Emulation Included | - | YES | YES | YES |
| EPSON FX Emulation Included | YES | - | YES | YES |
| IBM ProPrinter Emulation Included | - | - | YES | YES |
| Standard Tray Capacity | 100 | 70 | 100 | 100 |
| Protective cover on standard tray | YES | - | YES | YES |
| Cost per copy* | 1.65p | 2.00p | 1.71p | 1.65p |
| Min-Max Paper Weight in gsm | 60-157 | 60-105 | 60-120 | 60-157 |
| Ability to print on OHP Film | YES | YES | YES | YES |
| Ability to print on card (157gsm - Manual Feed) | YES | - | - | YES |
| Auto Sensing on Parallel and Serial ports | YES | - | - | YES |
| Standby - Noise Level | <40dB | 31.7dB | <35dB | <38dB |
| Printing - Noise Level | <50dB | 43.3dB | <46dB | <48dB |

*As quoted by manufacturers - 2/4/92

E & OE

All Trademarks are acknowledged

FLASH ROM UPGRADABLE!

400dpi 2Mb RAM 6PPM

FULLY HP LASERJET III™ COMPATIBLE

Silica Systems are pleased to introduce the revolutionary, new Ricoh LP1200. It has all of the specifications that you would expect to see in today's most technically advanced laser printer, plus a unique additional feature which places it far ahead of the competition - FLASH ROM. This 'Future Proof' technology protects the investment you make when you buy a Ricoh LP1200, as it enables you to keep up to date with new laser firmware developments. FLASH ROM is an area of memory inside the LP1200 which holds the printer's controller instruction firmware. If new firmware is developed, updated printer command languages etc, can be downloaded into this memory. Other manufacturers would require you to buy a new printer! Fonts, macros, additional emulations and graphics can also be stored in FLASH ROM, or on removable FLASH ROM IC cards. The new Ricoh LP1200 is the only laser printer to offer this FLASH ROM facility.

● **6 PAGES PER MINUTE**
Using a straight paper path design

● **PCL5 - SCALABLE FONTS**
Latest PCL version, includes HP-GL/2

● **SHARP EDGED PRINTING**
Ricoh FIAL (Fine Image ALgorithm) enhances resolution

● **400dpi RESOLUTION**
Default resolution - 300dpi. Will address 200, 240 and 400dpi.

● **2Mb RAM AS STANDARD**
Allows printing of a full A4 page of graphics at 300dpi

● **UNIQUE FLASH ROM**
For controller software upgrade and storage

● **IC CARD SLOT**
For programmable FLASH ROM cards

● **EXPANSION BOARD SLOT**
For improved connectivity to additional systems eg. PC-LAN, FAX etc

● **LAYOUT**
Document Description Language

● **SERIAL + PARALLEL PORTS**
For connection to PC compatibles and other computers

● **1 YEAR ON-SITE WARRANTY**
8 hour response

DUAL BIN VERSION
SPECIAL PRICE WITH UNIVERSAL FEEDER
(AS SHOWN ABOVE)

£799

+VAT= £938.83
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(NORMAL FEEDER RRP £135+VAT)

LP1200 (WITH SINGLE BIN) SILICA PRICE:

£699

+VAT= £821.33 Ref: LAS 5200

SILICA SYSTEMS OFFER YOU

- **FREE OVERNIGHT DELIVERY:** On all hardware orders shipped in the UK mainland.
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- **PAYMENT:** By cash, cheque and all major credit cards.

Before you decide when to buy your new laser printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or consumables, or help and advice. And, will the company you buy from contact you with details of new developments and products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for over 12 years and, with our unrivalled experience and expertise, we can now claim to meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Systems Service".

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LONDON SHOP: Selfridges (1st Floor), Oxford Street, London, W1A 1AB Tel: 071-629 1234
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Extension: 3914
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Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm Fax No: 081-309 0017

To: Silica Systems, STFOR-0692-75, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON THE RICOH LP1200

Mr/Mrs/Miss/Ms: Initials: Surname:

Address:

Postcode:

Tel (Home): Tel (Work):

Company Name (if applicable):

Which computer(s), if any, do you own?75B

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

Laserjet 3P £1,291.00
Hewlett Packard ☎ 0344 369369
Reviewed: 25, 30, 31 *STF* Rating: 91%

An exciting machine with HP's Resolution Enhancement Technology. This uses smaller-than-usual dots around the outside of parts of the image being printed – thus smoothing out the curves. It achieves this in its internal memory, independent of the program you are using. Output is finely detailed, giving clearly the best printed results. Although it comes with 1MByte of RAM onboard, you may need more. Very easy to use, and extremely compact in size. A little beauty!

LC-24/LC-24 Colour printers
£299.00/£349
Star ☎ 0494 471111
Reviewed: 17, 25 *STF* Rating: 80%

The 24-pin version of the LC 200, there is not a huge increase in print quality, which shows what a good machine the LC 200 is. It shares all the virtues of its little brother like a good range of emulations, electronic DIP switches and good standard of design. It's quieter too, but a bit on the pricey side.

LC-200 £304.00
Star ☎ 0494 471111
Reviewed: 17 *STF* Rating: 80%

From the popular Star range comes this budget priced printer with the colour option built in. You can use a plain black ribbon cartridge if you are only printing text, or slot in the four colour one – both are supplied. Relatively simple manual to get to grips with. Futuristic styling – with rounded edges – and good design have gone into this machine, paper handling is very good, and the control panel is simple and logical. Generally, a very pleasing all-rounder at an affordable price.

LQ-400 £203.00
Epson ☎ 0442 61144
Reviewed: 25 *STF* Rating: 85%

Very similar to the Epson LX 400 in appearance, but with a very much better quality of print. Unfortunately, it's even noisier than the LX 400, and to use single sheets of paper you remove the tractor feed, which is rather inconvenient. However, the quality of printed text is clearly the best of this group, making it a good choice for word processing work.

LX-400 £199.00
Epson ☎ 0442 61144
Reviewed: 17, 25 *STF* Rating: 75%

This is at the bottom of the Epson range, and can be picked up for around £140. You can't go very far wrong with the Epson name – the manual is good and the printer matches the Atari colour scheme. Despite all this, it's nothing to get excited about – it lacks proportional spacing (the ability to space individual letters according to their true width) and has one of the noisiest screeches you're ever going to hear when it's printing.

M-1309 £280.00
Brother ☎ 061 330 6531
Reviewed: 25 *STF* Rating: 78%

The most expensive printer in the 9-pin section, but also the also the most highly specified. Stylish design, easy font selection and a wide range of emulations are on the plus side. Printed output is arguably no better than the less expensive Panasonic, so you have to decide if the extra features are worth the considerable price difference.

M-1324 £378.00
Brother ☎ 061 330 6531
Reviewed: 25 *STF* Rating: 85%

The second dearest 24-pin on test at about £247 in the shops, and like the Panasonic 24 pin, has electronic DIP switches. But it offers the largest number of fonts in this group – eight with Shadow and Outline enhancements also available for the text. This machine produces excellent graphics output, only bettered by the dearer Citizen ProDot 24.

Paintjet printer £1,169.00
Hewlett Packard ☎ 0344 369369
Reviewed: 25 *STF* Rating: 80%

An unusual and specialised little printer which is widely used in the PC market for the production of high quality colour graphics. Not much ST software really takes advantage of its capabilities, perhaps this will change with the TT. It was the quietest machine tested, and at 180 x 180 dpi the text quality was good, but not very black. With the advent of colour DTP on the ST, it could come into favour.

ProDot 24 £703.00
Citizen ☎ 0895 272621
Reviewed: 25 *STF* Rating: 87%

This may be beyond the reach of many home users – being targetted at the professional/business market – but it's a good machine. It incorporates many advanced features, like a non-volatile memory enabling the storage of downloaded fonts and logos. The extra options like an auto sheet feeder and a colour conversion kit are not too expensive.

SLM 605 £1,056.00
Atari ☎ 0753 533344
Reviewed: 25, 31 *STF* Rating: 89%

This replaces the older Atari SLM 804 laser printer and is smaller and a bit cheaper. We tested this running on a TT with hard disk and the impressive thing is the speed of printing, it knocks the others for six, taking only 25 seconds to print a page of *Protext!* Print quality is excellent, but it only works with STs/TTs, unlike others lasers which connect to any computer.

SQ 850 £903.00
Epson ☎ 0442 61144
Reviewed: 25 *STF* Rating: 73%

A solid, well-built machine with a heavy price, advertised at about £550. More like a conventional printer in appearance than the other inkjets on test, but not up to their very high standards of output. Very fast text printing, and ten different fonts, but the output looks a bit spidery. A bit bulky for home use, but it's quiet and could be ideal for a small office.

Star LC-20 £234.00
Star Micronics ☎ 0494 471111
Reviewed: 34 *STF* Rating: 89%

This 9-pin dot matrix printer is capable of excellent Near Letter Quality results, though it's a little slow. Comes with four internal fonts. You can pick it up in the shops for £150.00.

Swift 9 £280.00
Citizen ☎ 0895 272621
Reviewed: 25 *STF* Rating: 87%

Providing competition for Star is this new model which offers colour via a plug on upgrade. Although this colour kit usually costs about £35, some dealers include it free. The general text quality is on a par with the Star LC 200, but its colour output is not quite so good. A little noisy, but switching and paper handling are good, and it's pretty fast on text. Available at discount prices.

Swift 24 £433.00
Citizen ☎ 0895 272621
Reviewed: 25 *STF* Rating: 75%

Selling for the same price as the Star 24-pin colour, this machine produces the best output of both text and graphics, but you may have to pay extra for the colour kit. The control panel switches are confusing on this one, and getting it to print in colour was difficult – the manual was not much help, either. Good specification, but not as useable as the other colour 24-pin printers.

MONITORS

Monitors offer a staggering increase in picture quality over a television display, and, of course, some software only runs on a mono monitor. For a monochrome display, you're pretty much stuck with the (admittedly good) Atari model, but for colour you can do better than that.

Philips CM8833 Mk 2 (colour)
£219.00
Swift Micros ☎ 0582 476257
Reviewed: 31 *STF* Rating: 90%

Philips turn these out by the million – they are attractive and well specified, and, with stereo speakers, it's just the job for your STE. Make sure you get the special monitor lead supplied.

SC1224 (colour) £260.00
Atari ☎ 0753 333441
Reviewed: 31 *STF* Rating: 84%

Although this monitor is based on the Philips' chassis, it's it's generally not as well regarded as the CM8833 – the colours might seem a bit dark for the taste of some people, although the picture quality is good. Atari have just released a new version of this monitor.

Atari SM144 (mono)
£139.00
Best Prices ☎ 0903 700714

Replaces the SM124 which was an excellent mono monitor for detailed work like desktop publishing work or word processing. Had a very crisp and steady monochrome display. Check out *ST FORMAT* next month to see if the new version is an improvement.

MUSIC

Making music on your ST is not a cheap hobby – once you've got the software you then need to shell out for the hardware. A keyboard, perhaps – then a sound sampler or two for those tacky "Ah yeah"s, some mixing equipment, a sound manipulation package so you can muck about with the samples. It won't be until you've got all this equipment that you'll be a star (who said anything about natural talent?). Bankrupt, but a star.

EVS-1 £299.00
Sound Tech ☎ 0462 480000
Reviewed: 15 *STF* Rating: 88%

This budget priced rack-mountable synth module has 100 voices built-in and you can program and load in your own, too, using the supplied software. Has an excellent range of features for the price. Takes a bit of time to get used to the sound programming pages. Sounds good, but you need a MIDI keyboard to play it.

Pro-Series 12 Sound Sampler
£199.00
AVR ☎ 0582 457348
Reviewed: 16,30 *STF* Rating: 84%

Aimed at the professional, this 12-bit input/output sampler sounds really good, and, despite being packed with features, it's very easy to use.

Pro-Series 16-bit Sampler
£350.00
AVR ☎ 0582 457348
Reviewed: 25 *STF* Rating: 94%

The very latest 16-bit version of AVR's sound sampler, this one is the biz. You can sample at CD quality, manipulate and adjust the recordings with superb software – a deserved *FORMAT* Gold.

Replay 8 Sound Sampler
£79.95
Microdeal ☎ 0726 68020
Reviewed: 18 *STF* Rating: 95%

This sound sampling add-on plugs into the ST's cartridge port and, using the phone sockets on it, you can input sound and digitise it, or play it back. Sophisticated software control to manipulate samples included. Excellent results obtainable.

Roland CF-10 Digital Fader
£129.00
Roland ☎ 0792 700121
Reviewed: 17 *STF* Rating: 86%

This touch sensitive ten channel MIDI mixer is designed to match other Roland modules like the CM 32 – you can set the level, and pan from left to right for most MIDI gear.

Roland CN-20 Musical Entry Pad
£129.00
Roland ☎ 0792 700121
Reviewed: 17 *STF* Rating: 87%

Designed to complement the above, this is like an extra keyboard. Press small switches and nearly two octaves of these "keys" work along with a slider and octave switch to give an almost eight octave range.

Sound Tools £2,050.00
Sound Technology ☎ 0462 480000
Reviewed: 28 *STF* Rating: 82%

Incredibly powerful recording and editing tool – sample your song onto hard disk and remix it in the digital domain! Requires a Mega ST and a large capacity hard disk. The recording system of the future.

Stereo Master £39.95
Microdeal ☎ 0726 68020
Reviewed: 34 STF Rating: 77%

Take samples in stereo using the two-channel, 8-bit analog to digital cartridge supplied. Samples are recorded in stereo no matter what brand of ST you own, but it is only possible to hear stereo samples if you're actually using an STE.

Stereo Playback £29.95
Microdeal ☎ 0726 68020
Reviewed: 22 STF Rating: 82%

This connects to the ST's cartridge port and delivers stereo sound via your hi-fi. Comes with demo software, including a drumbeat program. Less versatile than Monster Stereo Cartridge.

Stereo Replay £89.95
Microdeal ☎ 0726 68020
Reviewed: 29 STF Rating: 89%

A moderately priced sampler cartridge, records and playbacks in stereo. Includes excellent software and a MIDI compatible drum program.

MICE AND JOYSTICKS

The Atari mouse becomes something of a dinosaur when you see what other makes are available. Many of the other brands are much faster, easier to hold and they even look more attractive. And, of course, you're not going to get very far playing games without a joystick of some description. These come in all sorts of styles, from the plain and useful to the weird, extravagant and completely useless. Prices vary quite drastically, too, and remember that more expensive doesn't necessarily mean that it's any better.

Alfa Data Crystal Trackball £34.95/£39.95
Gasteiner Technologies
☎ 081 365 1102
Reviewed: 34 STF Rating: 92%

A trackball is like an upside-down mouse. They're particularly useful if you don't have acres of desk space to play with, because you keep the unit in one place and roll the ball instead. Even a moderate finger-roll takes you from one side of the screen to the other. This one comes in two versions – the more expensive has a ball that glows green when you press the left button, and red when you press the right one.

Gravis Mousestick £70.50
RC Simul'n's ☎ 0272 550900
Reviewed: 24 STF Rating: 90%

Whatever next? A programmable joystick. This impressive device is more responsive than a joystick and more accurate than a mouse. The Gravis Mousestick also includes analog to digital converters.

Gravis Switch Joystick £39.99
RC Simul'n's ☎ 0272 550900
Reviewed: 27 STF Rating: 85%

This robust joystick is slightly on the expensive side – although it's probably twice as good as a standard £10.00 stick, it does cost four times as much! Has more features than most standard joysticks, for example it has adjustable tension.

Mouse Tricks 2 £10.00
Jonathan Lawrence
76 Sistova Road, London SW12 9QS.
Reviewed: 34 STF Rating: 90%

This all-singing, all-dancing mouse utility program was demonstrated on Cover Disk 28. *Mouse Tricks 2* is a Desktop Accessory, enabling you to set the exact speed of your mouse, set up menus so that they only drop down when you click on them and define the right mouse to act as the <Shift> key. Many other ingenious features make this an invaluable utility.

Naksha Mouse £28.99
see page 58 ☎ 0458 74011
Reviewed: 7,31 STF Rating: 88%

This 280 dpi mouse is a far better rodent than the dreadful Atari device.

Power Mouse £14.95
Power ☎ 0234 843388
Reviewed: 31 STF Rating: 79%

Good, cheap and rather attractive, ergonomic, too. What more do you need?

Quickshot 3 Plus Turbo joystick £12.91
Bondelle Europe Ltd
☎ 081 365 1993
Reviewed: 31 STF Rating: 77%

Micro-switches and auto-fire.

Sting-Ray joystick £13.95
Spectravideo ☎ 081 900 0024
Reviewed: 31 STF Rating: 81%

Unusual handheld design with micro-switches.

SCANNERS AND DIGITISERS

You can do things the hard way, and slave over your ST doing all your graphics yourself. Or alternatively you can cheat, and treat yourself to a scanner or digitiser. Scanners enable you to – well, scan printed pages and convert them into images that you can then use on your ST, and then manipulate them in a graphics package.

Digitisers are devices that enable you to trace printed images by means of a puck – they're not quite as labour-saving as scanners but they do offer potentially better results.

Daatascan Pro £124.95
Pandaal ☎ 0234 857777
Reviewed: 15 STF Rating: 93%

This hand-held scanner is one of the fastest and easiest to use. The hardware is comfortable to hold, and the software very direct. For the quick production of quality scanned artwork, you can't go wrong.

Daatascan A4 Pro £499.95
Pandaal ☎ 0234 857777
Reviewed: 23 STF Rating: 96%

For professional use, this machine scans a full A4 page of paper. The hand scanners only cope with a picture four inches wide. A motorised sheet feeder guides the page through automatically. Excellent results – the printouts and on-screen images are detailed and consistent.

Geniscan GS4500 £129.99
Datel ☎ 0782 744324
Reviewed: 9 STF Rating: 82%

A hand scanner which has only two resolutions – 100 and 200 less than most of its competitors. Supplied with editing software and OCP Advanced Art Studio. Not STE compatible.

Golden Image £149.00
Ladbroke ☎ 0772 203166
Reviewed: 18 STF Rating: 95%

This scanner offers a good opto-mechanical unit, plus outstanding scanning/editing software in the form of Touch-Up. Not as fast and direct to use as the Daatascan Pro, but a splendid buy.

Mark 4 Cherry Digitiser £534.63
Cherry ☎ 0582 763100
Reviewed: 29 STF Rating: 88%

This flat tablet takes up to an A3 size sheet of paper. Using a special pen or puck both supplied you can "trace" anything off the page into the ST. Works with any GEM software you have – great for DTP, CAD or drawing programs. An expensive, but quality device.

MODEMS

With a modem you are able to get your ST to "talk" to other computers and bulletin boards over the phone lines using comms software, and upload or download files and programs. Modems offer you various levels of features and speed of use, from the simple ones that are very cheap, up to fast, expensive ones.

2400 modem £119.99
Supra ☎ 081 566 6677
Reviewed: 31 STF Rating: 90%

A recent price cut has made the Supra 2400 modem more of a bargain than it already was. It also has the advantage of auto-dialling and auto-answer features and it is fully Hayes compatible. This American-made modem operates at 2400 Baud, and comes with a full five year guarantee.

9600 Plus £349.00
Supra ☎ 081 566 6677
Reviewed: 31 STF Rating: 84%

This latest model is the top-of-the-range. It is a V32 9600 Baud model, and is fully Hayes-compatible as well as auto-dialling and auto-answering. The Supra 9600 Plus comes with a connecting lead for your ST. Just watch out that in the excitement of playing with all the features you don't run up your phone bill too much!

Fax modem £299.00
Atari W'kshop ☎ 0753 832212
Reviewed: 31 STF Rating: 78%

What a good idea, a modem for your ST that not only enables you to do all the usual comms things, but also sends and receives faxes! Handles graphics as well as text – even screenshots. Display to screen, save to disk or print out with software provided. You may need to add your own scanner to the system.

MISCELLANEOUS GADGETS

There're always some, aren't there? Widgets which don't really fit into any other category but deserve a mention somewhere. These gadgets aren't going to appeal to everyone but are undoubtedly useful and – perhaps even invaluable – for particular applications.

K..AT £69.00
Q Logic ☎ 0796 2001
Reviewed: 29 STF Rating: 82%

This is a remote control unit which can be plugged into the ST and configured via a Desk Accessory to work up to 14 different keys. Its main use is for working sequencer programs while far away from your ST – at your synth, for example. It's easy to configure, and then all you have to do is press the buttons.

Met-2 Satellite Receiver £939.94
ICS ☎ 0903 731101
Reviewed: 11

A special receiver, pre-amplifier and antenna plus the appropriate software enable you to receive, display and manipulate live weather pictures direct from the Meteosat satellite on your ST's screen.

SIMM conversion £119.95
Evesham ☎ 0386 765500
Reviewed: 31 STF Rating: 86%

Gives any STFM the ability to use Single Inline Memory Modules, a convenient form of plug-in memory chips.

ST-IC £39.95
Romulus Data Systems
2 Downs Grove, Southview Park,
Basildon, Essex SS16 4QL
Reviewed: 30 STF Rating: 61%

A technically clever – but practically not that useful – device which enables your ST to control all your infra-red remote control units, like your TV, video, and CD player. Works, most of the time, but has problems learning commands. After that, though, it's easy. Essentially, it's a remote control for your remote control.

Teletext Adaptor £152.16
Microtext ☎ 0705 595694
Reviewed: 5 STF Rating: 81%

Instead of watching your TV to see the CEEFAX or ORACLE you can use this device which enables you to not only display teletext pages on your monitor, but also save them to disk.

The Game Makers Manual £12.95
Sigma Press (ISBN 1-85058-158-4)
☎ 0625 531035
Reviewed: 34 STF Rating: 80%

This 280 page book tells you everything you need to know to design and program your own games using both STOS and ST Basic.

STF SPECIAL

VENTURE INTO A NEW MUSICAL WORLD

In January's special issue of *ST FORMAT*, we gave away a unique version of Gajits' *Sequencer One*. It has all the useful MIDI features of the original *Sequencer One* plus a special sound-chip editor, so it can be used with any ST – even if you don't have any MIDI gear connected. STE owners can hear their musical creations in stereo, thanks to support for the STE's enhanced music capabilities. The issue included a free "Get You Started" supplement to help you get going. If you missed all this, turn to page 44 to order your copy of the issue.

To make sure you get the most out of *Sequencer One* we're offering special deals on other associated packages. For even more features, you can invest in Gajits' latest upgrade – *Sequencer One Plus*. Then there's the Sample Series, which gives you a set of samples you can load into *Sequencer One* (or *Sequencer One Plus*). The Hit Kit enables you to start writing your own professional drum tracks and bass lines.

Don't miss these special offers – start making the most of *Sequencer One* now!

Even more great ST offers

SEQUENCER ONE PLUS UPGRADE KIT

GAJITS MUSIC SOFTWARE

Don't miss out on this incredible offer! Upgrade to *Sequencer One Plus* for a host of extra features including the unique Juke Box screen and Gajits' new *Diamond Drag* note editing system. Also includes: improved sample playback, support for the Microdeal range of sample replay hardware, tempo maps, auto count in, MIDI system handling, track solo, extra quantize options, and much more! All of this will sell for £129.95 (RRP). For a short time only, *Sequencer One Plus* is available as an upgrade kit for *Sequencer One* owners (that includes all Cover Disk owners) at just £49.95 (RRP). We're offering it to you at a mere £39.95 – an amazing total saving of £90!

DESCRIPTION: *Sequencer One Plus*

PRICE: £39.95 ORDER NO: ST395



SEQUENCER ONE USER KIT

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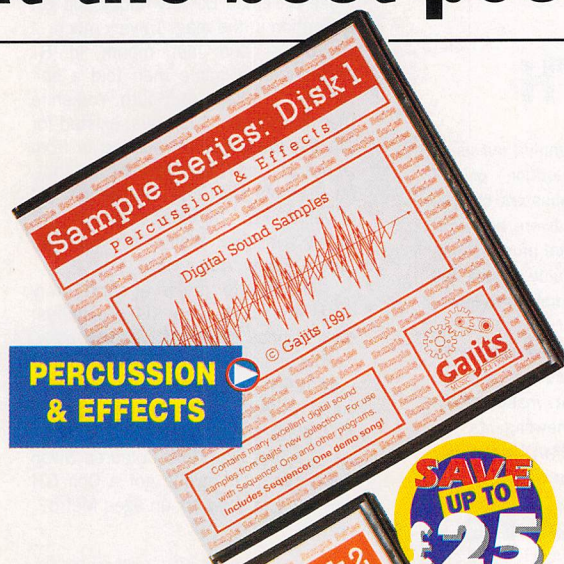
The *Sequencer One* User Kit contains the full program User Guide and a User Registration Card. The User Guide includes a beginner's introduction to sequencing and MIDI, lots of pictures and examples, and an index. The User Registration Card entitles you to free update information and the Gajits telephone Helpline support service. You can benefit from all of this for just £6.95!

DESCRIPTION: *Seq. One User Kit*

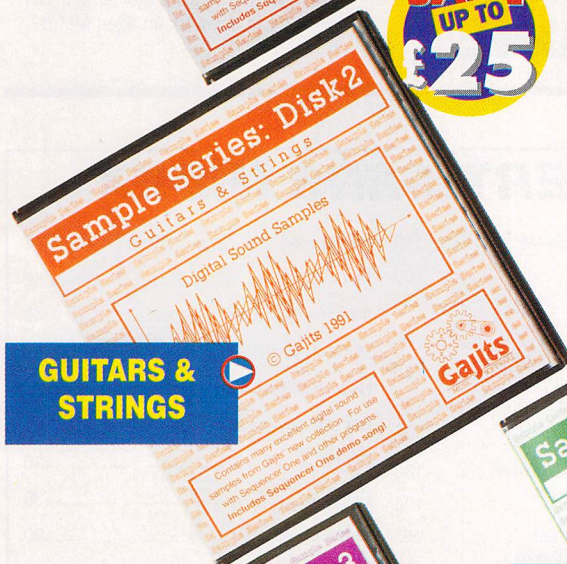
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A collection of five volumes of digital sound samples for use with *Sequencer One* and *Sequencer One Plus*. Each volume contains up to 80 high quality samples and includes a specially written demo song. Each volume costs just £9.95 (RRP £12.95) and needs 1MByte of memory to run. The complete set can be yours for only £39.95 (RRP £64.75) – saving you nearly £25!

DESCRIPTION: *The Samples Series*

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THE HIT KIT

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The *Hit Kit* is a music composition system to use with *Sequencer One* and *Sequencer One Plus*. It can help you to create professional sounding drum tracks, bass lines, and other accompaniments in a wide range of musical styles – for example, ballad, blues, disco, house, latin, reggae and techno. Very little previous musical knowledge is needed to obtain frighteningly rapid results! Can you write a number one hit? Here's the kit to help you, only £24.95 (RRP £29.95)!

DESCRIPTION: *The Hit Kit*

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Endings, eh? They're a lot like beginnings in many ways, except in different places.
We've seen some endings in our time but none of them as good as this one...

Twilight zone

AND THERE'S MORE NEXT MONTH

In July's *STF* we're telling you all you need to know to improve the performance of your machine and offering you a special service to upgrade or repair your ST for the best price anywhere. If you've ever wanted to rip the lid of your ST and install a new version of TOS, more memory, PC emulators, a blitter chip or anything else, make certain you catch this special issue. We're also offering to repair any broken STs if you're having trouble.

Then we're giving away another complete package worth at least £50 on our second Cover Disk - as well as more exciting goodies on our main Disk.

Last month, we promised a special comms feature but we had to hold this over so that we could get some new modems. Next month we're bringing you the definitive guide to all you can do using your ST and a simple modem setup. We're also putting some fabulous comms software on the Cover Disk.

We've also got a feature looking at what the game heroes get up to when they're not performing miracles on your monitor or TV. Ever wondered what Rick Dangerous does when he's not leaping around chasms or what Dizzy gets up to with eggs of the opposite sex? We reveal

all on Thursday 11 June.

Of course, we'll be running our usual regulars - another selection of *ST Answers* tips, more *Gamebusters* cheats, reviews of the latest hardware and software, part two of our fractal programming series and an updated guide to the full range of ST software and hardware in our Buyer's Guide.

Turn to page 44 to guarantee your copy of next month's issue or use the coupon below. Failing that, make certain you get down to your newsagents' on Thursday 11 June. *ST FORMAT* is the only magazine to look after your wallet.

NEXT ISSUE OUT THURSDAY 11 JUNE

SOB WAIL MOAN

An air of gloom once again descends over the denizens of *ST FORMAT* as we wave bye-bye to another stalwart. Paul Morgan, Art Editor since issue 30, apparently got wind that the weather was better in Florida, and is off to investigate "in the spirit of international climatology."

So, as Paul continues his tireless quest to see how long he can spend lying in the sun without exploding, we here at *STF* carry on with a brave face. Patient Art

Assistant Steve Fardy moves on up to Art Ed and a new, fresh-faced and willing Art Assistant, Steve Mayer, bounds into place to continue the good work on Britain's best-selling ST magazine.

Next month in your incredibly uper soaraway *STF*: will Chris Lloyd ever regain his sanity? Will Ed Ricketts ever learn to love that picture in *Gamebusters*? Will Paula Richards ever overcome her fixation with elderberries? Does anyone really care?

Having trouble finding *ST FORMAT*?

It's no surprise, but Britain's top ST magazine is regularly selling out - in some places, before you even get in the newsagent's door on the official on-sale date.

So, if there isn't a copy on the shelf, ask for *ST FORMAT* by name. There may be more in the back room. If not, check a big newsagent

like John Menzies or WH Smith. If you don't want to subscribe - but see page 44 for some good reasons why you should - fill in the form below and hand it to your newsagent, who'll be delighted to reserve you a copy.

Still no luck? Then call Kate Elston on 0225 442244, and she'll sort it all out!

Reserve your copy of *ST FORMAT*!

Please reserve me a copy of *ST FORMAT* every month, beginning with the July issue, out Thursday 11 June.

Name.....

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To the newsagent: *ST FORMAT* is published by Future Publishing and is available from your local wholesaler.

Edmundo's personal bits

Anyone out there got a copy of *Virus* they'd be willing to sacrifice to *STF*? Games Editor Ed Ricketts recently lost his copy in a horrific mangling accident and is desolate. Anyone prepared to donate a copy to us will make a Games Ed very happy and get a mention in the mag. Ta very much.

Oh - and last month in *ST Answers*, that same man told a certain G T Pollard of South Yorkshire that no version of *Tempest* existed for the ST. Well, a letter flooded in from Darryl Still of Atari informing us that, on the contrary, Atari themselves did a version of *Tempest*, but it's not widely available. Well that's what Ed meant, Darryl. (Ahem.)

Anyway, to make a short story long, Atari have sent us a *Tempest* disk to pass on to GT. Unfortunately, we haven't got his address any more - so if G T Pollard of South Yorkshire could write in to the usual address we'll gladly pass on the game to him.

It's just like *Multi Coloured Swap Shop*, isn't it? Anyone got a Golf GTI they want to swap for an aged Metro?

ADVERTISERS INDEX

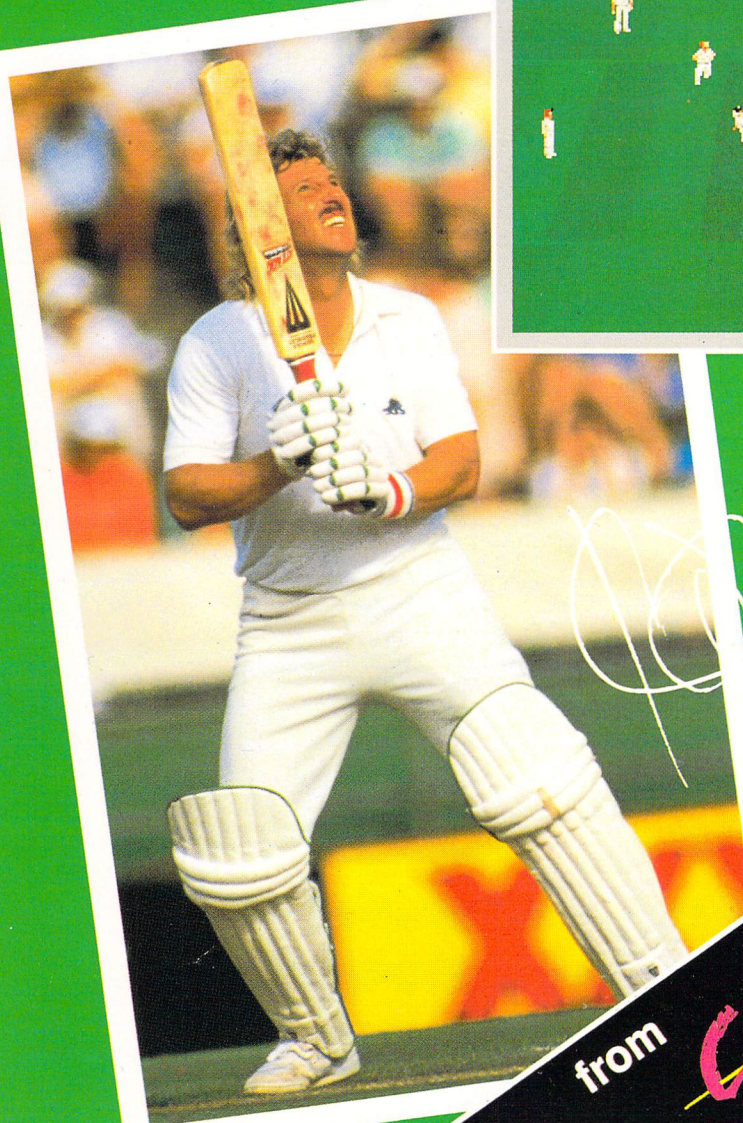
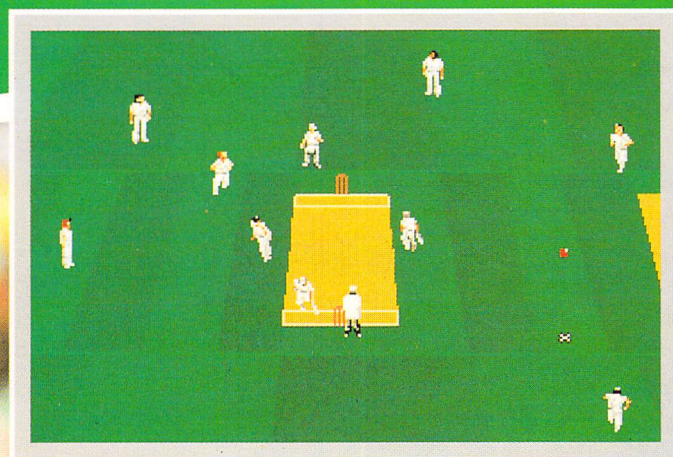
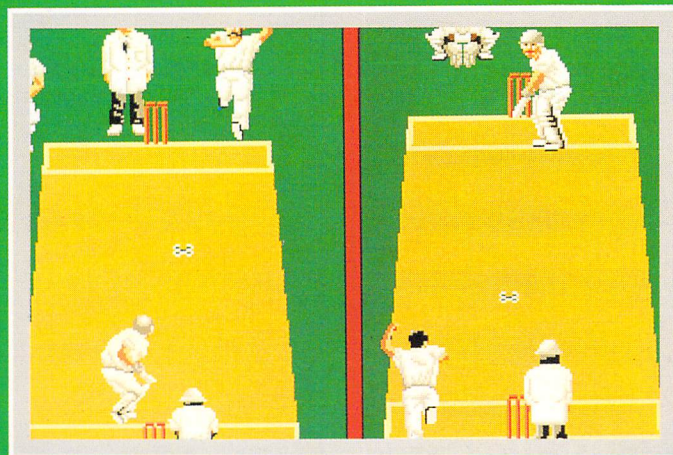
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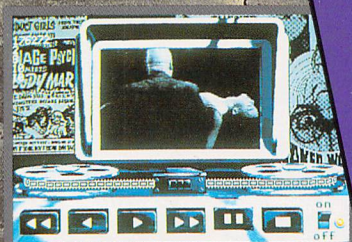


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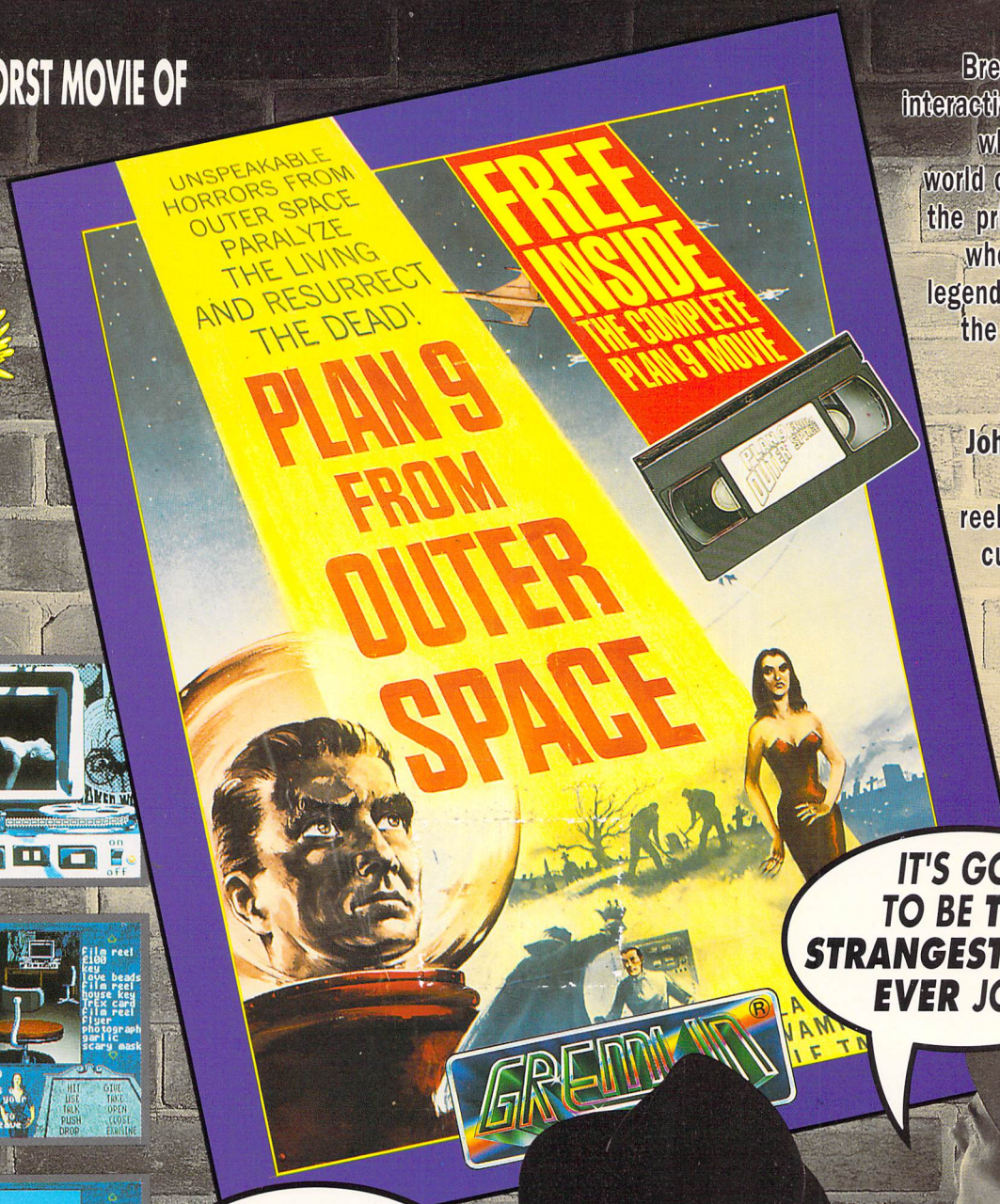
Screen shots from PC version



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