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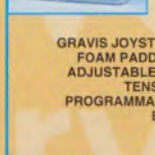

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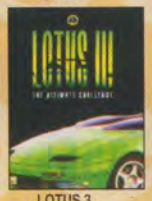

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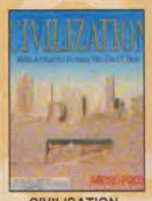

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NOVEMBER 1993

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COVER FEATURE

BEYOND HARD DRIVES...

Ten years ago, most home computers loaded their programs from a cassette recorder but the appearance of the ST changed that. Five years ago, only a small minority owned a hard drive but the advances in technology led to a drastic fall in price. And today?

This issue looks at the current trends in data storage; floptical, optical and syquest. We review four different units and give you all the facts that you need to make an informed decision.

Beyond hard drives – start reading on page 16.

Zool – finally available on the ST, but is it worth the wait? Judge for yourself by reading our review on page 46...

ON THIS MONTH'S COVERDISK

FLAIR PAINT

... a superb paint package, unique in almost every way! Can run as a desk accessory or a stand-alone program and works equally well in mono, on a high resolution monitor, or in colour, on a low resolution screen or TV.

More important, it will happily run on a 520 or 1040 making it the perfect cover disk program!

There's an A to Z guide to the functions on the cover disk and an excellent mini manual on page 10 to get you started.

And to get you creating your own pictures as quickly as possible, there's a further two-page tutorial on page 12...

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ONLY THE BEST IS GOOD ENOUGH...

The last editorial outlined the strategy that ST Review follows in giving you the best cover disks of any ST magazine. But this only told half of the story; the other part concerns how we decide whether a program is good enough for our disk.

There are times when a good demo of a very popular program can be better than a commercial one that nobody has heard of, although this is a tack that ST Review very rarely follows. However, I recently considered the possibility of getting a cut-down version of Calamus S which I felt would interest many of you. The idea was to impose certain limitations on the program such as a small number of fonts, a maximum of a page or two per document and a watermark across the printout to prevent commercial use. With a new distributor in the UK, this seemed the perfect opportunity to push the program back into the limelight after spending some time in the background.

Without going into all the gory details, suffice to say that this particular deal turned very sour and I found myself in the unenviable position of apparently being played off against another ST magazine by the distributor. Despite this, ST Review's proposed offer was accepted and the program appeared to be winging its way to this magazine... until I found out what the demo offered – no "save" facility, erasure of the document in memory as soon as printing had taken place and a 5cm high watermark, in dark grey letters, diagonally across the page. Good enough for ST Review? No way!

The chances are that you have some interest in DTP and would like to see a good demo of one of the best packages on the ST. No problem – a demo of Calamus S already exists! This can be obtained from most PD libraries, including the ST Club on 0602 410241 (disks WPR 120 and 121 at a total cost of £2.90). While this also has "Calamus S" watermarked across the printout and the "save" facility disabled, it keeps the document in memory after printing. This allows you to continue experimenting until your heart's content, so giving you a true feel of the program.

What did ST Review get instead? Now that would be telling – you'll have to wait for our Christmas special to find out...

Vic Lennard
Editor

A WALK ON THE SERIOUS SIDE...

Alexandra Palace in North London was the venue for the London Atari Show on September 26. Following on from the show in West London the previous month, over 600 Atari owners took the opportunity to see the latest products.

Crowds gathered around 16/32 Systems to see *Xenomorph 2*, a superb 3D rendering program, and *Prism Paint 2*, possibly the most powerful paint package ever released on the ST.

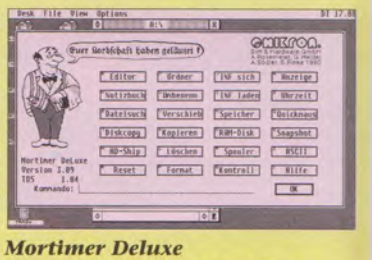
Videomaster Falcon also generated a great deal of interest on the HiSoft stand. Using a cartridge interface and the Falcon's 16-bit inputs and outputs, the program is capable of digitising video at up to 25 frames per second, in 64 shades of grey, and recording high quality audio.

Released on the day of the show, *Studio Photo*, a powerful image retouching and processing package, won many friends on the Compo stand while Club Cubase showed a final test version of Steinberg's *Cubase Audio*.

With products on view from companies such as System Solutions, Titan Designs, ST Club, CGS and Prospero, along with bargains from Golden Image and Warpzone PDL, this event promises much for the future. The next venue is the National Motorcycle Museum in Birmingham on December 5 followed by Haydock Park Racecourse in Manchester on December 12. More details from Titan Designs on 021-414 1630.

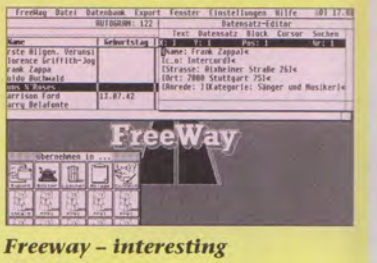
ST CLUB SIGNS UP OMIKRON

The ST Club has acquired the UK rights to all ST and Falcon software developed and published in Germany by Omikron GmbH. *Mortimer*, the multi-functional utility that pops up at the press of a couple of keys, has just been re-released; priced at £14.95, it features a text editor, virus guard, flexible RAMdisk, calculator, screen grabber and a number of disk utilities, but does not run on the TT or Falcon. *Mortimer Deluxe* adds Falcon compatibility and extra features: ten text editors, an alarm with alarm text, file encryption, a time scheduler, the ability to search for text in any file, and much more. Price and availability to be announced.



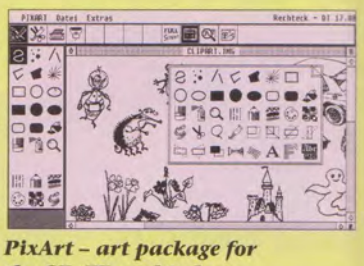
Mortimer Deluxe – Falcon compatible utility.

FreeWay is a cross between a free form card filing system and a traditional database. It runs on any ST, TT or Falcon and will cost around £120 when available later this month.



Freeway – interesting database program.

The final Omikron product is *PixArt*, a paint package for the ST, TT and Falcon. GEM-based and *MultiTOS* compatible, it supports digitisers, graphic tablets and all GEM-compatible graphics cards. *PixArt* runs in any resolution from mono to true colour and is available now at a cost of £34.95, or for £49.95 bundled with *Imagecopy 2*. A text styler package that allows *PixArt* to import Calamus fonts should be available later this month. For further details, contact The ST Club. Tel: 0602 410241; Fax: 0602 241515.



PixArt – art package for the ST, TT and Falcon.

GAMES WITHOUT FRONTIERS

Atari's Jaguar promises virtual reality for all...

The Jaguar is now in production! Courtesy of IBM's efficiency, the first units rolled off the production line in October and a coast to coast TV advertising campaign is currently underway in the States. Atari have budgeted four million dollars for the ten weeks to the end of the year and are intending to sink the 3DO machine before it even appears.

With a price point of $200, including one of the 17 button hand controllers and a "software experience", the Jaguar has the possible disadvantage of being cartridge-based but many of the technical aspects far outweigh the opposition. The animation speed is an astonishing 850 million pixels per second which translates into the smoothest, fastest scrolling imaginable. Coupled with 24-bit true colour images and stereo, 16-bit CD-quality sound, the Jaguar is in a league of its own.

Most of the power is down to a pair of custom-designed chips, code-named "Tom" and "Jerry". Tom is a 64-bit graphics chip incorporating multiple RISC (Reduced Instruction Set Computer) processor while Jerry is a 32-bit RISC chip with a DSP (Digital Signal Processor). The heart of the machine is a 16MHz 68000 processor, and 2Mb of RAM allows an entire game to be read into memory and processed at frightening speeds.

The future promises Jaguar-CD, a CD-ROM drive that will connect to the Jaguar's cartridge port. Apart from offering enhanced versions of the cartridge-based games, interactive movies will also be available as will full-length, full-motion movies courtesy of an MPEG-2 video compression cartridge currently under development.

In a sneak preview, *ST Review* was astounded by the speed of scrolling and depth of colour. *Alien vs. Predator*, a tunnel maze game, lets you "see" your opponents and environment in an unbelievably realistic manner, while *Chequered Flag II* offers the most authentic grand prix drive to date.

The expected UK price is £200, with software experiences retailing for less than £50, although the UK release is not expected to be until Autumn 1994.

Atari Jaguar – games at the press of a button...

Atari are hoping that stunning games Raiden will boost sales of the Jaguar to one million in the first year.

COMPO ON THE FALCON

Compo Software has officially announced that it is working on 386 and 486 PC emulators for the Falcon. Expected early next year, the board has been designed in such a way that those who only require a 386 will be able to upgrade at a later date if necessary.

Also on the horizon is a voice mail system that turns your Falcon into an answering machine. You can save numerous outgoing messages to disk and choose the one you want to use, from a list. Incoming messages are saved to disk and can be grouped according to designation.

Compo are offering the official upgrade to TOS 4.04 for Falcon owners. Pricing is dependent on whether ROMs or EPROMs are fitted: the charge for upgrading EPROMs is £35 with an additional one-off charge of £30 to change ROMs for EPROMs. Contact Compo on 0480 891819 for details.

THREE FROM TITAN

Titan Designs have several products under development for the serious user.

Graffiti is a budget-priced Genlock device for any ST, TT or Falcon, requiring at least 1 megabyte of memory and an adaptor for pre-STE machines. Provisional price is £149.95 but no release date has been confirmed.

Exposé is a studio quality video digitiser. Requiring two megabytes of memory, it can capture images in real time in either 256 colours or true colour at a maximum resolution of 512 by 512 pixels. Powerful image processing software is also supplied; provisional price tag is £351.33.

Fresco is a studio quality Genlock device for the Falcon, requiring a four megabyte machine. In addition to Graffiti's features, Fresco can be linked directly to Exposé for scalable pictures. Expected price tag is also £351.33. For more details, contact Titan Designs Ltd. Tel/Fax: 021-414 1630.

NEWS

FUN ON THE FADE

If further proof was needed, the recent ECTS Show provided it; very few new games are to appear on the ST. With a few exceptions, software houses appear to have decided to cease supporting a once thriving market.

However, there are some important releases intended for 1994. Renegade are releasing the *Sensible World Of Soccer* in May, about the same time as *International Championship Manager* from Domark – possibly something to do with the World Cup?

Tornado – finally to find its way onto the ST.

Grandslam confirmed its intention to release *Nick Faldo's Championship Golf* and assurances were given by Digital Integration that *Tornado* will finally find its way onto our screens – nearly a year after *ST Review* first previewed it!

The only real support comes from US Gold; *Kingmaker* is about to be released and the Kixx XL budget range is being added to monthly.

STAR SHOWS OFF ITS THERMALS!

Star Micronics recently launched the SJ-144 thermal transfer colour printer at £569. It is aimed specifically at the business user, offering a cheap alternative to laser printers. The SJ-144 produces 360dpi output on standard paper and prints 1.4 pages per minute in colour. The printing process involves the use of true colour pigments, giving a brighter, smudge-free output than that of inkjets.

The cartridge incorporates all four colour processes, enabling colour output to be achieved in a single pass. Greyscale images are also catered for. For further details, contact Star Micronics. Tel: 0494 471111; Fax: 0494 473333.

Star SJ-144 – cheap alternative to a laser printer.

SIGHT FOR SORE EYES!

Optix Wales have launched a range of Computer Protection Glasses designed specifically to help combat eye strain, tension headaches and other problems associated with spending long periods of time in front of a VDU. The glasses come in a unisex design, have a 23% blue tint, 100% ultraviolet block and cost £14.95 for the standard model or £12.95 for the flip-clip model. Both prices are fully inclusive. Contact Optix Wales. Tel/Fax: 0269 845826.

Protective glasses from Optix Wales.

WHERE EAGLES DARE!

Germany-based GE-SOFT are to start production of a TT-compatible motherboard next month at around DM3000 (£1200). Called the Eagle, it is based around a Motorola 68030 running at 50MHz, out-performing Atari's TT by a factor of at least two to one. Features include a slot for a 68040, 2 VME Bus slots, 4 Megabytes of system RAM (expandable to 14 Megabytes) and the ability to fit up to 64 Megabytes of Fast RAM internally or 256 Megabytes on an optional board. The Eagle fits directly into any standard PC case and has a socket that lets you connect it to an MF II keyboard. For further details, contact GE-SOFT. Tel: +49 2241 406389, Fax: +49 2241 406589.

IN BRIEF

- The Christmas International Computer Show will take place at the Wembley Exhibition Centre from 19th to 21st November. In addition to the 160 exhibitors, there will be special features on computers in music, the "home office" and entertainment. Advance tickets are available from the ticket hotline on 0726 68020.

- Gasteiner is offering a discount of nearly £5 off the RRP of one of its mice. Simply send £10 and your old mouse; in return you will receive a brand new 400dpi variety – rated at four stars in last month's *Short Cuts*! More from Gasteiner, Unit 2, Millmead Business Centre, Millmead Road, Tottenham Hale, London N17 9QU. Tel: 081-365 1151; Fax: 081-885 1953

- Silica Systems recently announced the availability of the Tatung MM14SAE, a 14 inch Atari compatible high resolution mono monitor for £129.95. Contact Silica Systems on 081-309 1111.

- CGS ComputerBild has recently moved to 231 Northborough Road, Norbury, London, SW16 4TU. Tel: 081-679 7307; Fax: 081-764 7898.

- MicroProse has closed down two UK offices and made several staff redundant at their European headquarters in Tetbury, as a result of a worldwide cost cutting exercise instigated when the firm merged with Spectrum Holobyte a few months ago. Several products already in development have also been axed.

- Floppyshop has just launched a separate catalogue disk for Falcon PD and Shareware with over 200 high density disks of software available. Send a cheque/PO for 80p to Floppyshop, PO Box 273, Aberdeen, AB9 8SJ.

Apologies to Silica for omitting to mention in the last issue that the Falcon in our competition was provided by them.

System Solutions

FLY LIKE THE WIND...

NVDI replaces the Atari display routines. Screen updates with NVDI are 3-10 times faster. Works with all TOS versions on all Atari ST, MegaST, TT and for the Falcon. MultiTOS and SpeedoGDOScompatible.

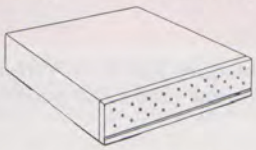
"Scrolling through a long text file in 1st Word Plus took half the time ... Calamus, Calligrapher and Wordflair also showed a marked improvement ... Compatibility is remarkable and we have yet to find a program that is not compatible with NVDI. ... a must for all ST and Falcon owners"

ST Review Issue 16, August 1993.

NVDI Version 2.5 - £49.95

Hard Drives

"Extremely nice looking..." Professional Quality SCSI Hard Drives Systems, 40 -2600 Megabytes from £299. "This is the fastest of the drives reviewed and is superbly engineered, not to mention great value for money." ST User, Issue 90, August 1993.



Special Offer:
105Mb Quantum SCSI Drive with ICD Link
£369 inc.VAT

Falcon SCSI Hard Drives

Ideal for hard-disk recording
1000Mb, 10ms, 5 yr warranty - **£1199**
330Mb plug-in-and-go - **£569**
For other capacities please phone.

High Res Monitors

The SM14s is a perfect replacement for the Atari SM124/5 monochrome monitors, exceeding the original specifications. The 14" high resolution paperwhite FST gives a perfectly centred, crisp and sharp image without blurring at the edges.

On/Off switch, Volume and Brightness at the front; Vertical Size, Horizontal Phase, Contrast and Focus at the back. The tilt and swivel base and a monitor cable with the correct connector are standard.

An amazing 40% extra workspace can be gained with OverScan ST. The SM14 is a totally plug-in-and-go unit.

"Essential Buy, 90%" ST Review, May 93

without audio
SM14 £149.95

with audio
SM14s £169.95

40% Bigger display with OverScan ST.

High Density

elCo doubles Disk space to 1.44Mb!

- ★ Automatic floppy disk detection
- ★ Compatible with your floppy disks
- ★ Software is included. (ACC and CPX)
- ★ Fully supported by TOS 2.06
- ★ PC and Emulator compatible
- ★ A perfect replacement floppy drive!
- ★ Kit price still only £ 79.95 inc VAT

Kit price still only £79.95 inc VAT

World Record

68000 CPU running at 36MHz

Two new Accelerators are now available for the MegaST and ST(FM) computers. Performance and price are sensational. The T28 with a 28MHz clock is 3.5 times faster and the T36 with a 36MHz clock is 4.5 times faster than the original ST's clock. The use of the original 68000 processor guarantees near perfect compatibilty. CPU cacheing is switchable for added compatibility with the cartridge port devices. DTP, Graphics Software and Cubase show a fantastic speed increase.

Compared with a standard ST without Blitter, Gembench v3.12 gives the following results:

	ST(FM)	T28	T36
CPU	100%	299%	373%
Graphics	100%	949%	1097%
Average	100%	763%	890%

The combination of the T28/T36 and NVDI transforms the humble ST into a powerful graphics workstation - a dream come true for all those who want more speed at an affordable price. To celebrate the release of this exciting new product we will give away a free copy of NVDI with every T28 and T36 sold.

Hurry! Offer is valid only until 30/9/1993.

T28 Accelerator, 28MHz, 64kb Cache **£199**
T36 Accelerator, 36MHz, 64kb Cache **£299**

To order and for further information telephone or write to:

System Solutions

Windsor Business Centre, Vansittart Road,
Windsor, SL4 1SE Fax: 0753-830344

Mail Order Telephone

0753-832212

or come to our London Showroom at:

The Desktop Centre

17-19 Blackwater Street, London, SE22 8RS
Tel: 081-693 3355 Fax: 081-693 6936
Dealer enquiries are welcome

The Falcon Column

Are you planning to purchase a Falcon? How much of your old kit will work on it? Or do you just feel tempted and want to know how much a complete system would cost? For advice and a personal quote phone:
Karl: 081-693 3355 or El: 0753 832212

Now in Stock

Falcon030 Starter Packs:

1mb, 14" Mono Monitor & BlowUP £689
4mb, 14" Mono Monitor & BlowUP £889

BlowUP 030 the Display Expander
Using Software and/or Hardware the display expands up to 400%. Virtual screens up to 8000% are also possible.

BlowUP 030 - Software **£15.00**
up to 880x608 53/101Hz
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VGA and other fixed frequency monitors. (TC:480x480 61/120Hz n.l./I)

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Accepts 4x 1mb or 4mb SIMMmodules and replaces the original memory board.

falconWING - 0mb **£59.95**
falconWING - 4mb **POA**
falconWING - 14mb **POA**
Ask for a trade-in deal on your old memory.

Falcon Tower **£179.95**
Integrates the system, space for extra hard drives, separate or replacement keyboard. Phone for the Tower Fact Sheet and price list. DIY or ask for a quote on ready-to-run fitted systems.

14" HQ GreyScale monitor	**£129.00**
14" Multiscan .28dp	**£349.00**
15" Multiscan .28dp	**£395.00**
17" Multiscan .26dp	**POA**
68882 FPU	**£69.95**
ScreenBlaster	**£79.95**
Falcon Speed - PC Emulator	**£229.00**

We are now dealers for **Steinberg**

We will have Cubase Audio for the Falcon up and running in the Showroom as soon as it is available.

Repairs & Upgrades

All repairs are carried out by qualified personnel. If you would like a quote, please ask for an estimate. Need it back in a hurry? Then ask for our professional next-day service. Call us to discuss your upgrade requirements. We fit all quality upgrade products available. We can collect and deliver.

Call the professionals now for your personal quote.

Windsor Service Centre:
Windsor Business Centre, off Duke Street,
Windsor, SL4 1SE. **Tel:0753-818816**
London Service Centre:
The Desktop Centre, 17-19 Blackwater Street,
East Dulwich, SE22 8RS. **Tel:081-693 1919**

ATARI WORKSHOP

THE FLAIR NECESSITIES!

Another ST Review exclusive – a full paint package! Keith Berry takes you through the essentials...

Flair Paint is a versatile graphics utility and picture creator that can be used either as a normal program or as a Desktop Accessory in either high or low resolution. It has its own rather quirky Flair file format but as it also supports Degas .PI1, Neochrome, IMG and Art Director in colour, and, in mono, Degas .PI3 and .IMG files. These should be used in preference especially as they can be picked up by other graphics and DTP programs. Indeed, its use as a Desktop Accessory means that it can share picture files with the other program still in memory! Its support of colour IMG format offers the prospect of large scale graphics suitable for printing by *ImageCopy 2* to the new colour DeskJets.

Flair Paint will run on any ST/STE with either a mono/colour monitor or TV, but on a 520 ST with a ROM version later than 1.0, there is no Edit screen in the Cut and Paste feature, and pasting is direct.

A full list of functions and various hints 'n' tips are included on the cover disk in the *READ_ME.NOW* file – worth printing out and keeping for reference.

GETTING STARTED

As the program loads, it lists its current configuration and ask you whether to Keep or Change it. If you are happy click on Keep, otherwise click on Change and respond to the screen prompts. For the **Printer** selection, highlight one if your printer is supported, otherwise ignore. Then select **Screen-size** or **User-defined** for the canvas. Given sufficient memory, set its size using the arrows.

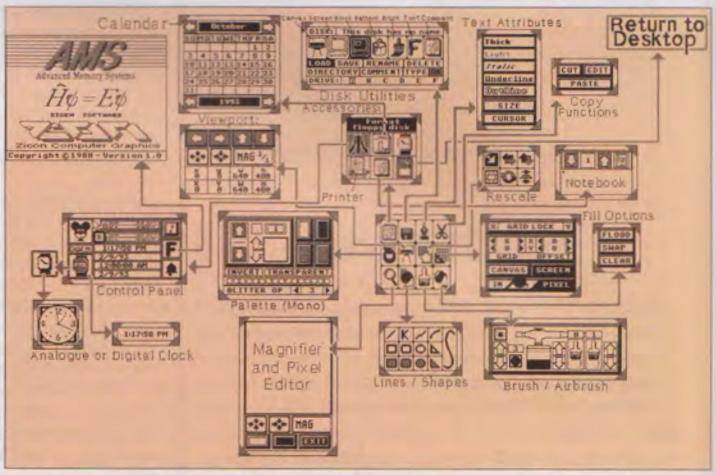
With 1Mb of RAM, you can choose to **Use as Desktop Accessory**. **RAMdisk** and **Printer Spooler** are the final options, the latter setting RAM aside to speed up your printing generally – not just for *Flair Paint*.

To use with a hard drive, copy the AUTO folder files from the disk into the AUTO folder and the remaining folders and files to the root directory of the boot partition (probably C:). Unfortunately, *Flair Paint* will not happily co-exist with some host adaptors.

To prevent loading, hold <Control> during boot-up or press <Esc> during the configuration period. If you would prefer *Flair Paint* to load only if you press <Control>, change the AUTO folder as follows: Rename FLR_BT1.PRG to FLR_BT1.PR and rename FLR_BT2.PR to FLR_BT2.PRG.

GLORIOUS GRAPHICS

Flair Paint's many features are available by left-clicking on a series of graphics menus called "tablets" as illustrated in figure 1. A tablet can be dragged around the screen by its borders and erased by right-clicking. While the mouse pointer is over a tablet, the <spacebar> toggles its border on and off. The one at the bottom right is the **Main** tablet and is the one you will see upon loading the program. It is present on screen at all times that you are not actually employing a graphics tool, but you can toggle it on and off with the <F10> key.



Flair Paint's menu tree – created by merging four Flair Paint screenshots into a single canvas of around 1280 x 800 pixels!

BRUSHES AND PALETTES

Clicking on the Main tablet's **Brush** icon displays the tablet in figure 2. Commence any freehand drawing or airbrush work by clicking on either of the brushes – the left one for solid colour or the right one for a patterned brush. To switch on **Airbrush** highlight the square immediately in front of its nozzle and you can drag the ink level up or down to adjust its ink flow. The brush (or Airbrush) pattern is shown under the number 3 and is selected using the up and down arrows shown to its left. Clicking directly on the pattern itself will reveal a simple editor with which you can create your own patterns.

Click on the Jar icon of the Main tablet for the **Palette** tablet as in figure 3, which shows the sixteen colours (only two in mono) currently configured together with the currently selected pattern. To change any colour to one in the range of 512 hues available simply click on it and change its three-digit RGB value

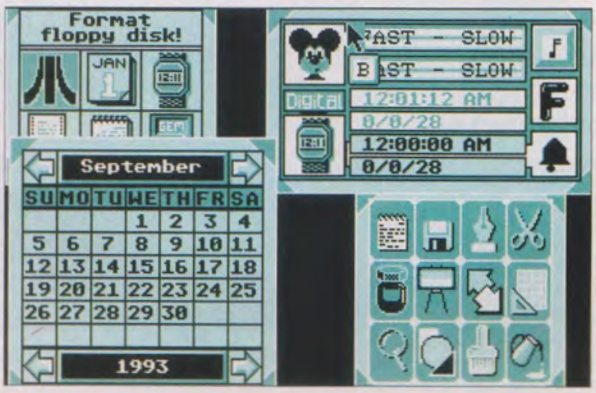


Figure 1: Flair Paint's various graphics "tablets".

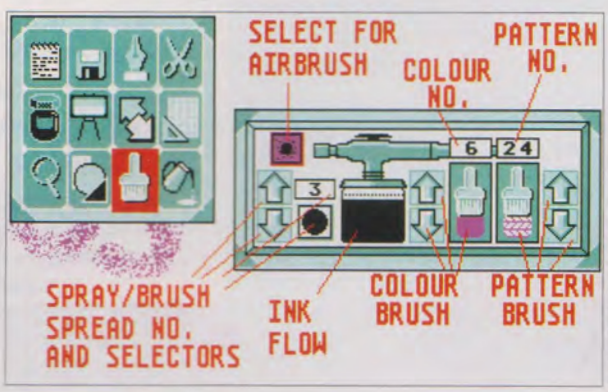


Figure 2: Flair Paint offers an impressive airbrush facility.

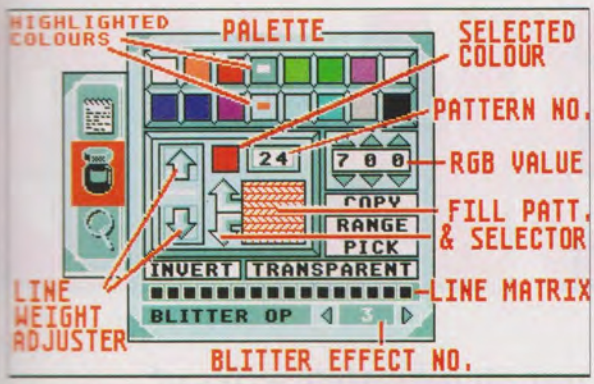


Figure 3: Select from 512 colours – or just two in mono!

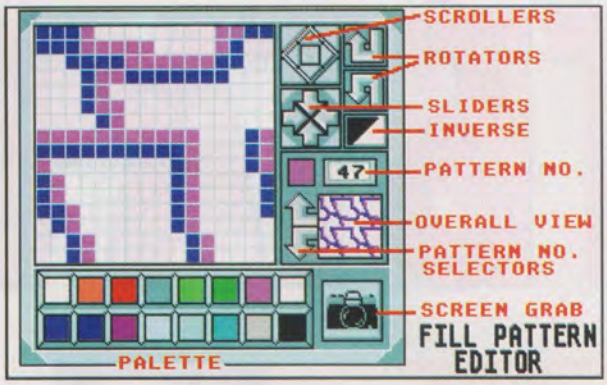


Figure 4: Edit Fills as you wish in Flair Paint.

using the six up/down arrows surrounding it. If, while using the arrows, the colour balance of the whole screen changes, you can restore it by pressing the <F8> key. The two greys were highlighted by clicking on them while holding down <Shift>.

A pattern can be selected using the up/down arrows immediately to the left of the pattern box (number 1 for a solid one), and clicking on the pattern itself will activate the editor. To the left of those arrows are two more to adjust the line width (thickness), though you can also adjust this while line drawing with the aid of the <up>/<down> arrow keyboard keys. Use the line matrix to set the dotted line type required.

FANCY FILLS

The **Fill** pattern editor (figure 4) is invoked by clicking on the pattern in the Palette tablet and experimentation will soon show how this is used. Clicking on the up and down arrows shown alongside the small pattern box selects either an existing pattern to modify or a blank, empty one to design from scratch. Simply select a colour from the palette shown and draw with the left mouse button held down on the larger screen, while the smaller screen shows how the overall pattern will look. As an alternative, if you have something already drawn on your workscreen, you can click on the camera icon to enable a tiny piece of an existing design on screen to be placed straight into the edit box where you can modify it. Experiment with the various other arrow icons to see how they affect the design.

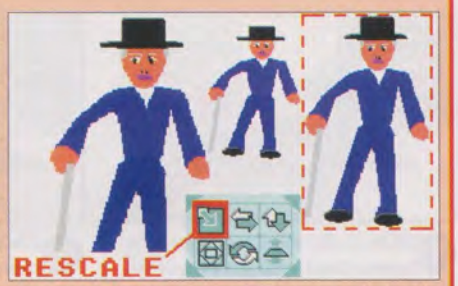
SNAZZY SHAPES

Selecting the **Shapes** icon is shown in figure 5 with samples of its repertoire, with which you should experiment and practice. The drawing methods are consistent throughout the program:

Two-point shapes (lines, rectangles, arcs and circles/discs) – Left-click on the icon of the shape required and left-click at the start point. Drag the mouse until your shape is the required size or length and left-click again. At this point you can move the whole shape around the screen and either move it into position and "stamp" it there with another left click, followed by a right-click to return to tablet mode, or right-click to abort.

SERIOUS RESHAPING...

The Resize tablet is available from the double-arrow icon on the Main tablet and offers various manipulations to a selected area of the picture. In order, these are: Rescale, Horizontal flip, Vertical flip, Slip and Slide, Rotate and Shear. As part of the enjoyment of using an art program is in the experimentation side, you'll have lots of fun here!



Multi-point shapes (starred and continuous lines/polygons) – As above but left-clicking for each point or change of direction, right-clicking to complete the shape. Check that it is completed by moving the mouse around and then left-click to stamp, right-click to cancel as before.

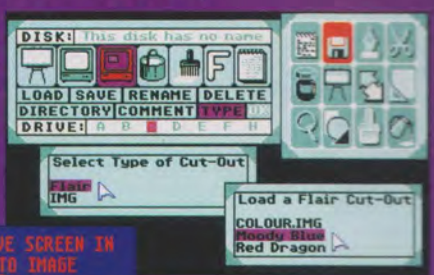
Bezier curves – Slightly different in that it has four points along its length. Left-click for the first as usual, <Shift> and hold down left mouse button to control the second point, <Shift> and right button for the third and the mouse alone for the fourth. <Shift> and mouse alone moves the whole curve around the screen and a left-click completes the curve, while yet another stamps it down. While it is being drawn, the keyboard <up> and <down> arrows can be used to make the line more or less dense – lots of practice required! You can hold down <Control> while selecting a filled shape when it will have a border on completion. If you hold down <Shift> while selecting a rectangle or circle/disc it will be drawn as an exact square/circle.

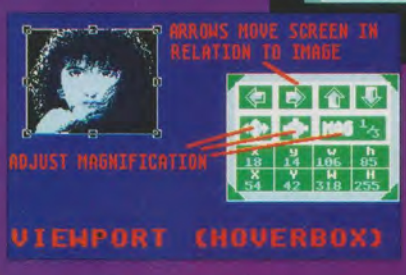
STEP BY STEP

USING THE FILL OVER FUNCTION

This step-by-step illustrates the useful Fill OVER facility...

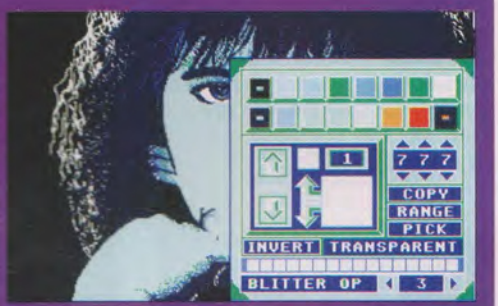
1 *From the Disk tablet, set the Type as shown to load the "Moody Blue" picture from disk.*





2 *Load the picture into the Viewport as prompted and use the arrows and magnifier to fill the screen.*

3 *Go to the Palette tablet and Shift-left click on the three darkest colours. This protects them from the Fill. Select White and solid pattern No.1.*



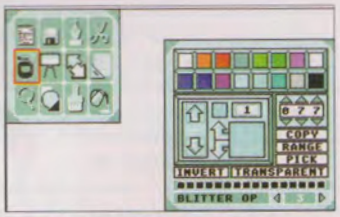
4 *Click on the Main tablet's Jug icon for the Fill option tablet and then click on UNDER – all but the three darkest protected colours have now turned white.*

STYLE AND

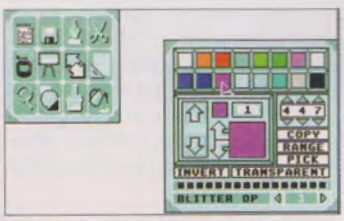
STEP BY STEP

Follow our step-by-step series of pics to create your first masterpiece!

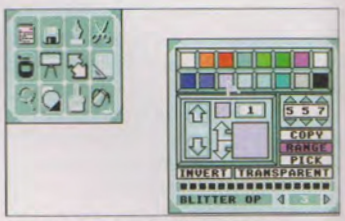
1 *This is the Main menu tablet that will greet you on first loading Flair Paint. The default mouse cursor is an arrow of the colour that is in use but you can choose from a selection by repeatedly pressing the <F1> key. Left-click on the Jar icon for the Palette tablet.*



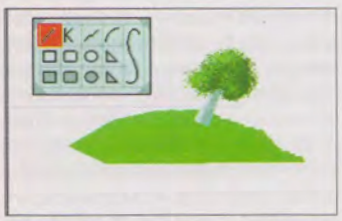
2 *This is Flair Paint's standard palette of colours which we will amend to better suit our subject. There is no facility to load or save a palette as such, but you can load and then erase a picture which already has the range of colours that you wish to use.*



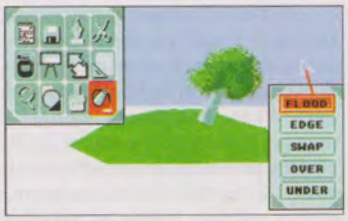
3 *We will make use of a colour that we are unlikely to need. The purple to the right of two blues is usefully situated so select that by left clicking on it. The cursor, the small block and the larger pattern box (denoting a solid fill) all change accordingly.*



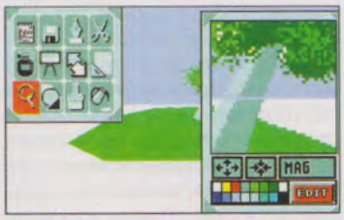
4 *The RGB indicator for purple is shown as 447. Left click on the small arrows to change this to 557 (pale blue). The whole screen colour may suddenly change but you can press <F8> to restore it. Activate RANGE by clicking on it and click on the leftmost dark blue.*



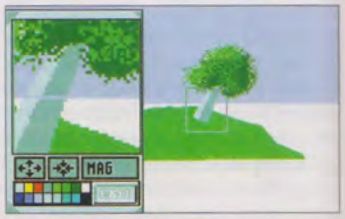
9 *Select pale blue, the Shapes tablet and then click on the Line icon. Left click the start and end of the horizon and then move the mouse up and down, clicking again when the position appears right. It is sensible to complete the sky first, but this is a demonstration!*



10 *Check from the Palette that pale blue and the solid fill No. 1 are still active and then click on the Main tablet's Jug icon for the Fill tablet. Select FLOOD, move the cursor into the sky area, left click and the upper part of your picture fills with blue.*

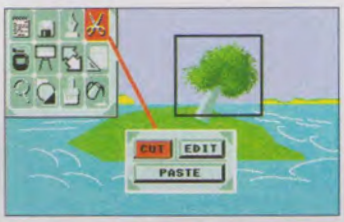


11 *The line across the tree trunk remains, so select the Magnifier icon on the Main tablet and the Magnifier/Pixel Editor appears. Toggle its grid on and off by clicking on MAG, and adjust its magnification by use of the two icons to the left of MAG. Click on Edit...*

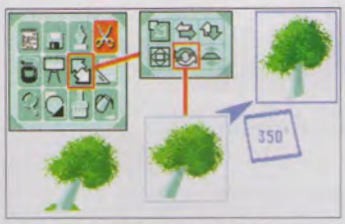


12 *...and then on the tree trunk to lock the frame. Select light and dark greys to overpaint the line inside the frame. The space bar in Edit mode moves the Magnifier to the other side of the screen. Click on EXIT to leave Edit mode and right click to Main tablet.*

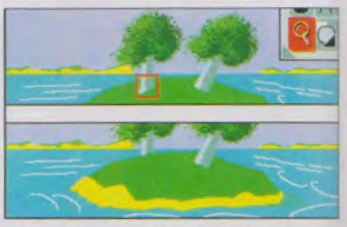
16 *From the Palette, this time highlight the sky blue and draw some landfall on the horizon with the brush set slightly smaller at No. 2. If you haven't a suitable colour change one of the other unused ones as before. You can also change any colour in use, of course.*



17 *Instead of drawing a new tree, we will re-use the existing one. From the Palette, highlight the three greens and two greys of the tree, select TRANSPARENT then with the Scissors icon select the Copy tablet and click on CUT. Click top left and bottom right around the tree.*

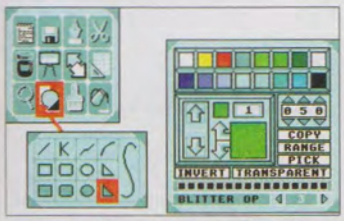


18 *In Edit screen, left-click and remove the "grass." Select Arrows icon for Resize tablet and click on Rotate. Click around tree as before and move the mouse to tilt it anti-clockwise and left click twice. Use white filled Polygon to erase everything else and click on Scissors to paste...*

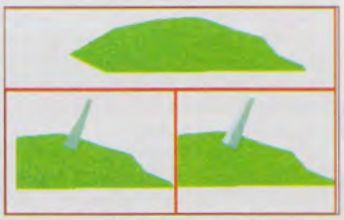


19 *...the tree into place. Use the Magnifier to overpaint in medium green the unwanted section of tree trunk to depict it growing on the other side of the island. Deselect TRANSPARENT on the Palette, select a suitable colour and use No. 3 brush to paint the edge of the island.*

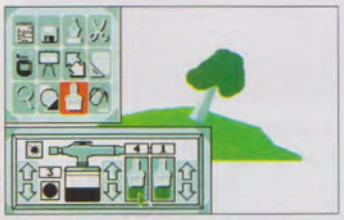
FLAIR PAINT



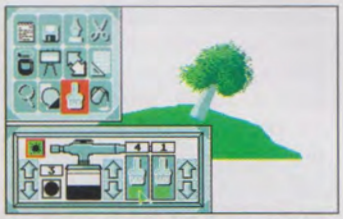
5 *The blue between the two has taken on an intermediate shade. Do the same to produce a range of three greens near the top right. Select the middle green, click on the Shape icon of the Main tablet for the Shape tablet, and from that select the filled Polygon icon.*



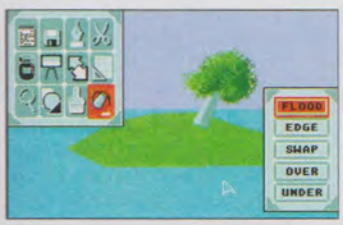
6 *Left click around the screen to see the effect of the Polygon tool. Right click completes the shape and left click locates it. Press <Undo> and start again until you are happy with your island shape. Using the two shades of grey, create a tree trunk in the same way.*



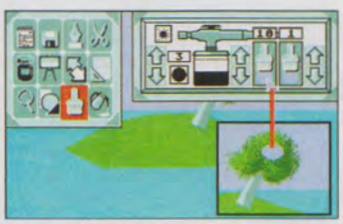
7 *Select the darkest green and then the Brush on the Main tablet for the Brush/airbrush tablet. Using the up and down arrows on the left to locate brush pattern 3 and then click on the bristles of the left brush to begin drawing the rough shape of the tree's foliage.*



8 *Return to the Brush tablet and activate the Airbrush by clicking on the square in front of its nozzle. Using medium and then light green, click on the left brush and Airbrush leaves over the dark green shape, remembering (from the trunk) that the lighter side is on the left.*



13 *Select the intermediate blue from the Palette tablet and the Jug (Fill) icon on the Main tablet. Click on FLOOD and left click below the island to colour the sea. If at any time such a flood fill should leak into an unwanted area just press <Undo> to cancel it.*



14 *White is showing through the foliage. From the Palette select PICK, click on the sky and then <Shift> click on white to highlight it. Go to the Brush menu and (Airbrush off) click on the left brush. When you paint over the foliage, only the white background should turn blue.*

15 *From the Palette select white (after <Shift>-left-clicking to de-highlight it) and Bezier curves from the Shape tablet to draw a few waves. Refer to the mini manual section for how to draw these Bezier curves and practice a few, remembering that the <Undo> key will erase errors.*

20 *The finishing touches. Add darker areas of sky, sea, and island edge, airbrush across the sky borders to soften them, add some detail onto the island grass area, and reflections in the water.*

IF YOU HAVE A PROBLEM WITH YOUR COVER DISK... DON'T PANIC!

If your cover disk causes problems, remove any peripherals and try again, switching it off for at least 20 seconds before continuing. If this doesn't solve your problem, return your disk, with a stamped addressed envelope, to

P.C. Wise Ltd.,
Dowlais Top Business Park,
Dowlais,
Merthr Tydfil,
Mid Glamorgan,
CF48 2YY.

PC Wise will test the disk and send a replacement as soon as possible. You can contact the PC Wise Helpline with any urgent problems concerning faulty disks on 0685 350505 between 10.30 and 12.30 on weekdays.

STRBAKUP

EXCLUSIVE UTILITY BY OFIR GAL

Back up your cover disk and keep the original in a safe place.

Run the program and carefully follow the on-screen instructions. There is no need to format your backup disk as the program will do this for you.

STRBAKUP.PRG **is for backing up your cover disk. We do not recommend it for any other use.**

OPEN HOUSE

The perils of "forgetting" to back up data.

We all learn the hard way, don't we? Here's a short tale of woe that could save you not only embarrassment, but a lot of time and, possibly, money, too.

I have owned a Psion 3 organiser for some time now and have grown to rely on it. It was expensive to buy, so I figured I'd make the best use of it I possibly could and proceeded to fill it with every telephone number, address and other piece of information I could need, including my shopping list!

I kept all my appointments and deadlines in it; remembering birthdays and anniversaries became a thing of the past as the machine warned me a couple of days in advance so I could get cards and post them in time – my family were shocked! To add to this, my trusty friend also doubled as a calculator, telephone dialler and notebook. The couple of times I had forgotten to take it to work with me caused panic and a quick trip home.

The other day, the display went funny. Thinking that the batteries needed replacing, I swapped them over. Imagine my horror when this didn't work. Nothing – not even a title screen. Just three black bars proving that power was getting to the display, at least, but no data. A brief rattle revealed the problem. Out of one of the disk slots on the back came half of a microchip. The machine was well and truly dead. A quick panic call to Psion's technical department confirmed this after a reset proved useless.

This gave me the idea of writing a piece on the importance of backing up your data. What would you do if your hard disk drive did the same? Or you left a pile of disks on your radiator and it got cold one night?

The moral of the story is quite simple. If it's important, back it up. Make a second copy and keep it separate from the original – don't do what I did. Remember, though, you shouldn't back up a commercial disk unless the documentation specifically allows you to do so.

Me? I'm off to get my organiser repaired and then I'm going to the shop to spend £70 on the leads and software to ensure that if it happens again, I'm safe!

In the meantime, I'll write everything down and keep it locked in a fireproof, bomb-proof, me-proof place, so when I get the Psion working again, there's no chance of losing any data. It's a wonder how we ever survived before the age of the computer!

Be seeing you...

Tony Kaye, ST Review's deputy editor, was narrowly prevented from jumping off a cliff and is recovering nicely in a local sanatorium. He should be fully recovered by next month...

AMERICAN PIE

The latest from all points west of the Atlantic ocean...

This really has been a somewhat slow summer for us Atari folk, but even though the number of titles released for our system was probably at an all-time low, I would venture a guess that the majority of the programs were of a much higher quality. Even the games market had some very nice programs – *Civilization* and *Street Fighter II* would be smashing commercial successes on your side of the water and mine!

Speaking of games, I would like to officially announce that a U.S. company called Majicsoft has taken over the continued development and distribution rights to the *GP_Graphics Engine* that I developed. Game players may have noticed that the majority of games I have designed for use here on the *ST Review* cover disk were designed in GFA BASIC using this system. All information at this time points toward a late 1993 release – stay tuned for further information.

I had the pleasure of meeting Damien Jones of DMJ Software at an Atari show in Houston recently. He is the author of the popular *View II* software and other goodies. Even though I can't talk too much about what he has in store for us, the upgrade to *View II* is currently in development and this one will be fantastic to say the least. Whew – can this guy code...

I recently had the honor of play testing a new dungeon RPG adventure currently in development called *Towers* by JV Enterprises. One of the nicest things I can say about it is I was actually able to understand it and *play* it the first time I sat down with it. Another neat feature is the ability to hook up the IBM PC and ST versions and play together or against one another! This should be one to watch out for by Christmas 93.

The Atari Lynx seems to be making a rebound! Word has it that Atari will be making a massive retail push for the Lynx over the holidays. With *Lemmings* and *Jimmy Connors Tennis* now in stores, and new titles like *Malibu Beach Volleyball* and *Ninja Gaiden III* in development it looks like Lynx owners can take a deep breathe. The Lynx system is a great buy at $79.95 – let's hope there's more new carts to come in time for the holidays. Did I mention a new cart called *Eye of the Beholder* is in development also? Good...

Which brings me to the Falcon. I have now had a Falcon in my grasp for about a month. I really like this system – *Works* and *SpeedoGDOS* are great and it has a high degree of compatibility with well written ST/STe software. But I have to be honest here. After reading all the messages from the BBSs and all the U.S. magazines, generally absorbing as much Falcon information as possible, I realize the Falcon is not really taking off as well as it could. Very few dealers actually have the Falcon in stock as of 1st September. Atari U.S. isn't really doing a whole lot to promote the thing, almost all of their funds going towards the promotion of the Lynx and Jaguar. A lot of users are voicing their opinons publicly about the Falcon being a little slow. In standard ST/STe resolutions the Falcon flies, but a lot of power users are setting up their desktop in high resolutions and 256 colors on SVGA monitors and complaining of slow video. When you remember that the Falcon is only running at 16Mhz, the performance of this machine is incredible to say the least.

So I say, go ahead and let this version of the Falcon be for the low end – for games and such it's perfect! But please Atari, get an 040 32Mhz version out soon so all the power users won't be so frustrated. Maybe even offer an upgrade kit for the older Falcon 030. Atari isn't saying anything official yet, but hints from Atari staff are getting stronger about an enhanced version of the Falcon coming out real soon now...

Dave Munsie *loves* programming games on the ST and the marketing of his games engine is to be welcomed. More to the point, you can look forward to an exclusive game on the next cover disk...

Protext 6 - *A Winning Performance*

Some highlights of Protext 6

Styles

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Protext is still the fastest

- Fastest at editing.
- Fastest at spell checking.
- Fastest at printing.

Protext still has the best printer support

- Hundreds of printers supported
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The list price of Protext 6 is £152.75 but you can order direct today for just £99 inclusive. For the Atari ST and TT.
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ARNOR

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If you've outgrown your hard drive, where can you turn? Andrew Wright looks at new technologies for bulk data storage.

BEYOND

When the majority of ST owners are probably still struggling along with one or two floppy disk drives, it might seem odd to devote so much space to what appears to be Tomorrow's World type technology. On the other hand, hard drives, scanners and laser printers were once thought of in much the same way...

There are two things to remember. Firstly, ST owners are buying hard drives faster than ever before, largely to keep up with the demands of the latest software applications, many of which automatically assume you've got a hard disk. Let's face it – with things like direct-to-disk recording, image processing and PhotoCD becoming the hottest topics around, you need a lot of space. And when I say space, I mean megabytes and megabytes of it.

Secondly, there's nothing futuristic about the technology at all. Although it is still advancing at a rate of knots, with new products appearing almost every day, the latest magneto-optical and Floptical disk technology is perfectly safe and as reliable as any other data storage medium available. In fact, it is probably more reliable – magnetic storage media are notoriously prone to accidental corruption or even erasure when placed near other electrical equipment but optical media is so secure that some disk manufacturers even guarantee data integrity for up to ten years.

NEW TECHNOLOGY

A standard hard drive consists of rigid disks called platters, coated in a hard-wearing magnetic material. Data is stored or accessed using magnetic drive heads, usually one for each disk surface, which read and write the data by magnetising or de-magnetising parts of the disk.

A removable Syquest drive, on the other hand, uses the same technology except that the platters are actually contained in plastic cases and can be physically removed from the drive. There are 44 and 88Mb versions of the Syquest drive available at present with rumours of backward compatible 100Mb+ models under development.

Magneto-Optical (MO) drives rely on highly accurate laser beams to read and write information so that more data can be stored in a given space. As a result, the disks are smaller, lighter and cheaper to produce, being the same shape as floppy disks but with thicker plastic

DRIVE PERFORMANCE TESTS

The figures shown are the time in seconds, averaged over three tests, to copy the same large group of assorted files from one partition to another. The tests were as follows:

Test 1 – Transferring from the Falcon's IDE drive to the test drive.
Test 2 – From one partition on the test drive to another.
Test 3 – From the test drive back to the Falcon.

Changing the partition sizes had almost no effect on the results, and the default settings for the ICD cache were used each time.

Note that the times for both MO drives should be almost identical as they are based on the same unit but the Data Pulse couldn't complete the tests as the power supply failed. Ladbrokes stated it was part of a faulty batch of power supplies rather than a design problem.

Device	Test 1	Test 2	Test 3
Floptical	126s	225s	108s
MO	110s	110s	57s
Syquest	53s	79s	53s

LADBROKE 21MB FLOPTICAL DRIVE

The Ladbroke Floptical drive is based on the Insite 325VM embedded SCSI mechanism. It is housed in a standard Data Pulse style casing with a SCSI ID selector and on/off switch on the front, and the drive bay on the right hand side. There is also a red power on light to the left and an orange drive activity light on the drive bay itself. There is plenty of room in the case for a hard drive, and existing Data Pulse owners can add a Floptical unit relatively cheaply – £279.99 including one Floptical disk.

The case is a hard-wearing, sturdy grey metal design that makes an ideal monitor stand. It measures 12 inches square and stands some two inches high. Although there is no fan inside, there is a slight whine from the drive unit but it's not obtrusive compared with many hard drives. When writing, the Floptical unit sounds almost as though the data is being etched onto the disk with a blunt needle but though alarming at first, it soon fades into the background. Floptical disks look just like high density disks and will hold almost 21Mb of data. The drive can also read and write ordinary floppy disks, including 1.44Mb ones, which makes it particularly attractive for ST owners looking for PC and Falcon drive compatibility.

Ladbroke's Floptical drive – economical way to back up data.

The Ladbroke unit comes complete with ICD's The Link host adaptor for connection to any ST, or a SCSI 2 cable and ICD *Pro Utilities* for Falcon owners. Two helpful leaflets are also supplied. Despite the fact that the Flopticals are essentially high capacity floppy disks, they can be formatted and used just like hard drives, with any number of partitions, using the supplied ICD utilities. Autobooting is supported too, though compatibility with other systems, like Macs and PCs, is lost.

Flopticals are very useful for backing up hard drives – *Diamond Back 2* is fully compatible with Floptical drives and using its own built-in compression routines can back up around 30Mb of hard disk data to a single Floptical.

- ✓ Low purchase price
- ✓ Support for DD/HD floppies
- ✓ Diamond Back 2 compatible

PROS AND CONS

- × Slow access time and data transfer
- × Limited if storing very large files
- × Noisy in use

HARD DRIVES...

casing. MO disks have an active magnetic layer just like hard drives but to change it, the surface has to be heated first and then the polarity changed electromagnetically. As the data is locked in at high temperature, data can be safely trusted to survive years of misuse in studios and offices. At present, only the 3.5 inch/128Mb MO format is available on the ST though 5.25 inch models with a 600Mb capacity do exist.

Floptical drives are more closely related to floppy disk drives but they use optical technology to position the drive heads much more precisely. Some 900 concentric "servo" tracks are stamped on the disk during manufacture and the head uses these to zoom in on the right spot and retrieve the data. One big side benefit of the Floptical is that it will read and write ordinary floppies too, including high density ones, making it a useful upgrade for ST owners. It is possible that 40 and 80Mb formats could be with us soon.

Hooking any of the drives up to an ST requires a host adaptor like ICD's external one, The Link, which comes with some very good driver software. The Falcon is easier – it needs only a SCSI-2 cable and either the standard Atari hard disk drivers (version 5.03 or later for Flopticals) or the rather better, commercial ICD *Pro Utilities*.

QUICK ON THE STORE

There's no doubt that the new optical technologies offer us vastly more storage space but they're slowing us down too. If you need really fast data retrieval, there's nothing to beat a big hard drive and the change to the high capacity formats will seem like a step backwards to owners who already have several hundred megabyte hard drives with minimal access times.

For most of us though, the speed won't be half as significant a factor as the storage space and the performance of all the units under review was perfectly acceptable in normal use. Even the Floptical, predictably the slowest drive of the three types, worked out between five and six times faster than a normal 720Kb floppy when we ran a few tests and though we couldn't carry out the same tests on a high density drive, it is still likely to work out some three times faster when compared to HD floppy drives.

The main question must be whether it could be used as a hard drive and the answer has to be no. It would be an improvement on a floppy but don't kid yourself – if you need a hard drive, get one. The main market will be backups and extra, convenient storage space – little used applications and files could easily be transferred to Flopticals until needed with the everyday programs kept on the hard disk.

It would also serve the mid range DTP market well enough as, without 24-bit colour, PostScript and image files are unlikely to grow quite so large.

Syquests and MO drives on the other hand function at about the

DRIVE SPEEDS AND DATA TRANSFER

The following are the results obtained in tests using ICD's *RateHD* utility. The first figure is the data transfer rate (in Kb/sec) and the second the average access time (in ms). An external SCSI hard drive is shown for comparison.

Device	Data Transfer Rate (in Kb/sec)	Average Access Time (in ms)
Floptical	100	135
MO	600	36
Syquest	502	33
SCSI drive	1057	21

LADBROKE 128MB MAGNETO-OPTICAL

The Ladbroke MO drive uses the Fujitsu M2511A SCSI mechanism with an onboard 256Kb cache. It is again housed in the standard Data Pulse casing which is made of grey metal and very hard wearing if lacking the style of the System Solutions offerings. There is a red power light on the left hand side, which is on continually, and a small green activity light on the drive bay itself along with an eject button. The SCSI ID selector switch is front-mounted too and there is an on/off switch on the right hand side. At the back is the standard Centronics-style SCSI IN port and the socket for the power lead.

As with the Floptical, Ladbrokes supply ICD's The Link or a Falcon SCSI cable plus the appropriate ICD software. No SCSI through port is provided as Ladbroke say there's not enough room in the case and although a cable type adaptor can be added, the drive will always have to be last in the chain.

The Ladbroke MO has no fan – the mechanism uses so little power that cooling is superfluous and as a result the drive is wonderfully quiet.

Magneto-optical disks look just like fat floppy disks but as they hold nearly 90 times as much data, they are one of the most space efficient forms of storage. Although we experienced no installation or running problems with MO disks, it is possible to get confused–the disk has to be in the drive when the system is booted or the drive won't be recognised!

✓ Low overall cost per Mb
✓ Quiet operation
✓ Fast file transfer

PROS AND CONS

× Very expensive to buy
× Case doesn't reflect price
× Single SCSI port

"A low cost, bulk storage system with plenty of potential – flexible and easy to use."

NAME: DATA PULSE FLOPTICAL
COMPANY: LADBROKE COMPUTING
CONTACT: 0772 203166
PRICE: £399.99 INCL. DISK (389.99 FOR FALCON)
MIN MEMORY: 0.5MB
SYSTEM: ST/STE/TT/FALCON

EASE OF USE ★★★★★
DOCUMENTATION ★★★★★
EFFECTIVENESS ★★★★★
VALUE FOR MONEY ★★★★★

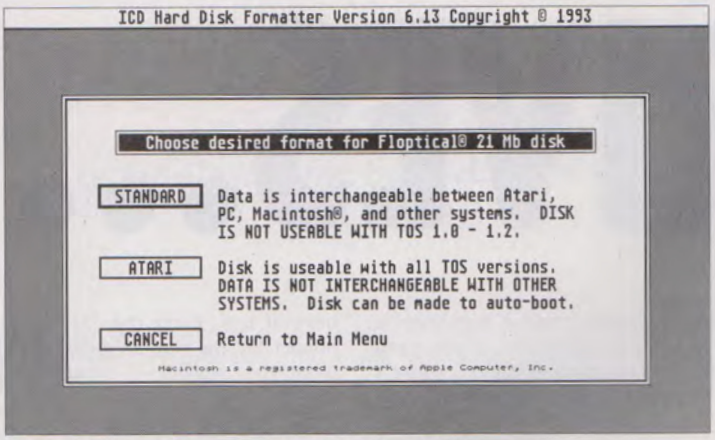
OVERALL 84%

"The technology of the future and the cheapest way of adding hundreds of megabytes to your storage capability."

NAME: DATA PULSE 128MB RE-WRITEABLE OPTICAL
COMPANY: LADBROKE COMPUTING
CONTACT: 0772 203166
PRICE: £989.99 (£979.99 FOR FALCON) INCL. 1 DISK
MIN MEMORY: 0.5MB
SYSTEM: ST/STE/TT/FALCON

EASE OF USE ★★★★★
DOCUMENTATION ★★★★★
EFFECTIVENESS ★★★★★
VALUE FOR MONEY ★★★★★

OVERALL 88%



Formatting a Floptical with the ICD utilities.

same speed as many older hard disks like the Atari Megafile 30 and 60 models. MO drives are somewhat slower at writing due to the nature of the technology but both of the MOs and the Syquest were surprisingly quick, and in normal use the slight drop in speed would go unnoticed.

It has to be remembered that the tests we carried out were necessarily on large groups of files – reading or writing a single, small 50Kb file would take but a few seconds at the most, whatever the format.

The second thing to note is that performance could have been improved substantially by altering the cache sizes (all the drives on test were accessed using the ICD hard disk driver software which has very good built-in read and write caching).

In the tests we used only the default caches but using large RAM buffers, in the region of 800Kb, speeds up access by about 30%.

MEG MOVERS

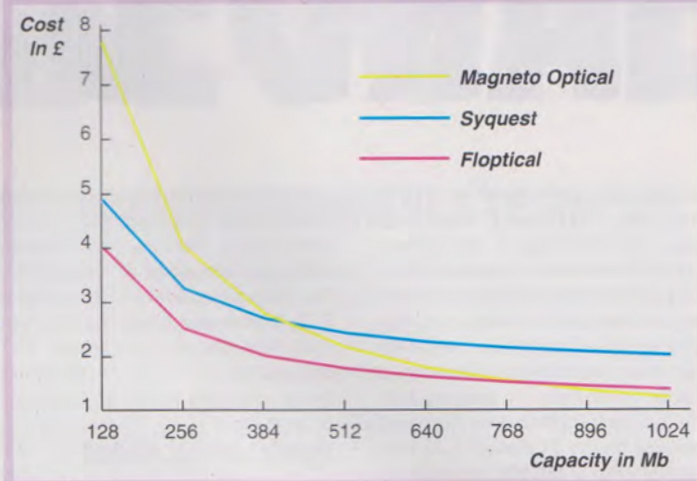
The three different technologies reviewed here each offer distinct advantages and disadvantages in terms of storage. The Floptical's 21 Mb capacity might appear enormous to users with a single floppy disk drive but to recording studios and desktop publishers, who are used to transporting large numbers of huge files around, the 21Mb is a severe limitation. Even the 44Mb Syquest cartridges are all too easy to fill up. MO disks have the edge here, holding six times as much as a Floptical and nearly three times as much as the smaller Syquest.

Floptical disks cost around £25 each, which works out at somewhere in the region of £1.20 per megabyte. Syquest cartridges cost around £70 (£1.60 a megabyte) while MO disks are £35 or so (a much more impressive 27p per megabyte). However, this has to be balanced against the purchase price of the drive unit and MO drives cost significantly more than the others to start with. However, a few quick calculations reveal that if your data storage needs are likely to run to 500Mb or more in the foreseeable future, the MO drive will actually work out significantly cheaper.

The above graph shows approximate costs per megabyte in pounds and includes the purchase price of the drive. For example, 256Mb of storage on an MO drive is made up of £989 plus one extra disk costing £35, making £7.73 per Mb. To get a similar amount of space using a Floptical would cost £399.99 and buy 11 extra disks costing £225 (Ladbroke's bulk price is £100 for 5), making the cost £2.48 per Mb (allowing for the fact that the actual storage space would be 252 MB).

It doesn't take long for the MO drive to become more economical than the Syquest (at 500Mb or so) and if you are likely to exceed 800Mb, it beats the Floptical too (though you would by this stage need some 40 Floptical disks – hardly as convenient).

COST PER MEGABYTE OF BULK STORAGE



Device	128	256	384	512	640	768	896	1024
Floptical	3.97	2.48	1.98	1.74	1.59	1.49	1.42	1.36
MO	7.73	4.00	2.76	2.14	1.76	1.52	1.34	1.21
Syquest	4.84	3.22	2.67	2.40	2.24	2.13	2.06	2.00

SYSTEM SOLUTIONS S44SY SYQUEST DRIVE

The System Solutions Syquest drive comes in the same custom case as the MO drive with the smart looking black badge on the front and the same large rubber feet.

The drive has to be turned on before the removable disk (often referred to as a cartridge) can be inserted into the front opening in much the same way as a floppy drive after which it goes through its own short diagnostic self-test process. There are drive activity and power on lights on the front with a rather clumsy eject button (in common with all Syquest units). At the back are the two SCSI In and *OUT* ports plus the mains socket and power on/off switch.

The cartridge can be removed with the power off or the power on but 30 seconds of inactivity is recommended to ensure that the disk has stopped spinning. In action, the drive is noisy but only when the Syquest cartridge is being read or written to. When simply waiting, as a drive so often is, the S44Sy is quiet enough.

Performance is comparatively slow but it's still several times faster than slow disk drive like the original Atari Megafiles. Perhaps the strongest selling point at present is that it is universally accepted in the publishing and pre-press industry on both Mac and PC-based systems whereas the MO drives haven't yet got the same market penetration as the Syquests. The more expensive 88Mb model wasn't tested here but it should offer better performance, slightly cheaper data storage and cross compatibility

System Solutions' Syquest drive – old technology, but an industry standard.

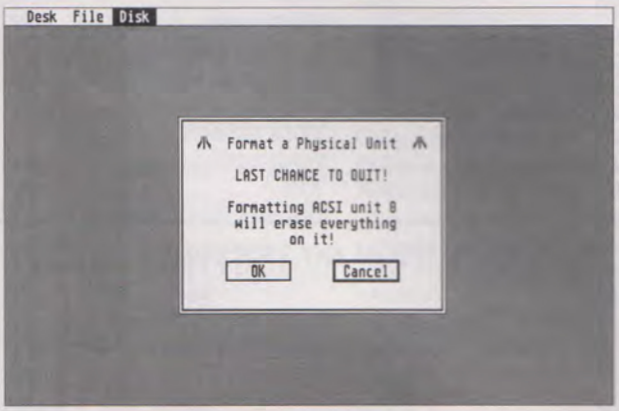
VERDICT

We've looked at all these products as a means of boosting your storage capacity step by step as you need it but the other significant advantage is portability – in DTP and the music world, large files have to be transported around frequently. Few professionals can squeeze their work onto a floppy and carrying a hard drive around isn't exactly convenient.

The Floptical looks most attractive in the short term and if your needs are never likely to exceed a dozen Floptical disks, say 200Mb, it works out as a good budget buy. Balanced against that is the very sluggish performance and the slight question mark on reliability – industry reports suggest data isn't as safe as it could be.

The Syquest still performs well enough to be used as a main hard drive and has a hefty worldwide user base in professional circles, making exchange of data easy. It never works out cheap though and the high cost of the media is a big negative in the face of stiff competition from optical formats.

The magneto-opticals are undoubtedly the best bet for the future – they are deadly quiet, respectably quick in operation and can't be beaten on storage cost if you're hungry for megabytes. The initial cost seems very high but just calculate the cost per megabyte for a 500Mb or more of storage and the money can soon be recovered. And once you've paid for the drive, £35 to £40 for 128Mb of secure storage seems positively cheap!



Atari's own utilities work fine with all the drives tested.

with older 44Mb drives. It costs £599 in the ST configuration and £569 for the Falcon.

- ✓ Compatible with PC and Mac systems
- ✓ Widely used in pre-press and publishing

PROS AND CONS

- × Few cost advantages these days
- × Noisy in use

"Old technology that still works well. The new larger units are well worth having."

NAME: S44SY SYQUEST
COMPANY: SYSTEM SOLUTIONS
CONTACT: 081-693 3355
PRICE: £499 (£459 FOR FALCON) INCL. 1 CARTRIDGE
MIN MEMORY: 0.5MB
SYSTEM: ST/STE/TT/FALCON

EASE OF USE	●●●●○
DOCUMENTATION	●●○○○
EFFECTIVENESS	●●●●○
VALUE FOR MONEY	●●●○○

OVERALL 76%

SYSTEM SOLUTIONS S128MO MAGNETO-OPTICAL DRIVE

System Solutions' MO drive is stylish and cost effective for large capacity.

System Solutions products are instantly recognisable by their clean, professional looking design and the smart company badge. The S128mo MO drive is no exception and looks extremely smart in its beige slimline casing with large, two inch square rubber feet in each corner to protect the unit from vibration.

The System Solutions drive uses the same Fujitsu M2511A SCSI mechanism as the Ladbroke unit and has a similar onboard 256Kb cache. The casing measures just over 12 inches in length by nine inches wide and 2.5 inches high.

There is an orange power light on the top right-hand side which is on continually and a small green activity light on the drive bay itself alongside the eject button. Incidentally, the disk ejection system is motorised in both MO drives we tested and the eject mechanism itself is extremely powerful – in some unofficial tests, we managed to achieve a distance of nearly eighteen inches on a smooth desktop surface. Try that with a floppy...

On the back there is a SCSI ID selector switch, power on/off button and two SCSI ports, one for SCSI IN and one for SCSI OUT. This means it is far easier to have the drive at any position in the SCSI chain, making it more flexible for professional users. Finally, there is a socket for the kettle-style mains lead.

In contrast to the Ladbroke unit, a fan is supplied with the S128mo and is somewhat noisy although the 60W power supply handles the extra load without problem. However, System Solutions will supply and fit a fan controller (£15 if ordered with the unit) that considerably reduces the noise, which is handy for sound deadened studios or users needing to work at home. Aside from the fan noise, the drive mechanism itself is very quiet.

The ST version comes complete with The Link while the Falcon version includes a cable and the ICD *Pro Utilities*. Both include a disk.

- ✓ Low overall cost per megabyte
- ✓ Fast file transfer
- ✓ SCSI through port

PROS AND CONS

- × Very expensive to buy
- × Fan kit required

"Wonderful technology packed inside a superb, professional case – perfect optics, inside and out."

NAME: S128MO MAGNETO-OPTICAL
COMPANY: SYSTEM SOLUTIONS
CONTACT: 081-693 3355
PRICE: £989 (£979 FOR FALCON) INCL. 1 DISK
MIN MEMORY: 0.5MB
SYSTEM: ST/STE/TT/FALCON

EASE OF USE	●●●●○
DOCUMENTATION	●●○○○
EFFECTIVENESS	●●●●●
VALUE FOR MONEY	●●●●○

OVERALL 90%

TECH TALK

How commercial pressure affects software development...

It is quite common to read messages on Internet, the various bulletin boards, or even in the magazines that criticise Atari for countless reasons. Poor marketing, half-baked hardware, incomplete software or bad product support are just some of the accusations thrown at them.

Atari are certainly guilty, but not as charged. There are many factors that escape the majority of users, leading them to believe that any problem is purely Atari's fault. Commercial pressures often compromise an end product.

MultiTOS is a good example. It took years to develop from the public domain *MiNT* and *TOSWIN* combination, into a fully-fledged multi-tasking operating system. During its development, and especially when the Falcon was finally released, there was intense pressure to release MultiTOS. The general feeling was that bundling it with each Falcon sold would make the package more attractive and therefore generate more sales.

MultiTOS, however, was not ready at the launch of the Falcon. This caused confusion among dealers and users alike, with different policies for the US and Europe. Eventually, MultiTOS v1.01 was made available free of charge to Falcon owners and to others at a reasonable price.

Contrary to rumours, MultiTOS is still under development and many new features are still being added. The main complaint of lack of speed, especially on STs, has been addressed by the developers and forthcoming versions of MultiTOS will be surprisingly fast – a 10% speed loss is something that both Windows on the PC or Mac System 7 users would be more than happy with! Yet MultiTOS is soon to be the only multi-tasking OS that is fast enough to run on an 8MHz machine. Windows, by comparison, is so slow that a 33MHz CPU is considered to be the minimum requirement. Unlike the competition, MultiTOS does not require much RAM or disk space yet it manages to provide the user with all the facilities of Windows and more.

Unfortunately this only applies in theory. In practice, much of the power MultiTOS offers is yet untapped by most commercial programs, which leads me to my point...

The ST/Falcon market needs a good shake-up. MultiTOS and SpeedoGDOS now provide the building blocks for programs to use pre-emptive multi-tasking and fast font management. Writing a powerful application for the ST is much easier these days as documentation is available to everyone, not only registered developers. Programmers and software publishers should now make an effort to incorporate some of these features. This will revitalise the market and unlock the so far hidden powers of MultiTOS. Gone are the days of hardware hacks and software kludges – the ST now needs a standard interface and applications must be MultiTOS-compatible if we are to move forward. The only other option is a rather slow death.

Ofir Gal has been programming for many years and has various commercial programs to his name. As an Atari developer, he is acutely aware of what is currently happening with MultiTOS, TOS 5.0 and various other system enhancements. Not that he tells us anything...

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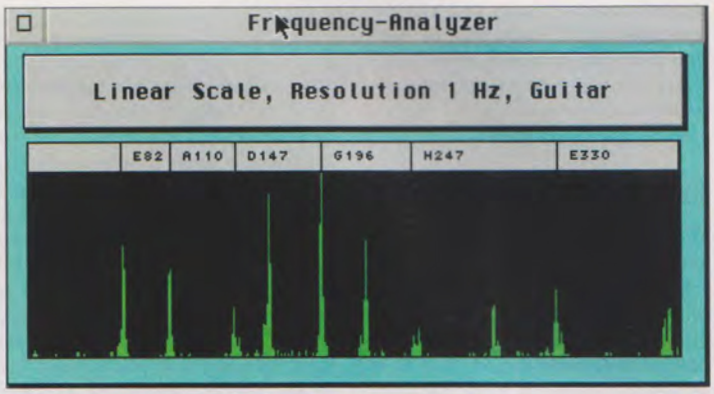
CHEQUES AND POSTAL ORDERS MADE PAYABLE TO WIZARD GAMES. PLEASE ALLOW 7 DAYS FOR DELIVERY. OVERSEAS ORDERS PLEASE ADD £2.00 PER ITEM, EEC OR WORLD.

LOOK - NO TAPE!

Interested in using your Falcon to record direct-to-disk? Ofir Gal enters fast forward mode with DigiTape...

The Falcon's digital signal processor (DSP) lends itself to two main areas of work; video and digital audio. For the latter, *DigiTape* is a brand new application that is capable of recording and playing back up to eight digital audio tracks and includes various built-in effects. It also features extensive editing facilities and MIDI synchronisation. A cut down version, which lacks the editing capabilities, is also available at a much lower cost.



The spectrum analyser doubles as a guitar tuner and helps to assess the required sampling rate.

THE MELTING POT

The package consists of a double-sided disk, manual and copy-protection dongle. Unlike most music programs, the *DigiTape* dongle plugs into the DSP port, leaving the cartridge port free for other protected programs such as *Cubase*.

Most functions are contained in two main windows. **Recorder/mixer** is where all recording and mixing is performed and controlled with the screen modelled on the familiar portastudio layout. This contains nine freely assignable channels, each of which may be used to record, playback or setup an effects module. An additional stereo fader is provided as a master control.

The **Edit** window allows you to edit either one or two tracks and supports full zoom in/out facilities as well as a list of markers, various time references and cut/copy/paste amongst others.

Other minor windows include one for setting the sampling rate and duration of a track, and a spectrum analyser. A useful addition is the on-line effects rack which lets you use up to four effects modules during play-back, but not while recording.

RECORDING TO DISK

Before recording can commence, *DigiTape* needs to know the number of tracks required, the sampling rate and length of the song so that the necessary disk file can be created for data to be stored to. This can take several minutes and is where I encountered the first problem with *DigiTape* – it refused to complete this procedure. According to the programmers, this is due to a bug in AHDI 6.06, the current Atari hard disk driver and *Digitape* will only work with v6.03, now supplied by CGS with each copy of the program. Unfortunately, this version suffers from a much worse problem – if a partition is filled while writing to disk, the next partition is then corrupted. Consequently, the authors are now working on a custom disk driver.

The maximum number of tracks depends on two factors: the hard disks' access times and the sampling rate. *DigiTape* can handle up to 32 tracks, although only eight of these can be played simultaneously, and recording is limited to one or two tracks at a time. These constraints are imposed by the Falcon's hardware.

DigiTape uses what the manual refers to as virtual tracks – any mixer channel can be set to record, playback or drive an effects module. To record, you simply set one of the channels into record mode. The channel then displays a small input level indicator and the on-screen fader may be used to adjust the recording level. The input meter turns red in colour if clipping occurs, a useful feature as overloading a

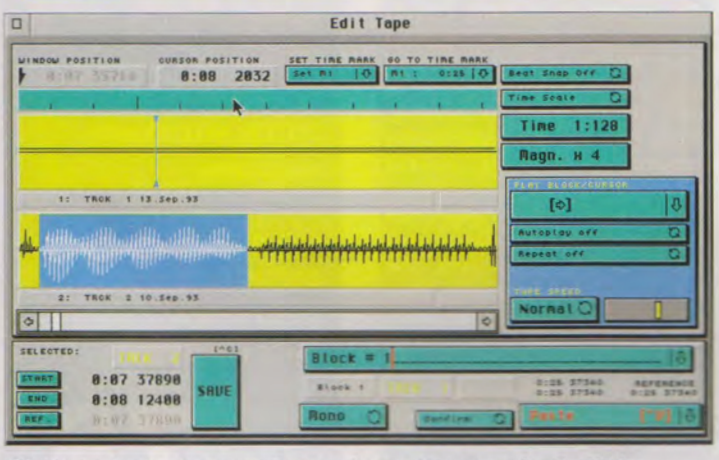
INSIDE INFO

WHAT DISK DO YOU NEED?

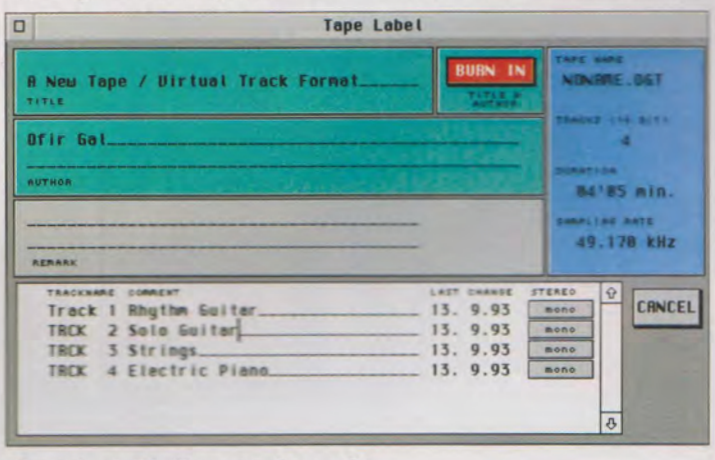
Digital Audio requires alarming amounts of storage space and the general rule is to buy the largest and fastest drive you can afford.

A single 16-bit sample requires 2 bytes of disk space. At a sampling rate of 33kHz this amounts to around 64 kilobytes per second per track! It's easy to see how a four minute song can use over 200MB of disk space.

Disk fragmentation is another problem which *DigiTape* attempts to avoid by creating a song file prior to any recording but this is no replacement for a defragmentation utility like *Diamond Edge*. A fragmented disk will slow down *DigiTape* or any other hard disk recorder and therefore limit the number of tracks that can be played back.



DigiTape features a waveform editor with extensive facilities, including import/export of audio files to other applications.



If required, DigiTape can be used to "burn in" a permanent copyright message.

digital recorder results in a chain-saw-type sound. Tracks may be put into rehearsal or record mode, but there is no punch in/out facility which is to be included in a forth-coming update.

HEARING THE RESULTS

Once recorded, any channel can be set to play-back by loading the relevant module into a channel. The play-back module can be assigned any '"tape" track and sports a fader, pan control, mute and solo buttons as well as two effects sends, each of which is equipped with a miniature fader and even a pre/post fader toggle.

Track "bouncing" in mono or stereo is a doddle with *DigiTape*. This process involves the recording of the output of two or more tracks onto another track, so freeing up the original tracks for further record-ing. This involves setting up record channels to receive their input from the master mix instead of the micro-phone socket. Unlike an analogue equivalent, *DigiTape* bounces tracks in the digital domain without any loss of quality. A very handy feature, considering the cost of hard disk space...

Above the mixer channels is the tape transport bar with controls for starting and stopping playback as well as fast forward and rewind buttons. In addition, there are a couple of buttons provided for quickly jumping to the front or end of a track.

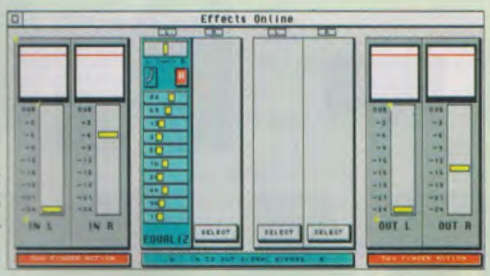
Currently, *DigiTape* does not feature mix automation, where fader movements and effects changes can be stored on disk and recalled at any time, but this is a planned feature. At the moment it does provide a total recall facility where all fader/button positions and channel setups can be saved to disk. This makes the process of loading an old recording rather simple as all you have to do is load the relevant setup file.

SPECIAL EFFECTS

The sound effect section includes two delay lines, reverb, flanger, graphic equaliser and a special guitar effects module called Zerr. This combines distortion with a noise gate and sustain. There is also a Karaoke module that attempts to remove the lead vocal from existing recordings, the success of which depends on the source material.

Some effects use all the DSP program area while others only use a small part of it, so while it is possible to have up to three effects at the same time, you are more likely to end up with one or two. All effects are monophonic, which leads to disappointing results with reverb and flange.

The effects in general are about the same as those in *MUSiCOM* and *Winrec* in both layout and actual sound quality. A rather surprising feature of *DigiTape* is the ability to load external effects, small programs that can be custom written. One sam-ple effect module is included, but writing more requires programming skills, a C compiler and a DSP assembler – definitely not for the novice programmer!



An on-line effects rack gives you access to up to four digital effects for live playing or practice.

EDITING RECORDINGS

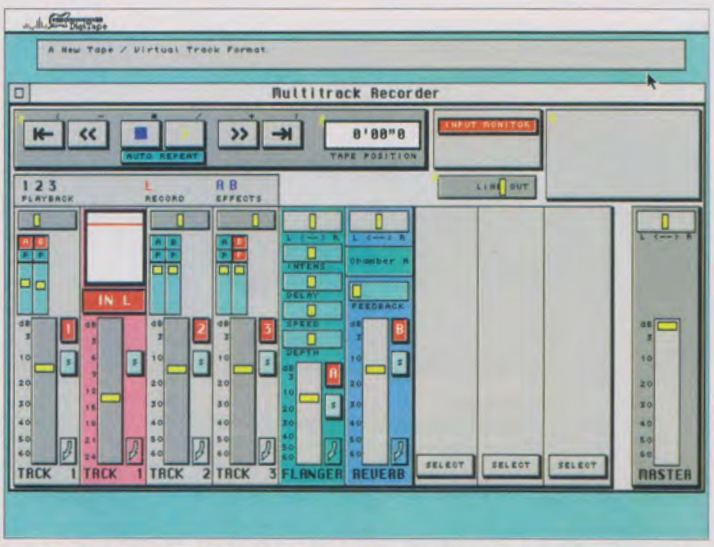
The full version of *DigiTape* features a waveform editor window with extensive facilities. Two tracks can be displayed at once, and these can be a stereo pair, where the editing can be linked to both, or two separate tracks.

Extensive zoom facilities make the editor capable of remarkable achieve-ments, from a complete song arrangement to very fine editing with a high degree of accuracy.

Clicking and dragging the mouse over a waveform selects a portion which can be cut and pasted at will. *DigiTape* can even export such sections as .AVR files and import such portions into the current song position.

For ease of editing, a user-defin-able time grid is displayed which can be calibrated for bars/beats or time code.

Up to ten markers are available, and these can be used to jump from one song position to the next. All functions are conveniently placed around the edit windows and sport an array of well-designed pop-up menus.



The main record/playback window incorporates a mixing desk modelled on the familiar portastudio layout.

OTHER FEATURES

A few additional facilities have been thrown in for good measure. MIDI Clock can be generated so that an external sequencer can be slaved to *DigiTape*. This currently lacks the ability to program tempo changes, a facility that CGS assure will be includ-ed in the next upgrade which should be available by the time you read this.

The Spectrum Analyser looks very effective in 16 colours, but has limit-ed uses – for instance, it is designed to serve as a guitar tuner but was found to be too inaccurate. Finally, there is the interesting facility to permanently "burn in" a copyright message into song files – should prevent expensive court cases!

VERDICT

The real test of a program like *DigiTape* comes with daily use. Disappointingly, it appears to be incompatible with *SpeedoGDOS*, *ImageCopy* and various other well behaved programs. Fortunately it does work with *NVDI*, so making screen updates very fast – much better than *D2D Edit* which can be very slow at times.

The program still lacks some essential features such as punch in/out, variable tempo tracks and improved effects. The facility to use the effects on a record channel would also be very nice; at the moment it is not possible to add effects while recording. Some form of mix automation would also be a useful addition.

***DigiTape* is a very powerful tool, but for its price it still lacks some key features and faces tough competition from *Cubase Audio* when it becomes available. But it's worth noting that the programmers are still working hard on implementing many new facil-ities and are very keen to listen to suggestions...**

- ✓ Powerful editing facilities
- ✓ Capable of achieving good results

PROS AND CONS

- ✗ Lacks some essential features
- ✗ Incompatible with many utilities

"DigiTape has great potential, but some refinements needed."

NAME: DIGITAPE
COMPANY: CGS COMPUTERBILD
CONTACT: 081-679 7307
PRICE: £499
MIN MEMORY: 4MB
SYSTEM: FALCON WITH HARD DISK

EASE OF USE	✪✪✪✪✪
DOCUMENTATION	N/A
EFFECTIVENESS	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL 78%

DigiTape is pure...

Music to everyone's ear...

DigiTape Lite

- 8 Track Mixing Desk
- 8 kHz to 50 kHz Selectable Sample Frequency
- Digital effects such as Reverb, Delay, Vibrato, and Flanger
- Frequency Analyser

£149.00

DigiTape Professional (as above but with lots more)

- 32 Virtual Tracks
- Additional effects to above include:
  - 10 Band Graphic Equaliser
  - Noise Gate
- Full Track Edit to one sample wave, which includes cut copy paste and silence
- Saves and Loads AVR file formats
- Generates midi clock for sync to Cubase and Notator

£499.00

Optional Extra

S/PDIF Interface

- Enables DigiTape to access Frequency of 44.1 kHz for CD & 48.0 kHz for DAT
- Direct connector to CD or DAT via optical or Coaxial connector ***£292.58***

CGS ComputerBild, 231 Northborough Road, Norbury, London, SW16 4TU
Telephone: 081-679 7307. Facsimile 081-764 7898

Andrew Wright looks at the Dragon Grapher, a new graphing utility that offers plenty of choice for presenting data...

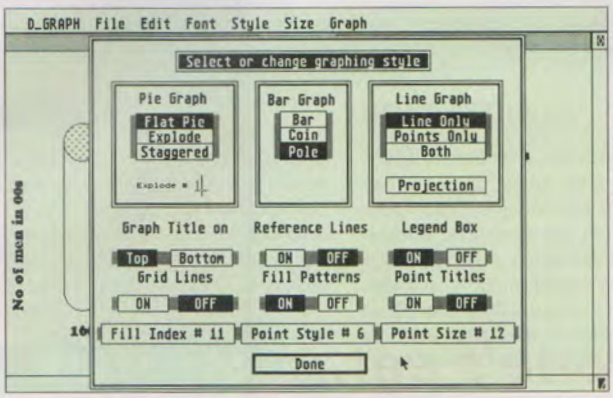
ENTER THE DRAGON

Most spreadsheets are fine for performing calculations and tabulating data in columns but they're rarely the "bees knees" as far as presentation goes. If you really want to impress on someone just how significant your data is, whether it's the result of a scientific experiment, a performance comparison or even the way your business is developing, the best way is to use a chart or a graph.

16/32 Systems has just released a program that claims to do just this – take data from a spreadsheet, turn it into a graph and save it so you can import it into a DTP program or word processor. *DGraph*, as it's also called, comes on no less than five disks, four of which are devoted to FontGDOS including an installation routine and other accessories. The packaging claims to include five font faces (by which I assume they mean typefaces) but I could only find four and three of these are the standard Swiss, Times Roman and Typewriter offerings provided by Atari. The fourth is called Greek which consists of the Greek alphabet and comes in 9, 10, 12, 14, 18 and 24 point sizes.

The A5 manual looks impressive enough but it really is very short, just 13 pages, and some assistance in setting up the FontGDOS system supplied would have been extremely useful. There is a useful quick reference card, however, something more programs should have.

DGraph works on both the ST and Falcon, with or without MultiTOS and on any sized screen. It works equally well with the original GDOS and the new scalable font handler, SpeedoGDOS (though only predefined point sizes can be used). ST owners will need 1Mb of memory and a monochrome monitor and though it works in several Falcon resolutions, graphs only appear in monochrome.



The style menu lets you choose from a number of options.

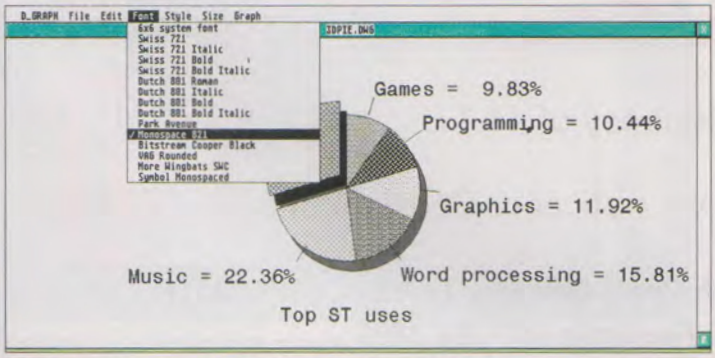
The problems start with installation. There is very little guidance at all apart from a small text file which suggests running the *Fontmover* program on the disk. This should set up FontGDOS but whenever I tried, it insisted on aborting due to disk errors. Having backed up the originals with no problem – and repeated the process by copying the individual files across – this was rather puzzling. Needless to say, you'll have to set FontGDOS up manually or use your existing setup.

The program has an easy-to-use GEM interface though only one window at a time can be opened – more would be useful so that the same data could be viewed several different ways at once. Data can be entered directly into the program very quickly and saved in a proprietary format or it can be imported in ASCII format from any database or spreadsheet supporting that type of export. Graphs can be saved in the same proprietary DWG form or as bitmap images, including Degas, IFF, MAC (Macpaint), DOO (Doodle) and IMG. Although the program is supposed to export in the GEM vector format too, I couldn't find an ST program that would read the results properly, including *Calamus*, *Timeworks* and *Pagestream*. As an alternative, you can install a virtual screen driver (such as the one supplied with *Mousetricks 2*) which produces larger bitmaps and enhances the final resolution.

There are four main graph styles available including pie charts, bar charts and horizontal and vertical line graphs. Oddly, some other common graph forms are unavailable, including horizontal and stacked bar charts. Pie charts can be flat, exploded or staggered and the bar graphs can use normal bars, coins or cylindrical poles. Line graphs can comprise points or lines and can be shaded underneath the line or not. While the packaging proclaims 50 different styles of graph, it has to be borne in mind that these include only minor variations of the main types.

DGraph isn't the most flexible program I've come across with regard to graph design. For example, with straightforward bar charts it's impossible to label the horizontal axis at all and the only option is to use legends offset to the right. Note not to the left, above or below, but just to the right. The flip side is that the user doesn't need to enter things like bar widths, spacing and maximum and minimum values – it's all done for you.

DGraph does scores its points on speed and ease of use. If you need to produce graphs quickly using a standard format, perhaps in school, *DGraph* should be up to the job. On the other hand, if you're expecting a comprehensive graphing utility, you'll be rather disappointed.



DGraph running on a Falcon with SpeedoGDOS.

✓ Easy to use
✓ Saves graphs in several different styles

PROS AND CONS

× Inflexible layouts
× Difficult installation program

"An easy-to-use, if flawed, package that promises more than it delivers."

NAME: DRAGON GRAPHER
COMPANY: 16/32 SYSTEMS
CONTACT: 0634 710788
PRICE: £79
MIN MEMORY: 1MB

EASE OF USE	★★★★★
DOCUMENTATION	★★★★★
EFFECTIVENESS	★★★★★
VALUE FOR MONEY	★★★★★

OVERALL 65%

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LIC 117 Trolls
LIC 118 Slalom/Jumping Ghost
LIC 119 Football Tactician

WPR 09 LEXICON. A pure word list containing 46,209 words without slang, americanisms or other rubbish. Needs 1Mb to run with SPELLONE (spellchecker) also provided on this disk.

ARC 20 BLAT. Superb STE ONLY falling blocks game. 10 fun filled levels. Superb DMA sound, will work with 512k but is a real treat on 1Mb machine. Great graphics.

BRD 16 COURSE FISHERMAN. Superb treat for any angler. Needs 1 Mb to run. 12 different venues. Whole host of variations in tackle. A great way to while away the hours when you can't get to the bank.

ADV 01 DDST, DUNGEONS & DRAGONS, Role playing adventure. PARANOIA, ENCHANTED REALM and ELBOZO CITY. 3 more good adventures also on this disk.

BRD 04 CHESS, superb chess game. DECODER, excellent mastermind. SUPER SIMON, computer version of hand held game. DOMINOES, puzzle game. GOLF card game. Also on this disk DRAGON MAZE, 2 game, SENSORI BACKGAMMON, BRIDGIT, ST ARTREK, BATTLESHIPS.

ARC 14 HOME, and L'ORB 2 super pinball games. GALTIC RANGER, unusual shoot em up. MONKIES & BALLOONS, bounce the clown and burst the balloons. FIRESTORM, another good arcade game rescue the humans. LAZERBAL, super game and interesting version on the pinball theme. Also on this disk LOST TREASURE, WIDOW MAKER, SLALOM & BREAK OUT.

AST 01 PLANETARIUM simply the best PD Astronomy program. SKYMAP another great Astronomy program plus aSTronomer.

BRD01 MONOPOLY, LAZER-CHESS, OTHELLO, CHECKERS, WHEEL OF FORTUNE and more. A superb collection of BOARD GAMES.

WPR01 ST WRITER V4.2 and FIRSTWORD. The best word processors for the ST(E) plus a spell checker, print spooler and a selection of ready to use letters.

ODD07 THE WORLD OF STARTREK. Over 300K of text interviews and biographies from the original STARTREK and NEXT GENERATION plus loads of pictures from both series. A must for all TREKKIES!!!

ARC04 TETRIS, superb Tetris game. KLAX TRIX, WELTRIS & TETSIDE, 3 more good games on the Tetris theme. MR DICE, COLLAPSE & BURGER, 3 more good games to fill this super value disk.

WPR02 IDEALIST. Super multi column text printer. EX COLUMN, DUAL COLUMN, 2 COLUMN. 3 more good multi column text printers. DOUBLE PAGE. Print 2 pages at once on A4 on your SLM 804.

WPR03 ALICE. Super text editor up to 10 docs. In memory at once. EDITEXT. Super little text editor. Ideal for beginners. NEWORD 400v3. Easy to use text editor, again good for beginners. NOTEPAD. Make temporary notes from within any gem program. PHONEPAD. Pop up telephone book. FILOFAX and ORGANISER. Everything a paper filofax would have and much more in these two programm. TYPEWRITE – Turn your ST into a typewriter.

ART 07 Superb art package, ideal for simple DTP. 23 built-in fonts. A4 size paper works in monochrome for best quality of print. Ideal for leaflets etc. DS Disk.

BRD05 AMERICAN FOOTBALL. DALEKS. STARTREK. DELTA 3. CELESTIAL CEASERS (versions 1 and 2). SPACE WARS. RED ALERT. MATCH. HANOI. OGRE. 11 Board and Strategy Games. SPLENDID SELECTION!!

ARC12 BELUM INTERACTUM – Good galaxians clone. BLOCKADE. HAUNTED HOUSE. AMORTRACK. BOING. INVADERS. MANIA. Another superb selection of arcade games.

ADV03 CONQUEST. Graphic adventure. Should take weeks to complete! (Shareware).

ADV06 BLACKDAWN. Good text adventure with excellent graphics. DUNGEON MASTER NEW LEVELS. Needs original DM disk to play.

UTL134 SAGROTAN. Must be the best virus killer around. V.KILLER v3.84. Another excellent virus killer. EXORCIST. The latest version of this V.Killer. HD RESTORE. Repairs hard drive boot sector. RIPPER and PROBE. Two programs to grab music and graphics from disks and more...

UTL120 ZX SPECTRUM EMULATOR. Needs 1Mb SPECTRUM to ST DOWNLOADER. Gives details on how to transfer Spectrum games from tape to disk for the above emulator. ZX81 EMULATOR and 89 PROGRAMS.

ARC15 CYBERTECHNICS Fast & furious arcade game. CRAZY ERBERT fast Q'bert clone. SLUG to fill the disk.

BRD09 MILE Excellent board game. D FISSION. Super Othello type game. TUNNEL VISION Excellent maze game. 3 jigsaw puzzle games. ST TIC TAC TOE, HIGH-LOW, BLACKJACK and more on this disk.

BRD12 TOWER POWER Super strategy game runs on 512K, 1Mb and 2Mb machine. Optional data disk available as BRD13.

ARC37 LLAMATRON and REVENGE OF THE MUTANT CAMELS. 2 superb games from Jeff Minter. These are a must for any game collection.

We also have a selection of 46 commercial games at under £3.00 each

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WRIGHT ISSUES

Showdown with British Telecom...

Most people count themselves lucky to get a letter or two in the post but for a journalist it's a different story. It can take me a good ten minutes to wade through the press releases until I find something worth reading. Even a bill can make a pleasant change – unless it happens to be the telephone bill.

A few months ago I decided to do something about the £500-plus bills and switched over to Mercury. Next, I "invested" in a high speed modem, a 14,400 baud beast that can upload or download around a megabyte every ten minutes. Wow, what a feeling! Suddenly I could download all those meaty files I'd never have dreamed of trying before.

Now I pay around £250 a month to Mercury and over £250 to BT. As far as I can see, having a high speed modem and a Mercury PIN saves me absolutely nothing. Why? It's all psychological I suppose. I pick up the telephone and think to myself: "Oh it doesn't matter how long I witter on, I'm on Mercury and it costs me about 20% less". And when I'm downloading a 800 kilobyte game just to see what it's like, I think to myself: "So what – I've got a 14,400 modem". All you do with a fast modem is download bigger files and more often!

I'd be even more unhappy, though, if I'd paid through the nose for an approved modem. With non-approved modems averaging half the price of the approved variety, it's hard to see why users should pay so much for the privilege of BT having cast its monopolistic eye over its innards. As it happens, my modem *is* approved. I bought it because it was on special offer and had a reliable badge as I'd had awful trouble with one of the cheaper 14,400 models. Frankly, I couldn't have cared less whether BT or the King of Siam had approved it or not.

Surely it would be in BT's interests to approve more modems, did I hear you say? More people would buy them and BT could then rake in the profits on a pay-as-you-log-on basis. Unfortunately, if the Modem Approvals Group, sponsored, naturally enough, by the manufacturers of approved modems, get their way, it will be illegal to buy a non-approved modem, never mind use it.

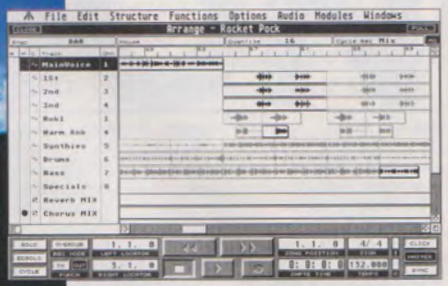
BT claim that non-approved modems cause all sorts of problems with their exchanges. What a load of rubbish – BT rakes in about £5,000 for awarding that little green sticker and the manufacturers can recover that and much more in the first few dozen sales. Frankly it makes me want to rip the green sticker off and put a red circle on instead. At least I'd be fighting back.

Andrew Wright is a freelance writer for various magazines and has been with *ST Review* since its inception. His contribution to the Atari world is matched only by his reluctant contributions to BT's coffers...

THE FUTURE

Does the Falcon have a part to play in Atari's future? According to the software houses, the answer is an emphatic "yes"...

Atari headquarters in Slough where the training took place.



The first integrated sequencer and digital audio recorder for the Falcon – Cubase Audio.

When news of the Falcon first leaked out in February 1992, it appeared too good to be true. Here was a computer for the future, a machine for the age of multimedia. Yet some 20 months on, one has to question whether the potential has been realised. Is the software really available that shows the Falcon in its true colours? Moreover, what are Atari doing to promote it in the UK?

Regular readers have probably seen the Falcon advert that *ST Review* carried a few issues ago and may even have obtained the full-colour Falcon030 brochure. But are the dealers being educated on a machine that is hardly of the "plug in and go" variety, and are there really any "killer" applications for it?

InShape – stunning new 3D rendering program from CGS.

Videomaster Falcon – 256 grey scale digitising and animation with TruePaint included in the package!

At the beginning of September, Atari held two dealer training days at its headquarters in Slough. We can tell you what went on behind those closed doors...

DAY ONE – THE SERIOUS END

Had the first demonstration set the scene for the two-day meeting, it is doubtful whether anyone would have stayed beyond the first hour. JCA (Europe) Ltd, the new UK *Calamus* distributors, proceeded to use the opportunity to knock Atari, resulting in some very red faces from the hosts!

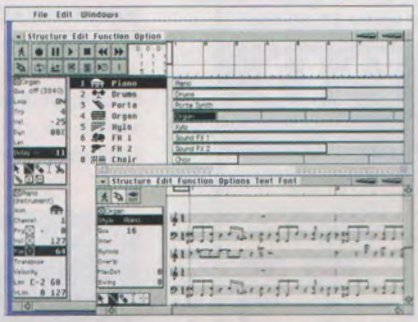
After such an inauspicious start, the platform was cleared for Ray Cross of CGS Computerbild who reminded the audience that all of his existing range of products run on the Falcon including *Didot Professional*, *Retouche* and *DA's Vector*. Then came *InShape*, a stunning new 3D modelling and rendering program that uses both the Falcon's DSP and an optional maths co-processor to good effect. Impressive stuff.

David Link of HiSoft followed with the unveiling of a wide range of Falcon-enhanced products including *Lattice C 5.6*, *DevPac 3.1* and *BASIC 2.1*. All now take advantage of the new Atari software enhancements such as *SpeedoGDOS* and *MultiTOS*, but also provide DSP libraries for the Falcon – an important point for software developers who require such tools. Additionally, HiSoft showed the latest version of *TruePaint* and some recent acquisitions: *Atari Works*, a comprehensive suite of small business programs, *Papyrus*, a powerful document processor, and the quality German resource construction set, *Interface*. Completing the demonstration was a sneak preview of the budget image processor, *TrueImage*. Serious software by the bucket load!

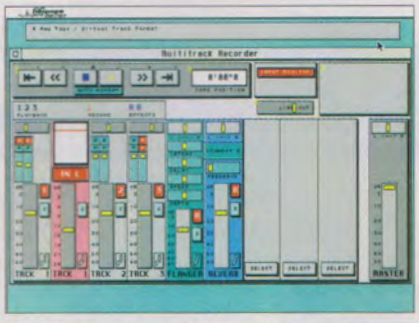
The applause had hardly died down before the infamous Karl Brandt of System Solutions weighed in with the latest Falcon version of *NVDI*, the best screen accelerator on the market. Karl also enlarged on the hardware side with a variety of hard disks, monitors and tower cases – he even had a keyboard kit that allows musicians to put their Falcon far enough away so that they can't hear the noise!

Despite some technical problems, Neal O'nions and Dutchman Theo Breuers from Compo ended the day on a high with a presentation of the new French program, *Studio Photo*. Loading PhotoCD images from a CD-ROM drive, *Studio Photo* was shown loading a JPEG compressed image from disk using a special import filter that uses the Falcon's DSP. The performance was stunning with a file being loaded about five times faster than would be expected on a 486 PC! The Falcon Speed PC

Photographic studio-style effects from Studio Photo.

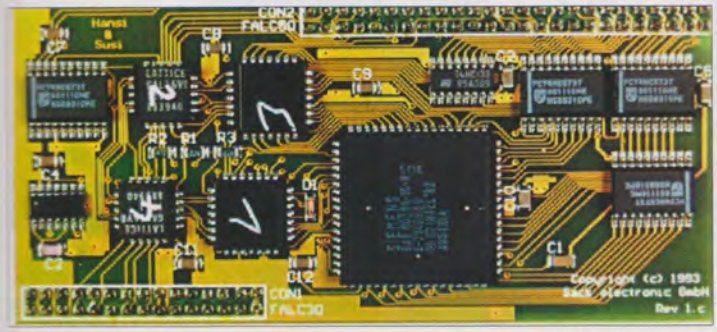


Emagic Notator Logic, successor to the best-selling Notator sequencer.



DigiTape – a professional direct-to-disk recording system.

OF THE FALCON



The Sack 286 emulator – 386 and 486 versions are to follow.

emulator followed, along with the announcement that 386 and 486 emulators would be available shortly, as did *Overlay*, a multimedia program for combining sound, picture and titling. Finally, Neal spoke about a new voice mail system for the Falcon that plugs directly into the LAN port and allows direct connection to a BT phone jack...

DAY TWO – TIME FOR SOME MUSIC

With the technical gremlins given their marching orders, the second day found Compo continuing from where it left off, but this time with *Musicom 2*. This budget direct-to-disk recording program was fast and easy to use, and worked in conjunction with Compo's new digital interface box that supports both CD and DAT (Digital Audio Tape). The demonstration saw the output from a CD player passing to *Musicom* via a direct digital link to the Falcon's DSP. The result? Superb quality digital audio!

While musicians are searching for quality digital audio at the right price, the integration of this with a sequencer is of paramount importance. Naji Simaan from Harman Audio started by calling the Falcon "not just another computer, but a revolutionary breakthrough" and proceeded to present Steinberg's *Cubase Audio*, the first affordable integrated sequencer and direct-to-disk recorder. Up to eight tracks of digital audio, effects, on-screen editing... and all in perfect time with the MIDI sequencer. Mouth-watering...

In the afternoon, CGS focused on *DigiTape* (reviewed on page 21). Matthias Kraus, the principal programmer, came over from Germany for the two days to help with the presentation. Ray unveiled a similar digital box to Compo's and showed the Falcon with *DigiTape* and a DAT recorder connected together digitally.

Mark Gordon from Sound Technology introduced EMagic's new flagship sequencer, *Notator Logic*. This appeared to be an open, flexible recording environment, very Mac-like in design. Also announced was the forthcoming direct-to-disk version, *Logic Audio*...

HiSoft AVR completed the informative two-day session with two new products. First there was *Videomaster Falcon*, a program for capturing and digitising images via the Falcon's cartridge port – with 64 grey levels and movie creation at 25 frames per second! The software handles true colour and the forthcoming Colourmaster hardware will allow the Falcon to accept an RGB signal and split it. And following on from the *Replay* series of products, there was *Clarity Falcon*, a sampling/editing system that utilised the Falcon's digital inputs and Included were two sample editors (one for RAM, the other direct-to-disk) along with the usual *Drumbeat* sample sequencing software and *MIDIplay* on-screen keyboard.

> *"It was good for Atari to get together the core group of companies developing software for the Falcon and put them in front of the dealer base.*
>
> *Our objective was to show the dealers that there are a lot of products available and more to come". Darryl Still, Marketing Manager, Atari UK.*

THOUGHTS FROM THE PRESENTERS...

"With our new Falcon products just starting to come on stream, the event could not have been better timed for us. Let's hope that Atari provide the catalyst for more Falcon030 promotions like this," noted Karl Brandt of System Solutions. As most Atari-based companies are rather small, such a meeting of people in one place is to be applauded, with Ray Cross commenting that "it was the first time we have had the opportunity to present our new Falcon products to Atari and their dealers.

"We took the event very seriously with Matthias Kraus, the programmer of our new *DigiTape* software, coming over from Germany specifically for this event".

Other companies were equally delighted. "We were pleased to have the opportunity to demonstrate our Falcon-enhanced products to UK dealers and were encouraged by the response from those present," added David Link of HiSoft AVR while Neal O'nions of Compo made the point that "this was a great start in getting the Falcon story over to dealers but we need more of this kind of event to spread the special Falcon message to a new audience".

THE FUTURE?

Being the first of such events, the number of dealers that attended could have been higher and slightly better organisation might have prevented some of the technical hitches. And while one or two companies specialising in the Falcon were not in attendance, there is little doubt that Falcon-specific programs are now here, and here to stay – if you want to see them in action, go to the Birmingham Atari Show on 5th December or the Manchester Atari Show on 12th December. More details from David Encill on 021-414 1630.

Now Falcon-compatible, NVDI is the best screen accelerator on the market.

FOR MORE INFORMATION...

CGS Computerbild:
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Harman Audio:
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HiSoft AVR:
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JCA (Europe) Ltd:
0734 452416.
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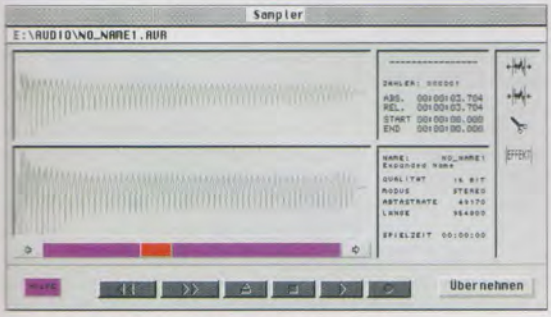
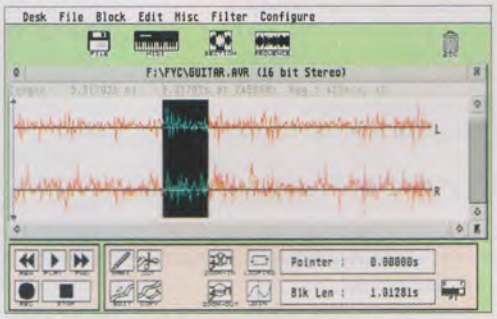


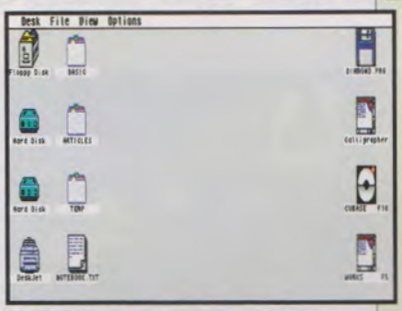
Direct-to-disk recording on a budget with Compo's Musicom 2.



Clarity Falcon follows in the footsteps of the Replay series of cartridges.

Want to buy a monitor for your Falcon? Can't find your way through the fog surrounding the facts? Let Ofir Gal help...

True Colour mode in 640 by 480 dots is not possible on an SVGA monitor. However, much higher display resolutions are possible with public domain utilities such as FalconScreen.



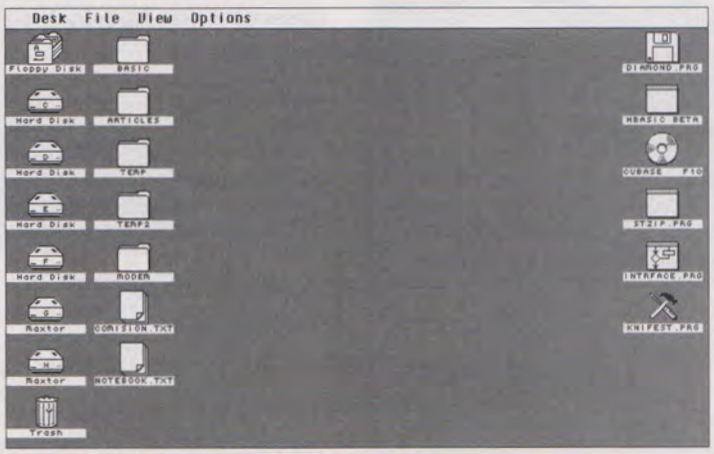
RGB monitors can display a resolution of 640 by 200 dots without interlace.

MONITORING THE

If you are a proud new owner of a Falcon, chances are that you've been trying to figure out which monitor will let you access all of the possible display modes. By providing a highly flexible video output, Atari have managed to enable you to connect a variety of monitors, surpassing all other home computers. While this approach is welcome, there is scant documentation...

MONITOR TYPES

In principle, three distinct monitor types can be used with the Falcon: the old and familiar SM124 family to display monochrome-only modes, RGB-type monitors like the SC1224, which can display all the colour modes as well as monochrome, and VGA monitors. In addition, a standard TV set can be connected to the Falcon as is the case with most STs. To add to the confusion, Atari have also included an overscan mode where the screen resolution can be extended by over 40%, a feature that is only possible with RGB-type monitors and TVs.



For compatibility, all ST resolutions can be displayed. Here, ST High is on display.

Monochrome monitors like the SM124 can display 640 by 400 pixels on the Falcon, effectively giving the same resolution as on a standard ST. The monitor is known for its crisp image and has a relatively high refresh rate of 71Hz so providing a flicker free image. Overscan mode is not possible with such displays.

VGA monitors can also function with the Falcon. These are commonly used with PC-compatible systems and are available in various sizes with prices ranging from £200 upwards. Most VGA monitors are capable of colour display but monochrome VGA monitors can also be found at a lower cost. These are designed to display a resolution of up to 640 by 480 pixels and the colour variety can display any colour mode from monochrome up to 16-bit True Colour.

SVGA monitors are enhanced VGA units, normally capable of displaying a wider range of resolutions. With a standard Falcon, there is no difference between a standard VGA and an SVGA monitor, although the advantage of an SVGA becomes evident when using utilities such as *FalconScreen* or ScreenBlaster. Unfortunately, SVGA is not a clear standard and monitors vary widely in their capabilities and price.

FALCON SCREEN MODES

The Falcon supports many screen modes and resolutions that vary depending on the monitor in use. The monitor port of the Falcon requires one of two adaptors, depending on whether an ST or VGA type monitor is in use. The video hardware detects which monitor is connected, and only allows selection of the resolutions designed for that monitor type.

The simplest case is the SM124 type monitor where only one mode is possible – a monochrome display of 640 by 400 pixels, which is identical to the ST's high resolution. With additional hardware like ScreenBlaster or BlowUp030, resolutions of up to 896 by 528 pixels are possible but such resolutions affect linearity – circles become elliptical and squares become rectangles. That said, the clarity of display is still there.

When a Falcon is connected to an RGB monitor like the Philips CM8833 or a TV set, more resolutions are available from the built-in desktop. The native display mode for these is 640 by 200 dots, similar to ST Medium resolution but the four colour limit no longer applies and there is now a choice between 2, 4, 16 and 256 colours along with True Colour. Interlace can be turned on in all of these modes which doubles the resolution to 640 by 400 dots but as this works by rapidly swapping the image on the screen, noticeable flicker is introduced when using text-based applications.

Interestingly, by using an interlaced two colour mode, ST high

JARGON JOGGER

***Overscan* – a standard Falcon display feature that utilises the black area around the screen. Only works with RGB-type monitors and TV screens.**
***Screen resolution* – the number of dots that the screen is divided into, given as two figures: horizontal and vertical.**
True Colour – the Falcon has the ability to show up to 65,536 colours on-screen.
***Interlace* – the vertical resolution can be doubled by switching lines on-screen. The drawback of this is the visible flicker.**
***Dot pitch* – the size of dot that the monitor tube supports. Smaller is better.**
***Horizontal frequency* – the rate at which the electron beam scans the display area. This has to match the Falcon's video or that for any hardware add-on being used.**
***Vertical frequency* – how may times the screen redraws each second. Known as the refresh rate, higher is better.**

The main advantage of an RGB monitor is the ability to use interlace to display True Colour modes with overscan. This snapshot was taken at a resolution of 768 by 480 dots.

FALCON

resolution is available so making it possible to run programs like *Calamus* or *Cubase* on a colour monitor. The flicker, however, is even worse in this mode...

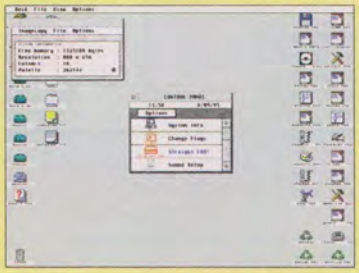
As a bonus, Atari have implemented an overscan mode for this type of monitor. Unfortunately, this mode is not available directly from the desktop and requires a small Auto folder program. When running in overscan, resolution is enhanced to 768 by 480 dots, the same format as PhotoCD images, enabling you to view images in True Colour at full size. As with other monitors, resolution can be extended a little further with hardware add-ons.

VGA monitors come in many varieties, but they are all the same as far as the Falcon is concerned with a screen size ranging from 14" to 21". The VGA standard originates from the world of PC-compatible machines and provides the Falcon owner with access to a high resolution, colour display. The basic display modes are all 640 by 480 dots, giving a little extra work space, and can cope with all display modes. Unfortunately, there is one drawback. The higher data rates required prevent it from displaying an 80 column screen in True Colour modes which means that only 320 by 240 or 480 pixel modes are possible. The main advantage of working with a VGA monitor is that interlace is not required and so all modes produces a clear and flicker free display.

VGA monitors can also be pushed to display resolutions up to 880 by 656 dots or beyond but this depends on the specification of individual monitors. Unlike RGB or ST monochrome monitors, the scan rates and hence the possible resolutions are not standardised. The only requirement is that the monitor is capable of displaying a resolution of 640 by 480 dots.

Newer generation SVGA monitors only differ in that a maximum resolution of 1024 by 960 dots is guaranteed, making them compatible with modern PC graphics cards. SVGA monitors can normally cope with a wider range of resolution than the standard VGA type and are usually capable of syncing to a wide range of scan rates. In this respect, they are also referred to as multiscan or multisync monitors, the latter being an NEC trademark.

WHAT TO LOOK OUT FOR WHEN YOU BUY



An SVGA multiscan monitor armed with a ScreenBlaster can display resolutions exceeding 880 by 656 dots. Note how little space the control panel occupies. Under MultiTOS, every extra dot counts!

As you've probably gathered, a VGA or SVGA monitor can cover most of the Falcon's video modes. But the VGA market has a wide range of different models and specifications, most of which can leave you bewildered and out of pocket if you're not careful. You're likely to want to expand the graphics capabilities of your system, in which case a multiscan SVGA monitor is highly recommended.

There are three figures to watch out: vertical/horizontal frequencies and dot pitch. The **dot pitch** indicates the sharpness of the display and the smaller it is, the better. Anything below 0.30 is good, but monitors tend to get very expensive when the pitch comes down to 0.26. The **horizontal frequency** denotes the rate at which the electron beam scans the display area, while the **vertical frequency** is the number of times the screen is redrawn per second, commonly known as the **refresh rate**. As a comparison, ST monochrome monitors have a refresh rate of 71Hz, RGB monitors can refresh at 50 or 60Hz and a TV set scans at 50Hz. Both rates are closely related to the display resolution and also the clarity and degree of flicker. Obtaining a higher resolution entails a lower refresh rate, so yielding more flicker. It should be noted that the scan frequency figures are irrelevant unless you intend to use ScreenBlaster or a similar product for enhancement.

Standard VGA monitors normally have a scan rate of 31.5kHz and refresh at the standard 60Hz rate. Some VGA monitors can also lock at 35.5kHz and refresh at rates ranging between 50 and 90Hz. This added flexibility makes them better candidates for use with hardware add-ons.

Modern SVGA-type monitors can sometimes multiscan and cope with a wide range of frequencies ranging from 30 to 60kHz with refresh rates of 50 to 100Hz. Needless to say, such monitors are highly recommended since they can cope extremely well with the different video modes. High spec monitors like these also tend to have a good dot pitch figure – and a price to match!

A high resolution screen can rarely display in True Colour mode. An SVGA monitor capable of such a feat would need to be able to scan at 15.75kHz and such a unit is expensive although it would be able to emulate an RGB-type monitor as well as giving all the advantages of an SVGA.

The standard display size is 14", but the bigger the better, especially if you intend to display resolutions higher than 800 by 600 dots. Even 15" can make a big difference. Using software or hardware utilities, such monitors can display a resolution of 880 by 656 dots at a refresh rate of 68Hz, more than twice the workspace of the SM124 with the same display quality!

To sum up, when considering an SVGA monitor, look for the widest possible range of scan frequencies, the smallest dot pitch, and the largest display you can afford.

A VGA monitor can display 640 by 480 dots in 256 colours.

MONITOR RESOLUTIONS

Just look up the monitor type and the number of colours or ST mode to find out the standard resolution, or number of horizontal and vertical dots, available.

Monitor	2	4	16	256	True Colour	ST High	ST Med	ST Low
SM124	640x400	No	No	No	No	Yes	No	No
SC1224*	640x200**	640x200**	640x200**	640x200**	640x200**	Yes***	Yes	Yes
VGA****	640x480	640x480	640x480	640x480	320x240/480	Yes	Yes	Yes

* Refers to RGB-type monitors as well as TV sets.
** Can use interlace to display 640*400 and overscan to extend the resolution by 20% each way.
*** Can only be achieved in interlace mode.
**** Note that many SVGA monitors can scan a wide range of frequencies and so are capable of displaying higher resolution with the aid of hardware add-ons.

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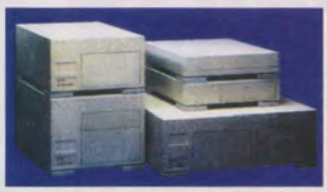

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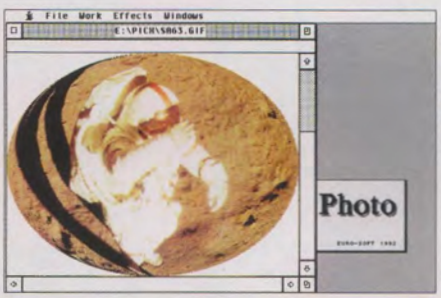

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YO HO HO AND A HANDFUL OF DISKS...

A great deal has been written about the subject, but what actually constitutes piracy? Tony Kaye looks at what it means to you...

What do you think constitutes piracy? That dodgy character offering cheap copies of games with either no manual or a photocopied version?

Research by FAST (Federation Against Software Theft) reveals that this type of piracy accounts for just 12% of the total of all acts of theft against software manufacturers. The largest group of offenders, with a total of 59%, are "ordinary" users unaware of the law.

So who are the offenders and what are they doing wrong? Over £300 million was lost last year through illegal software copying and, in many cases, law-abiding citizens who would stay on the pavement when the green man isn't flashing are causing the spread of piracy without knowing it.

One of the most pirated programs on the ST is version 2 of Cubase, despite being protected by a hardware dongle plugged into the cartridge port.

FACT OR FICTION

***"If software was cheaper, there would be no need to pirate it."* Fiction. It is a common misconception that software houses are making too much money from products and would sell more if they cut their margins. But it is human nature to hunt for a bargain and there is the "something for nothing" syndrome. Even if software costs 50p for a disk, someone would offer copies for 40p and somebody else would freely distribute it! And just like Mount Everest, someone would crack the copy protection simply because it's there.**

BLATANT OFFENDERS

As most of you probably think that this is the largest sector, let's look at the "public" face of piracy. On any Sunday morning, a large number of car boot sales take place up and down the country.

Very often, someone with an ST, Amiga or PC (or even all three) will take a selection of copied games to the sale with them. Maybe even a small generator to power their machine, too. Anyone wanting a particular game then gets a copy of it on the spot, often for just a few pounds. If game instructions are an essential part of the game, these will be supplied courtesy of a photocopier. Sometimes single disks may be offered with two or three games on them.

Many people will copy a game for a friend and even go to the lengths of photocopying the manual. Some will "crack" the game first, removing the protection so that it can then be freely copied. A few people set themselves up as members of cracking crews or groups who combine their resources to distribute the latest games. It has become a competition amongst these groups to get the games circulated quickest and reputations are gained and lost on the strength of how long this takes.

INADVERTENT OFFENDERS

Most inadvertent piracy happens in the working environment. How many people use a package at work and take a copy for their machine at home? It may only be used to carry out work for the company, but that software is unlicensed and therefore illegal. With several machines, all requiring similar packages, how many companies just buy a single copy of, say, a word processor and use it on all the different computers in the office? Unless each copy is sanctioned, or a multi-user site licence obtained, then this is also a law-breaking act.

In the home, it is very easy to fall into the trap of passing on copyright software without realising it. For example, a friend comes round and sees you playing the latest PD game and asks for a copy. "Yes, of course you can", you say and put the file onto a disk for them. There are two potential problems here. The first is copying the PD game without all of its relevant files, thus not fulfilling the wishes of the author. The second is the possibility of giving away a copy of a commercial utility already on that disk, such as *UIS III*, *NVDI* or other system enhancement that you automatically use.

Another way that software theft is

carried out is by simply selling old equipment. Hard disk drives can hide megabytes of illegal software that is then sold as part of the package.

CUSTOMER SUPPORT

When you buy a package, you don't just buy a few disks, a manual and a box – you also buy the company's time and attention for a given period. Owners of some older, more complex, packages that are no longer supported can tell you the importance of good technical support.

Being able to pick up the telephone or write a letter and ask a question is vital with most packages. In a business environment, information supplied at the right time can save a fortune and in the home, it can mean the difference between getting the most out of a program or putting it to one side in favour of something else. Most PD is not supported in this way, which is part of the reason why the programs are not as expensive as their commercial counterparts. If a package is heavily pirated and the company doesn't make the money to offer this kind of service, the genuine owners will suffer through not being able to get technical help.

> *How many people use a package at work and take a copy for their machine at home?*

If you were to look at the *ST Review* mailbag, you'd find many letters from owners of pirate software. How do we know? Well, being asked how to run *Cubase* or *Calamus SL* on a colour television is a dead give-away! These packages cost £399 and £575 respectively, so it is highly unlikely that the purchaser will be unaware that a £130 mono monitor is required to run them. After all, you don't buy a car without knowing that you need a driving licence and insurance!

Suspicious letters and telephone calls are received by the customer services departments of the software publishers, too. Often, they get requests for manuals and replacement disks, usually because "the dog chewed it" or "I spilled my coffee over it". Bridgett Hirst, Marketing Manager at US Gold said: "When we get a request for copies of disks or manuals, we ask for proof of purchase, for example the receipt or original disks, before we'll send out replacements. Quite often, we won't hear from that person again. The most common excuse it that the person has moved house and has lost the manuals to four or five games!

"The people who complain about the lack of ST software are usually people who have pirated programs at some time in the past. Perhaps without realising it, they have contributed to the problem. Pirates don't put anything back into the industry for future development of new products, so in the long run everyone loses out."

Piracy has caused scepticism, so genuine problems are often met with disbelief and even hostility. Perhaps this is one of the saddest indictments of our times...

COVER DISKS

An example of a lack of understanding of the law is with magazine cover disks. Commercial software is appearing more and more frequently but, although given away free with the magazine, such programs do not enter the public domain. They are protected by copyright and cannot legally be distributed to anyone. Again, we get requests to supply copies of cover disks which have to be turned down. All commercial software is licensed to be provided as part of a specific magazine issue, so if we have a particular back issue in stock, you can buy it with the attached software, but we can't copy and supply the disks on their own.

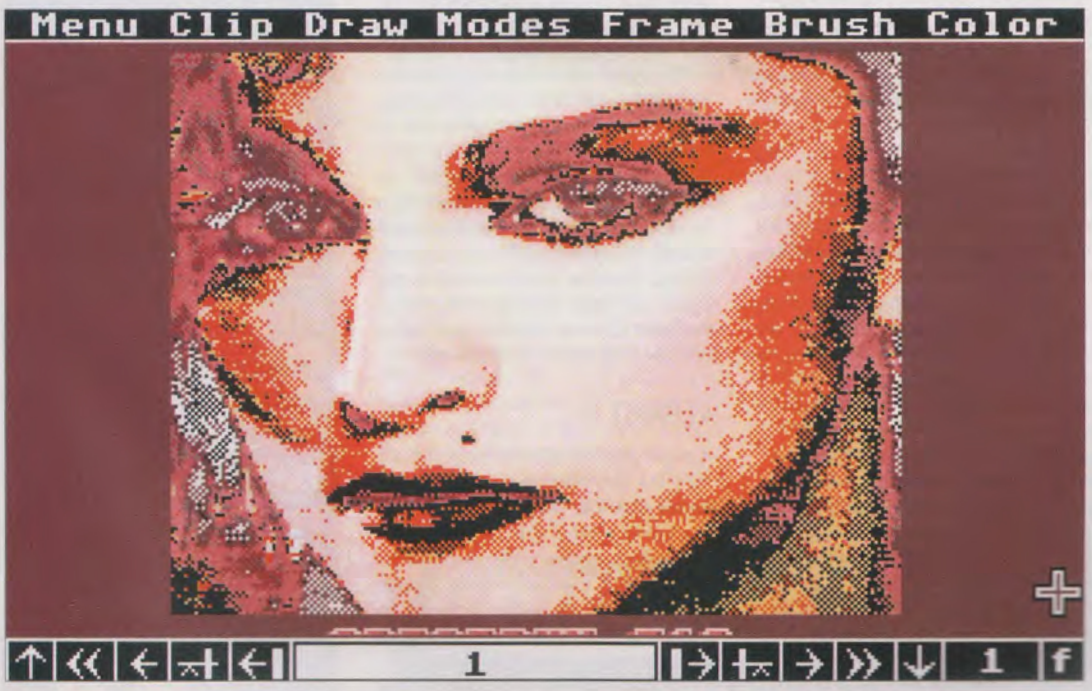
FACT OR FICTION

"The term piracy only applies to a large scale operation and all I'm doing is the same as copying an audio tape"

Fiction. What you are doing is stealing copyright material. Copying an audio tape is just as illegal and just as damaging to the music industry. The moral aspect aside, struggling artists, be they musicians or computer programmers, don't earn the kind of money you might think. Just because the people you see on television appear to make fortunes out of the business, there are thousands in the background who don't earn enough to make a living. If you wrote a book and someone placed it on a photocopier and sold the copies, would you think the same?

ST REVIEW ADVICE

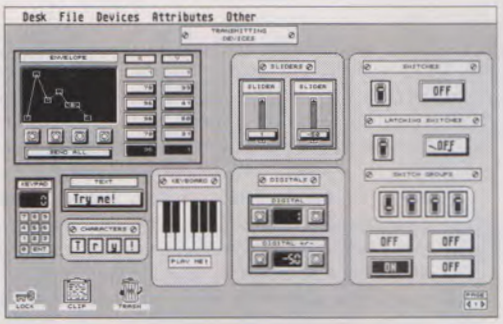
- Read the instructions that come with any software and respect the wishes of the author. If you are allowed to make a backup, then do so and put the original disks in a safe place. It is illegal to make a back-up of a disk if you are not given express permission by the copyright holder, even if it's just for your own use.
- Don't copy software onto anything other than a blank, formatted disk. If you are not sure whether a program is copyright, read any documentation and carefully examine the loading screens.
- Don't buy anything from a car boot sale unless you are sure it's a genuine product being sold either new or second-hand. If it's second-hand, make sure all the manuals and other documentation is provided.
- Don't copy software from machine to machine except for archive purposes.
- Do fill in registration cards and send them back to get support and update information.
- Keep documentation safe and take great care of original disks. Due to piracy, anyone trying to get a manual for a package because "the dog chewed the original!" is unlikely to be believed.
- If two people are using the same package on two different computers, check with the publisher and look to obtain a multi-user licence.



Cyber Paint is a copyright program. Just because it's been on one of our cover disks doesn't mean that it can now be freely copied and distributed.

"It is a myth that theft is always caused by 'someone else'. As long as software is systematically copied, our work will continue.

"Harder to curb are the many individuals who simply don't realise that it's illegal to copy the word processing or database program passed across the desk to them. Because it doesn't feel like a crime, they don't think of it as one. Educating these users remains a high priority."
– Bob Hay, Chief Executive, FAST.



A non-functional control panel showing the types of transmitting devices available...

... and these are CP-Gen's receiving devices.

FULL CONTROL

Want to create your own synth editor, MIDI mixer or other MIDI controller? Steve Wright finds that CP-Gen can help you to generate a customised control panel for any MIDI gear.

Most MIDI equipment has functions that can be accessed by System Exclusive (SysEx) messages – MIDI codes that have been specified by the instrument manufacturer for that particular instrument. Because such messages are exclusive to individual systems, it is impossible to create software which is guaranteed to work with all past, present and future MIDI equipment. Dedicated patch editors and librarians for synths have been around for many years, but these have the distinct disadvantage of requiring one program per synth in your setup.

A partial solution is to get a universal (or generic) editor, a single program able to communicate with a number of instruments by using modules (also called "templates" or "profiles"). Modules are supplementary pieces of code, usually ordered separately, which translate each instrument's exclusive MIDI language. But with universal editors you are at the mercy of the manufacturer to produce the modules you need. Buy a brand new keyboard and you may have to wait for a module to be written for it. Worse still, it's not always economically viable for software houses to write modules for rarer instruments – in such instances you could be left waiting for ever.

DO IT YOURSELF

Enter *CP-Gen* – a do-it-yourself editor kit for use with any MIDI equipment. *CP-Gen* is an icon-oriented programming language based around a very simple idea. You are provided with an unlimited supply of screen icons, called "devices", which are used to build control panels consisting of up to ten screens each. The devices are arranged on the screens by simple clicking and dragging, and instructed to transmit or receive specific MIDI messages via dialogue boxes.

Devices are of three types: **transmitting** (sliders, switches, numeric keypads, musical keyboards, text entry boxes and envelopes); **receiving** (lamps, gauges and digital readouts) and **passive** (labels and sub-panels used for decoration and labelling). Imagine that you'd like to put a slider on the screen to control your instrument's main volume. After selecting the Slider option from the Devices menu, a dialogue box appears which gives you the opportunity to enter a sequence of MIDI data bytes to be sent to your instrument. These should be the SysEx messages required to change the instrument's main volume, usually listed in the MIDI Implementation Chart at the back of the manual. The dialogue box enables the setting of a displayed range for the slider as well as an actual range – this is so that you could have a slider that, for example, showed values from 0 to 100 but actually sent values from 0 to 127. At this point you can also give the slider a meaningful label, say "Main Vol". A quick click on OK, and the slider is ready to be positioned.

In the case of the envelope device, a series of dialogue boxes is employed. This is because an envelope can have up to six movable parameter points, each with an "X" and "Y" value relating to horizontal and vertical positioning.

To make life simpler, you can define transmit and receive messages which can be applied globally to certain devices. Prefix and postfix strings are automatically attached to the start and end of any transmission or reception involving a device which has the GLOBALS option set. GLOBAL strings could be used for sending the SysEx start byte (F0) and the manufacturers ID code before transmission and the stop byte (F7) at the end.

VERDICT

A high degree of flexibility is built into the program. Devices may be joined together with "pipes", so that the value of one alters the transmit string of another. There are options to save and load all current device values used in a control panel, to merge devices from one panel with another, and to send MIDI Clock.

All in all, *CP-Gen* is a powerful but friendly interface for creating powerful but friendly interfaces! GRI-Soft get full marks for finding a way to make a tricky task as easy as possible – now let's hope that the manufacturers can get the SysEx information accurate!

INSIDE INFO

The most well-known universal editors are Dr. T's *X-Or* and Hybrid Arts' *Genedit*, although there are others. Of these two, *Genedit* is generally regarded to be the easiest to use, but it doesn't support as many MIDI devices as *X-Or*, and distribution problems in the past have affected its popularity in this country. *X-Or* (which gets its name from the words eXclusive ORchestrator) is supplied with a program called *E-Or* – nothing to do with Winnie The Pooh!

***E-Or* is an editor construction kit not dissimilar to *CP-Gen*, although Dr. T advises that you should only get involved with *E-Or* if you have considerable confidence in your abilities as a programmer. Further information about *X-Or* and *E-Or* is available from Key Audio Systems. Tel: 0245 344001.**

- ✓ Works with all MIDI equipment
- ✓ Friendly and logical

PROS AND CONS

- ✗ Cannot be run as a desk accessory
- ✗ Requires a good understanding of MIDI

"Enables anyone with a good understanding of computers and MIDI to control any MIDI equipment."

NAME: CP-GEN
COMPANY: GRI-SOFT
CONTACT: 0494 443266
PRICE: £79.95
MIN MEMORY: 1MB/MONO ONLY

EASE OF USE	✪✪✪✪✪
DOCUMENTATION	✪✪✪✪✪
EFFECTIVENESS	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL 88%

FATAR ACCOMPLI!

MIDI keyboards of any reasonable quality usually cost the earth. Vic Lennard tinkles on a cheaper alternative...

You've probably heard musicians talking about a "master" keyboard which has no sounds. What is the point?

Well, there are two ways of setting up a MIDI studio. The first is to have lots of synths, but such an approach is expensive, as a synth tends to be dearer than its respective sound module, and requires more space. The second way is to have a single Master keyboard plus a number of modules – cheaper and more space efficient.

Most master keyboards have a plethora of MIDI functions – multiple zones on different MIDI channels, the capability of changing patches on an attached sound module and so on. But what if you simply want a reasonable quality, basic master keyboard without the frills?

CUTTING THE COST

Chances are that you have never heard of Fatar keyboards as they are only sold by one store in London, namely Turnkey. The Fatar Studio range offers four master keyboards at prices from £119 up to £699. Of interest here are the Studio 49 and 61 keyboards at £119 and £190 respectively.

The Studio 49 is a 49-note (surprise, surprise!), plastic-cased keyboard weighing in at a little over 1.5 kilogrammes – in other words it's a light as a feather and very portable. The keys are full-sized with a very light, but positive, action, doubtless due to the lack of an aftertouch facility which gives cheap keyboards a somewhat "spongy" feel. The keys are fully velocity-sensitive which is impressive bearing in mind the price.

To say that the Studio 49 is simple to use is an understatement – you don't even get a manual! On the eft-hand side there is a power in socket for connection to the external power supply, included as standard, a MIDI Out socket and an on/off switch. That's it – nothing else at all apart from the 49 keys.

This immediately raises a couple of questions. The Studio 49 is light enough to play on your lap in a car or on a train, and yet there is no facility for battery operation – and as the power supply is for 9v AC, you can't simply wire in a PP3.

To produce a keyboard at this price involves some serious cost cutting, but there should at least be a socket for a sustain pedal. Such an omission makes it very difficult to play piano-style lines.

BIG BROTHER

The Studio 61 is a somewhat more rugged, 61-key version of its younger brother. The metal case helps to push the weight up to just under five kilogrammes but the features are exactly the same; power in and MIDI Out sockets plus an on/off switch. A nice touch is the red felt that runs along the back of the keys, giving the Studio 61 an air of class.

The lack of a sustain pedal is even more relevant here as it is difficult to think of a reason why someone would want to buy a five octave keyboard and then not use it with piano-style sounds. Such an omission is a serious one.

VERDICT

The old adage that you get what you pay for is never more true than where MIDI keyboards are concerned. That said, the Studio 49 is a good buy if you want an easy-to-use, portable master keyboard at the kind of price where no other options exist. Without the facility for a sustain pedal, the Studio 61 only has the five octave range in its favour, and Roland's PC-200GS beats it hands down for facilities at the same price but with only 49 keys.

As always, you pays yer money and takes yer choice...

The lack of a sustain pedal option on the Studio 61 outweighs the budget price.

INSIDE INFO

The other two keyboards in the Fatar range are also of interest. The Studio 90 (£599) has a weighted action with a miniature hammer to mimic a real piano.

With a full 88 notes, it has useful MIDI facilities: split keyboard, with independent MIDI channel and transpose per split, and a sustain pedal socket.

Top of the range is the Studio 90+ with the same number of keys and action at the Studio 90 but enhanced MIDI functions: 3-zone split, 3 MIDI Outs, patch change function, adjustable touch sensitivity and three assignable footswitches. At £699, this is well worth considering if you are in the market for a full-sized MIDI keyboard with professional facilities.

Fatar's Studio 49 – good value at £119.

- ✓ Budget priced
- ✓ Full-sized keys
- ✓ Touch sensitive

PROS AND CONS

- × No MIDI facilities
- × Lack of sustain pedal
- × Mains only

"While the Studio 49/61 keyboards are the cheapest in their classes, this has to be balanced against their lack of facilities."

NAME: STUDIO 49/61
COMPANY: ARBITER PRO MIDI
CONTACT: 081- 202 1199
PRICE: £119/£190
MIN MEMORY: N/A

EASE OF USE	✪✪✪✪✪
DOCUMENTATION	N/A
EFFECTIVENESS	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL 81%

PLAYBACK

Does a set of guitar solos on MIDI Files help guitarists and MIDI to mix? Vic Lennard flexes his finger muscles and finds out...

INSIDE INFO

The guitar solos on the disk are based on the *Solo* book by Phil Hilborne, one of the UK's top music transcribers. He is the techniques editor for *Guitarist*, a magazine for which he has written for almost ten years, and frequently tours the UK with his own band. The book costs £14.99 and can be obtained from MusicMaker Books, Alexander House, Forehill, Ely, Cambs CB7 4AF. Tel: 0353 665577.

As a professional guitarist some years ago, I used to spend hours on end listening to records and tapes in order to learn famous guitar solos. Part of this was to improve my recognition skills, but the main reason was to regurgitate the solos when playing live.

There are lots of tricks, like recording to tape and playing back at half speed. The result is that all of the notes play back an octave lower and at a speed that is approachable at first try!

Magazines such as *Guitarist* have spent years transcribing guitar solos using a method called tablature where notes are shown in terms of numbers. However, there was still the problem of using this in tandem with a record – there's nothing like using your ears!

Recently, Phil Holborne has released a book called *Solo* which details fifty of the classic guitar solos (see *Inside Info* box). To complement this, Heavenly Music have converted these into MIDI Files and added extra instruments such as drums, bass and piano to "flesh" them out. All fifty solos fit onto a single disk and are designed to be played back on a General MIDI sound module where the different guitar sounds are called up as necessary.

HOW DO THEY SOUND?

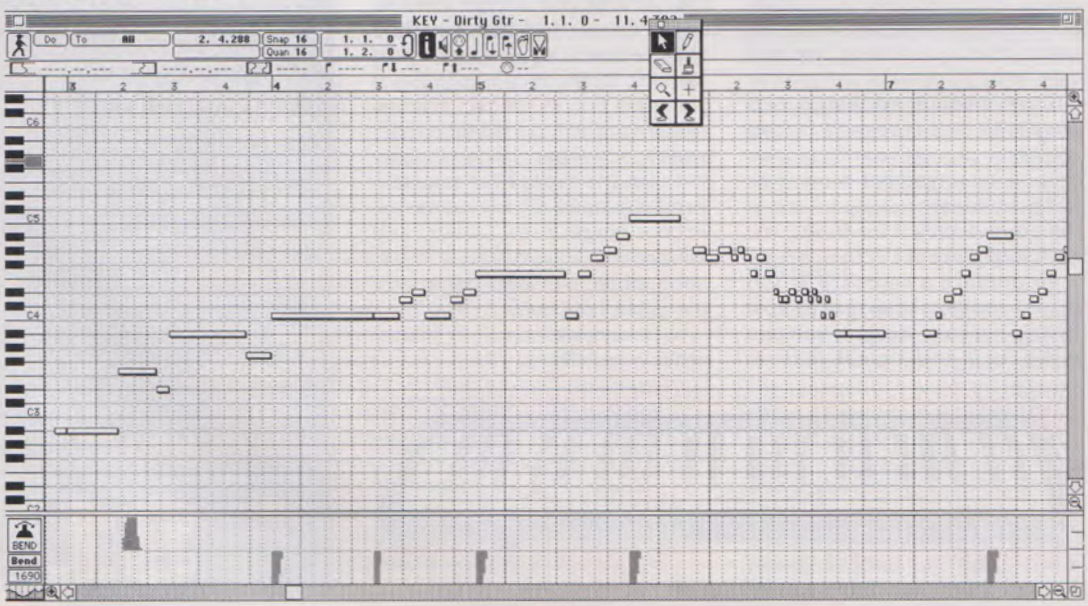
With fifty solos, where do you start from? *Hotel California* from the Eagles is as good as anywhere. Each file only gives you the actual solo, not the entire song, and for this song that's some 33 bars or so. First impressions are very good. The notes are correct and the added percussion, bass and acoustic guitar certainly help to give the right atmosphere. Of course, slowing down the tempo of the solo has no effect on the pitch which makes it very easy to play back at whichever speed suits your ear.

However, you soon start to realise that certain aspects of MIDI are really not suited to guitar solos – pitch bend for instance. To duplicate a person's finger pressing against a guitar string by twiddling a knob on a keyboard is almost impossible, especially where the speed of bend is concerned. This relies on the player's style, as does the finger modulation rate; such failings have to be taken into account with these files.

That said, slowing the tempo down a little had me playing along with *Hotel California* pretty quickly, although a copy of the book is imperative if you really want to learn the solos note perfect.

Playing back on a Roland Sound Canvas is a definite bonus as the filter cutoff frequency can be changed. In layman's terms, this means that the tone of the guitar can be changed which, along with alterations to the levels of reverb and chorus from solo to solo, prevents each solo from sounding the same. For instance, *Forever Man* by Eric Clapton uses a nice, smooth overdriven guitar sound, enhanced by plenty of reverb, while Brian May's *Crazy Little Thing Called Love* solo sounds much cleaner. Most of the all-time great solos are there: *All Right Now*, *Stairway to Heaven*, *Purple Haze*, *Bohemian Rhapsody*... the list is practically endless. The best renditions are those with limited pitch bend or that use it for effect rather than feel – *Disciples Of Hell* by Yngwie Malmsteen is stunning as is *Ladies Night* from Steve Vai and Randy Rhodes' *Crazy Train*.

If you're a guitarist who's been trying to learn the classic guitar solos all your life, this disk is well worth a look – but be prepared to buy the book as well.



Brian May's Bohemian Rhapsody solo masterpiece. The small "mountains" at the bottom of the screen show the pitch bend.

✔ Good selection of solos
✔ Accurate programming

PROS AND CONS

✘ Limited appeal
✘ Difficulty duplicating some guitar styles

"Having guitar solos as MIDI Files may appear a little odd, but it's one very good way of learning them!"

NAME: SOLO
COMPANY: HEAVENLY MUSIC
CONTACT: 0255 434217
PRICE: £14.95
RELEASE DATE: OUT NOW
MIN MEMORY: N/A

EASE OF USE	★★★★★
DOCUMENTATION	★★★★★
EFFECTIVENESS	★★★★★
VALUE FOR MONEY	★★★★★

OVERALL 88%

T.S.C.

51, Thornleigh Road,
Bishopston,
Bristol BS7 8PQ
'Phone 0272 - 424743

T.S.C: The Shareware Company. Not *all* PDL's are the same!

TSC is proud to have been chosen as the official PD library of the Falcon Owners Group – the only officially approved Falcon Users' group! We're also proud (although the emotions are mixed!) to have had to warn yet another PDL about pirating chunks of text from our catalogue. Two more indications that we're doing it right! We're not the biggest PDL, nor quite the cheapest – but we're a heck of a lot bigger than the cheapest, and a heck of a lot cheaper than the biggest. We have a real live computer-literate person by the 'phone, waiting to take your order, offer **free** help and advice, advise you on what software is best for the job... (We're more than "just a catalogue to order from": even if ***you*** don't know what it is you want, tell us what it is you want to do, and we'll tell you what you need – and supply it). We take the attitude that "Happy customers have deep pockets" – if we go out of our way for a customer, then they'll keep coming back, they'll tell their friends, and the effort is repaid. Our advert, you'll note, **isn't** just a list of disks we've got to offer: we'd rather help you choose the right one (from over 1,800). We swap disks with PDL's and collectors all around the world; from "just down the road" to Australia – by the time you read this, the list of disks would be out of date anyway. We're very proud of our catalogue: not (as we've seen elsewhere) "This disk contains many useful utilities" but a full description of what's on each disk, *and* what it does. The (massive) Clipart section for example lists every file on *every* disk. The sections are: Applications & Util's, Business, Comms, Clipart, Desk Acc's, Education, Falcon, Fonts, Games, German translators, GFA BASIC, Graphics, Languages & Programming, Music, Odds & Sodds, and finally Word-Processing. If we printed out the textfiles, in three-columns 9-point Times (that's tiny!) it would run to over 100 A4 pages – and it's actually fun to read! If you'd like a copy of the catalogue, then send a **new** DSDD disk and an SSAE, or three first class stamps. Please specify if you're a Falcon or ST owner (or, indeed, both)!

Could easily be the best decision you make this month!

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Our entire PD library has been re-catalogued. Old software has been removed, lots of new software has been added and disks are now double sided.

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Font Disks – Easy Text Plus/Pro
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MT SOFTWARE: Greensward House, The Broadway, Totland, IOW, PO39 0BX

TEL: 0983 756056 FAX: 0983 755800

THROUGH THE

Tony Kaye goes back to Birmingham this month for a look at a major player in the software market, US Gold

What is it about Spaghetti Junction? In all my years of travelling around the country, covering up to 70,000 miles a year, I hadn't navigated this infamous landmark until last month. Now I find myself doing it again four weeks later. OK, I give in – whatever it is I'm being punished for, I won't do it again!

A lot of money is spent on games every year and although *ST Review* tends to specialise on the serious side of the ST, most people like a little recreation to go with their toils. So how professional is the games market?

Holford Industrial Estate is home to US Gold, one of the largest software houses in the business. The reception area is very impressive, with plenty of trophies and certificates presented to the company over the last nine years or so. My guide for the day was Bridgett Hirst who started with a brief tour of the premises, ending up in the Software Development Department. Here, I was introduced to Tony Bourne, the development coordinator. Tony explained the work that goes into making sure that a game is as close to perfect as possible when it reaches the customer: "We have three producers, each working in the same way as a film producer would, supervising a project. They are backed up by a team of testers whose job it is to find out what can go wrong and get it rectified.

"A program like *Legends of Valour* took about 600 hours of testing, which costs around £7 per hour!"

The reception area houses an impressive array of trophies and certificates.

KINGMAKER

Graham Lilley is the author of the latest US Gold release, *Kingmaker*. He was working away on a PC, but, we are assured, the game will definitely be out on the ST: "An ST version exists, but it's not up to this revision level yet. So we know that it runs on the platform." said Graham. The backdrop for the game is the War of the Roses fought on the battlefields of Yorkshire and Lancashire. Allegiances are divided between the two and to gain advantage, you may well have to change sides and execute a few loyalists. Sounds very much like modern day local government to me!

People will not give a game a second chance if it doesn't play properly straight away, so the testers have to look at it from every angle, not just the correct path to complete the game. The testing department was rather manic, but my lips have to remain sealed – but keep an eye on the *First Impressions* pages in the future...

I raised the question of protection with Tony, highlighting the use of both manual and disk protection. He agreed that "the use of both is not necessary. One or the other is good enough. We are experimenting with key disks as with *Scrabble* and other methods that let the game be played and at the same time, deter the pirates."

PRODUCTION

The next stop on my grand tour was an office sited one side of the warehouse where I met Bob Kenrick. His job is to monitor a product from the concept to shelf. The production department makes sure that the manual is within "house style" and not only accurate, but inoffensive. They take the basic instructions from the programmers and write it to appeal to the target audience. "If a game is intended for kids, it's no good writing the manual for adults and vice versa," he commented.

Bob's team make sure that licensed products are represented

You can't have a keyhole without a front door, so here's the entrance to US Gold!

Graham Lilley, author of the latest release, Kingmaker.

KEYHOLE

correctly and logos and copyright notices appear where they're supposed to. All components, such as disks, manuals, boxes and any other parts have to go together correctly. "Using outside duplication, it's important not to fill a box with an ST Disk One and Amiga Disk Two, all in the PC box!"

All disks are run through rigorous virus and quality control checks. If an application has a bug, then an update can be released, but if a game is not right the first time, all is lost.

One of the biggest surprises to Bob is the success of *Leaderboard*. Realistically, US Gold didn't expect to sell more than about 15,000 copies, but seven years later it's still selling on budget and has sold over a million copies. One techniques used to sell products in the early days was the adding of an audio tape with a program tape, so giving the user a soundtrack from the arcade game as well as the computer version.

Games have changed over the eight years that Bob has been with US Gold. CD technology has taken off and arcade games have been more or less confined to the consoles. Role playing games, however, have come to the fore for floppy disk-based systems. "Nowadays, games are written to a formula so that porting them from one machine to another is easier than before", explains Bob.

Adding value to a pack is a way of reducing piracy, too. A well presented pack with a nicely produced manual is worth buying to keep rather than a photocopied sheet with a list of codes. It is necessary to have a manual with some games to play it to the full, as it imparts important information on the way to proceed.

OPERATIONS

Next stop was the boardroom to meet Bob Malin and Marie Considine from the Operations Department. They are responsible for Licensor Liaison – a grand title, which means that they deal with all of the different elements of licensing a game. It may be dealing with a software writer or a large corporation like Lucasfilm.

Marie says "The company has always taken its strength from taking other opportunities, perhaps before other people have become aware of them, so we actively seek new licences as well as sorting through the companies that approach us."

A trip to America for the Consumer Electronics Show in June for Bob this

Bridgett Hirst, responsible for marketing and PR at US Gold.

year has brought a range of new possibilities to US Gold's arsenal. This is why the meeting took place in the boardroom and not in the department itself as there are too many sensitive documents lying around for a journalist to see. *(Now that would have been a story... Ed).*

US Gold have managed to have top titles in virtually all games categories from role-playing to arcade, and a broad range is seen as the way to survive in the industry. "One category may do well now, but who knows when it'll drop and another style of program will become popular. We're ready for that eventuality," clarifies Bob.

The future of 3DO and Atari's new console, the Jaguar, are under consideration as far as software development is concerned. "We'll be watching both markets very carefully to see what to develop and what to avoid", remarks Bob. "If the Jaguar shows market potential, we're in a position to move very quickly. We do have contact with developers that we already know are doing work on the machine, so we can get the expertise and it would be quite easy to get some of our stronger titles converted over to the new platform."

PIRACY

The question of piracy rears its head whenever you talk to software manufacturers. The opinion seems to be that the newer PC market is less open to piracy than those of the ST and Amiga. Cartridges are far harder to copy than floppy disks, but PC owners appear to have a higher degree of integrity. "PC owners seem to have a sense of pride in owning a full package with all the manuals than just the disks," was how Bridgett rationalised the situation.

With the advent of CD-ROM, piracy starts to become non-viable. With up to 640 megabytes of data on one disk, that's a lot of floppies!

KIXX AND KIXX XL

The next person to sit in the Mastermind chair in the boardroom was Craig Johnson, brand manager for the Kixx and Kixx XL labels. His job is to look for products to release on the budget Kixx and mid-priced Kixx XL labels.

There will be over 20 titles available on the XL label by the end of the year with more in the pipeline. All but two of the titles will be released on the ST and any that can't be found in the shops can be ordered direct from: Kixx Mail Order, Units 2/3, Holford Way, Holford, Birmingham B6 7AX. Tel: 021-625 3366, ext. 2158.

There is also a full Kixx and Kixx XL catalogue available via a stamped addressed envelope to the same address.

The warehouse is bulging with new stock waiting to be shipped to the dealers.

Bob Kenrick makes sure that the Production Department runs smoothly.

OVERALL IMPRESSIONS

US Gold are a highly professional organisation. You don't quite realise how well planned a game is until you look behind the scenes. The early views of software houses being full of spotty 16-year-olds who simply play games all day and order new Ferraris are just not true any more. It is evident that a commitment has been made to offer the public as much in the way of quality and value for money as possible. The Kixx XL range is evidence of this pledge, bringing top quality games onto the market at realistic prices. More of the same, please, software houses...

Graham and Rob, collectively known as Clever Music. In the background is sound-proofing material for the vocal booth.

Graham's studio – a comfortable, well lit working environment based around an expanded 520STE.

If you saw either "Only Fools and Horses" or "Birds of a Feather" on BBC1 last Boxing Day, then you've had a taste of Clever Music – and all on the ST as Vic Lennard finds out...

CLEVER MUSIC

Courtesy of the in-built MIDI sockets, the ST has been *the* music computer for many years. But how about creating original music for pictures? Is the ST up to such a challenge?

Graham Jarvis and Rob Hartshorne should know. Collectively known as Clever Music, they're a perfect example of two musicians who have broken into this area of music, having been involved in almost 300 projects over the last seven years. These have ranged from corporate work for the likes of Sony, Peugeot and BT through to involvement in TV themes or incidental music for a whole host of programs including *Birds of a Feather*, *Only Fools and Horses* and various Ruby Wax specials.

CLEVER MUSIC PROJECTS

The first key project was the music for the Peugeot 405 product launch. Held at the NEC, with a total budget of four million pounds, the project gave Clever Music a definite plus in the profile stakes. The next big break was the *Ruby Wax Miami Memoirs* for Channel 4, the first excursion into TV apart from some adverts. Getting into BBC took a little longer and was finally achieved courtesy of *Trust Me*, a Screen One film.

Other major projects for TV include *Birds of a Feather* and *Only Fools and Horses* for BBC TV, *East Meets Wax*, *Wax Goes Off*, *Wax on Wheels* and *Nightingales* for Channel 4, *Root into Europe* for Central TV, *The Tomorrow People* for Thames and *Runaway Bay* for Yorkshire TV.

Promotional videos for companies reads like a Who's Who of British industry: Abbey National, BMW, Black & Decker, British Airways, British Gas, BT, Daily Telegraph, Esso, Ford, General Motors, Gulf Oil, Hoover, Jaguar, Land Rover, Mars, Midland Bank, Mobil, Nissan, Opel, Peugeot, Philips, Rowntree, Sanyo, Shell, Sony and the United Nations – to name but a few...

GETTING STARTED

So how did they meet up? "I answered an advert in Melody Maker for a 'competent bass player' although why I looked under the letter 'C' is a bit of a mystery," reminisces Rob. "It was my band," adds Graham, "and although it didn't last for long, Rob and I continued to work together."

Many working relationships sprout from the demise of a band, mainly due to having use of the shared equipment. This is certainly true of Graham and Rob.

"Originally we did some work for computer games on the Commodore 64 in 1983, just before MIDI came out," explains Graham. "We decided that commercials might be good to get into and legged it around lots of advertising agencies to try and get work.

"This was about the time that the corporate market was starting up with lots of videos and Rob managed to get involved with the IVCA, the corporate manufacturers association. Over the next year we got a few bites at jobs and then, in September 1986, set up Clever Music as a partnership."

The current premises used to be Graham's electronics workshop. "We strung together bits of wire all over the place and slowly modified it over the years," laughs Graham. At the time of deciding to work together as Clever Music, MIDI was still very much in its infancy and sequencers were still a pipe dream – "the first thing we bought with a sequencer was a rather obscure drum machine" – so with Fostex A8 and Revox B77 eight and two-track recorders respectively, Clever Music's first projects were recorded in real time on tape.

Initially, was there a shopping list of equipment? "Not really. We knew exactly what we wanted – something that enabled us to record music, play it back and be able to edit it. It was definitely going to be computer-based," explains Graham.

Various disastrous crashes on the Commodore 64 led to a search for a more reliable machine, but money was tight as it takes time to get such a company established.

"We had no database or clients and had to keep grafting away, trying to get people to use us," comments Rob. Graham's electronics company supported the pair of them after Rob took the big gamble of leaving his full time job in late 1987:

Rob's room – rather more compact and with lighting kept at a low level.

Clever Music's rather impressive set of awards, two of which are from the IVCA for "Best Original Music" in 1990 and 1991.

"It was really a matter of sink or swim with Rob trying to get Clever Music started," clarifies Graham.

The big break had to come and, courtesy of a piece of music written for a promotional video for the Peugeot 205, Clever Music landed the product launch for the 405. The project started on a Yamaha CX-5 computer, but it soon became clear that this was not up to the job; enter the ST running Steinberg's *Pro 24* sequencer.

"We went to Denmark Street in London and were offered a choice of computer. The Atari ST was about £500 or £600 while the Apple Mac was some £2,500!" remembers Graham, shaking his head.

Armed with a 1040STF, and various synth and sampler modules, Graham and Rob headed back to Tooting with the Peugeot project to get on with. Were there any setting up problems?

"We needed to work on it that day, so the salesman brought it round at seven o'clock at night, gave us a rapid run through on it and cleared off at midnight. It started earning its money immediately!" chuckles Graham. "We had session players coming in the next day," remarks Rob, "in the form of a brass section for the Peugeot project."

This meant using the Steinberg SMP24 time code generator to lock together the tape recorder, now a Tascam 38, and the ST. Despite the lack of time to learn the system, Clever Music was able to deliver the music on schedule.

At this point, equipment for the video side was, to say the least, basic – a VHS recorder and a TV to be precise!

CHANGE OF SOFTWARE

While *Pro 24* revolutionised computer sequencing, there is little doubt that it was inadequate for audio visual work. "A lot of our problems were based around the SMP24 and after a couple of ROM changes, it sort of worked and didn't crash too often," remembers Graham. As soon as they heard about *Cubase*, initially called *Cubit*, they offered to test it. Another ROM upgrade for the SMP24!

With business booming, Graham and Rob found that they were working in parallel on different projects with the same equipment – a little like operating in shifts! "At the time, we were also setting up the fundamental base of our admin system, creating a bullet-proof database on the PC with *Paradox* software."

A MegaST 2 was purchased in late 1988, on the back of one of the few disasters that Clever Music suffered. In the kind of tone that warns you that a tale of woe is about to follow, Graham says: "We started working at six o'clock one Saturday morning on a project that had to be completed that day. Two hours later, the computer went on the blink and there was nothing I could do because the shops weren't even open.

"We knew that we were operating a risk because we were on a tight budget, but I had to go round the streets kicking doors for half an hour."

This was immediately followed by the purchase of a copy of *Cubase* at the beginning of 1989 along with the progressive building up of a second set of equipment with a keyboard and various sound modules, although still in the same room.

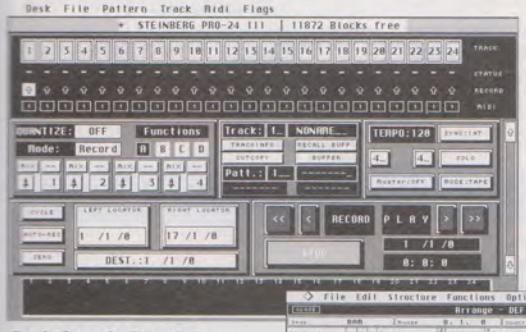
The purchase of an adjoining garage led to the building of the second studio and a kitchen. "Initially we did everything ourselves," says Graham with a grin, "but the change in philosophy came when we had to build the dividing wall – it was just too much for us! A local workman now carries out any building work that needs doing." The final piece of the jigsaw was a 4Mb STE to replace the four-year-old 1040 in late 1990 along with a second copy of *Cubase* and the addition of some serious equipment, including professional video machines, and the employment of two people to handle the admin and general day-to-day work.

TO THE PRESENT

Currently, Clever Music is involved in composing music for its first full-length movie. Starring a rather blue Northern comedian by the name of Roy "Chubby" Brown, the film is called *UFO*. The opening sequence is a spoof of *Star Trek* and the humour sets the scene nicely for the rest of the film!

Any advice? "You get work first of all because people think you can do the job, but even more so by the fact that you're very affordable," muses Graham. "Also, you need a bullet-proof filing system and reliable dispatch companies. Music is usually produced in the last couple of weeks of any project and we're not approached until, say, two weeks before the deadline.

"So you find yourself writing music on the same day that you have to deliver it. With only hours left to write the music, and with the dubbing studio costing several hundreds of pounds per hour, you need reliability. Typically, we use five or six companies now."



Steinberg's Pro 24 sequencer, the sequencing program used by Clever Music initially...

... and replaced by Cubase, one of the industry standards.

WHICH ST?

Graham's studio uses a 520STE, upgraded to 4Mb, and an SM124 mono monitor along with three pieces of Steinberg hardware: SMP24, Midex+ and the 16-bit Digital/Analogue board. Robert has a MegaST 2 (TOS 1.02) with an SM124 and another SMP24. Both men swear by Naksha mice!

The original 1040STF and SM125 monitor is now used for general disk copying and printing via a Canon BJ-300 printer.

Besides *Cubase*, the only other software used is *Avalon 1.0* for sample editing, a *Soundworks* editor for the Roland D-110 sound module and the *Chameleon* sound librarian.

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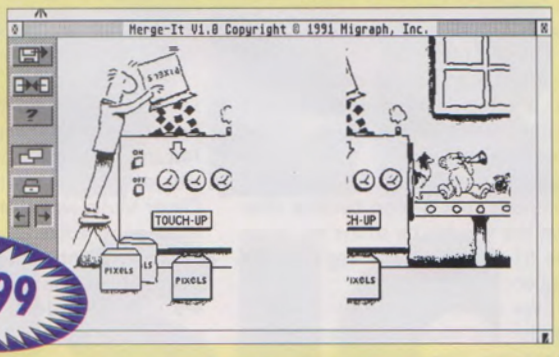

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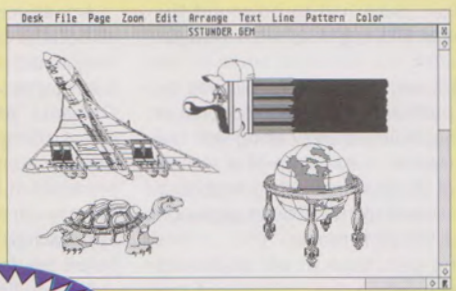

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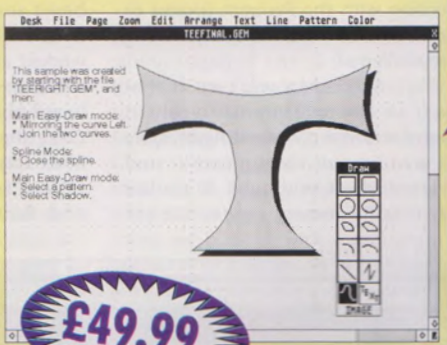

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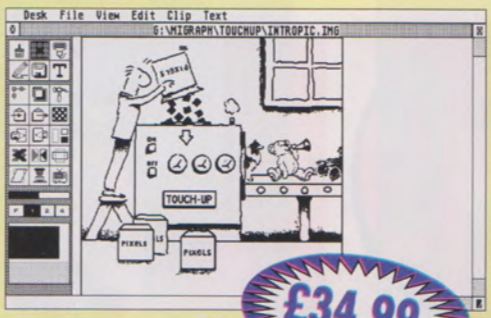

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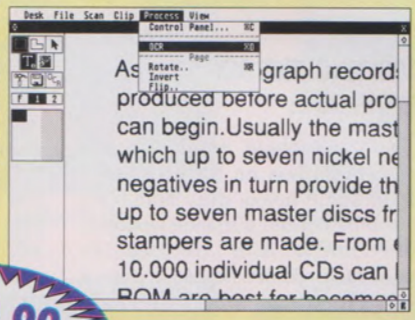

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GAME PLAY

Kill the monster at the end of Funfair World and you're home free.

Find nuts, bolts and oilcans in Tool World, but avoid the wood-worm and killer saws!

ZOOL

A change of heart at Gremlin means that Zool has finally been released for the ST. Richard Barton finds out if it was worth the wait...

Early last year, it was announced that a challenger for *Sonic the Hedgehog* was to appear on the ST and Amiga machines. *Zool: Ninja from the Nth Dimension* was previewed and met with promising comments. Everyone waited to see if the game matched up to the promotion.

For ST owners, this was short-lived. According to Gremlin, the ST's inability to display a sufficient number of colours and scroll at speed, the game would not be released on that format. When *Zool* finally appeared on the Amiga, ST owners could only look on and dream of what might have been.

Earlier this year, it was decided that *Zool* would indeed be released on the ST after all. Many a sceptic said that movements would be slow and jerky, and that the lack of colours would make it look like a poor relation to the Amiga version. Being a colourful game with complex sprites, we waited with baited breath... until now!

VISITING THE SIX WORLDS...

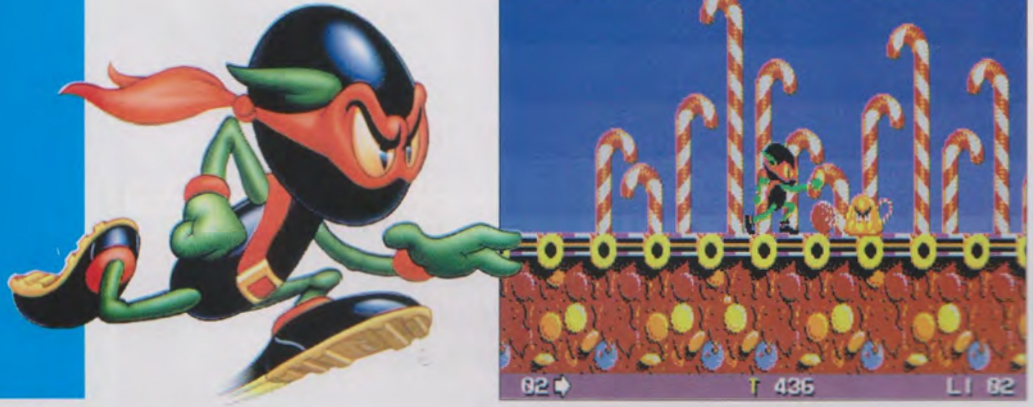
Zool, the Ninja from the Nth Dimension was on his way home after some heavy duty Ninja-ing when he noticed a strange wobbling phenomena and decided to investigate. Before he had a chance to react, his ship went out of control and crash-landed on a strange world made up entirely of sweets.

The ship's computer informed him that he had been brought to this land as a challenge. Before he can return home, he must visit six lands and face six challenges, collecting as many inanimate objects as possible. The reward: the title of "Intergalactic Ninja". You play the part of the intergalactic hero and you have to guide Zool through the strange lands.

The first is the Sweet World. Here, you encounter deadly jellies, flying bees made of sweets, and liquorice allsorts that spit at you! All of this while you collect enough sweets to complete the screen. At the end of the level, a nasty "Hum-bugger" shoots liquorice at you.

Music World faces our hero with walking drums, flying cymbals and violins that fire their bows at you. Finishing this level involves facing Jimmie's Killer Guitar!

Then onto Fruit World with its spitting pomegranate volcanoes and carrots, as well as flying pea pods and peas rolling towards you. Collect the fruit and vegetables before moving on to the alarm clock and giant banana protecting the end of this stage. Three more areas await you before the end of the game is reached. Tool World has a selection



Guide Zool around and collect the sweets – but beware of the killer jellies!

of deadly drills, saws, chain saws and a giant driller killer while Toy World pits Zool against tanks, bouncing balls and paper aeroplanes, not to mention Maxie the Robot! Finally, Fairground World offers mutant toffee apples, popcorn bags, candy floss and hammers. The last end-of-level beastie is beyond description, so I'll let you get there and see him for yourself...

HELPFUL WEAPONS

To help you along your way, there are various weapons that will help you. Collecting a smart bomb destroys any enemy on the screen while a shield makes our hero invulnerable for a time. Enhanced jumping capabilities and a time extender can be found as can the most curious "Twozool" which adds a second "shadow" Zool that follows the first and gives double the fire power. You even get an extra life if you can find a 1up symbol and sometimes when you kill an enemy, a small heart flutters up which can be collected for extra health.

Four pages of comic book action in the manual gives the basic storyline and starts you off on your adventure.

It explains how the character came to be stuck on Sweet World and why he's there, so putting you in the right mood straight away.

Four hidden bonus levels are included. I've managed to find two so far and I won't give up until I find the others!

GAME CONTROLS

Zool is a single player game with a range of game settings on offer. Pressing the space bar when the main *Zool* screen appears takes you to the Options Menu.

The choices of Easy, Normal or Hard reflect the number of inanimate objects that have to be collected before you can move on to the next stage. Music lets you choose the type of background noise you hear while you play the game – choose from Effects, Rock, Green, Rave or Funk. Inertia is a novel option that lets you decide whether Zool slides to a halt or stops immediately. The final option, Conts, is the number of continuations after all of your lives are lost – you can have up to five.

GAMEPLAY

As platform games go, *Zool* is unique; there is nothing even remotely like it. The six worlds could be different games on their own and the underlying sense of humour is there, but not overstated. The complex sprites used for the character are a joy – from the loss of balance on the edge of an object to running, jumping, sliding and swirling, all movements have been well thought out and superbly implemented.

The programming even goes as far as to look for a second disk drive and, if it finds one, loads from it. For all that, there are a few minor niggles that stop this from being the perfect game. Apart from up to five continuation games, *Zool* lacks the facility to load, insert a password and go through a different world; you have to start right back at the beginning each time. Also, why have a codewheel for protection and still not allow the game to be installed on a hard drive?

GUIDE TO THE WORLDS

Sweet World has many hazards, and not just an excess of calories!

Robbery with violins! Watch out for the flying bows and the cymbals.

A healthy approach, suitable for non-squeamish vegans.

Getting to the nuts and bolts of the problem in Tool World.

Have these toys passed the safety test? – they look dangerous to me!

The final world has all the fun of the fair!

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- ✘ STFM version less detailed
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To ensure the highest possible reliability, the drives are tested at every stage of assembly by skilled technicians. We also format, partition and install a bootable driver as part of the test procedure to ensure that the drive is ready to 'Plug in and Go' when you receive it. When you first boot up your hard drive you will find a wealth of Public Domain Utilities which have been selected by our support staff as particularly useful.

All Data Pulse Plus drives include 12 months warranty and free phone advice and support by genuine Data Pulse Plus users.

The entire range of Data Pulse Plus Hard Drives are based on the highest quality mechanisms available. Quantum, Maxtor, Fujitsu, Insite, mechanisms are used, each of which feature a MTBF (Mean time between failures, measured in Power On Hours) in excess of 30,000 hours. All SCSI mechanisms used are 3.5" wide and just 1" high and are chosen for their performance and low power consumption.

The Low power consumption of these mechanisms means that they can operate well within their safe operational temperature ranges without the need for Fan cooling. This coupled with the design of the case results in probably the quietest Hard Drive range available for the ST.

All Hard drives are Autoparking, reducing the risk of head crash or damage during transit. All drives also come configured to be Autobooting.

All Data Pulse Plus drives for the ST now include the ICD LINK host adaptor. This external adaptor plugs into the SCSI port at the back of the drive. This configuration allows the drive to be used with any computer you may upgrade to in the future such as the Falcon 030.

Floptical Drives are capable of storing over 20Mb of un-compressed data on a single 3.5" Floptical disk. The Floptical disks store data magnetically just like a normal floppy disk but the positioning of the read/write heads is far more accurate due to an Optical positioning system. The Floptical Drive positions its heads using ultra fine guide tracks embedded in the Floptical disk surface. Using this positioning system, the Floptical Drive is able to store data on up to 1240 tracks per inch, compared to the 135 tracks per inch of a normal 3.5" floppy disk.

The Floptical Disk Drive combined with specially Up-dated ICD software can access the 21Mb on a Floptical disk and also Read and Write 720K and 144Mb 3.5" Floppy disks.

"Data Pulse is astonishingly fast"–
Andrew Wright, ST User

The Drive has an average access time of 65ms and a data transfer rate of 200K per second (6 times faster than Floppy disk).

The Floptical Drive is available as a stand alone unit, an upgrade for existing Data Pulse and Data Pulse Plus owners or as a combination unit coupled with any capacity of Data Pulse Plus Hard Drive.

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The disk rotates at 3600RPM giving hard drive performance with replaceable media flexibility. As with all Data Pulse Plus drives the mechanism is low power and does not require a fan. Data Pulse Plus Optical is fully compatible with the LINK and the FALCON 030 using ICD PRO utilities (ideal for direct to disk recording). Each Optical disk gives very high £ per Mb value.

All Data Pulse Plus Falcon drives come complete with SCSI 2 cable and cost £50 LESS than the prices quoted below. All Data Pulse Plus hard drive/floptical combinations for the Falcon come complete with SCSI 2 cable and the ICD PRO Utilities and cost £10 LESS than the prices quoted below (Phone for latest prices).

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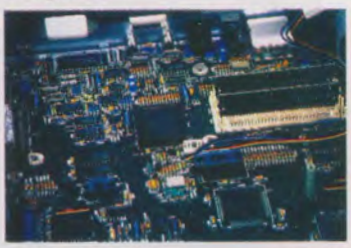

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Datanet Network Hardware
- Cartridge based high speed network solution
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Christmas has come early at Daze Marketing this year and they're sharing the bonanza with you. Dave "Dazed And Confused" Jones investigates...

VFM

Want some cheap ST games for Christmas? Daze Marketing have reduced the price of a range of six budget titles to just £2.99 each! The super-value six are: *Crystals Of Arborea, Metal Mutant, Starblade, Storm Master, Superski 2* and *Boston Bomb Club.* These are only available from Daze directly and include postage and packing. The one or two disk games are boxed and supplied complete with manuals – all were previously sold at £9.99! In Daze's own words, "Hurry, before Santa changes his mind!"

STARBLADE

IN BRIEF: *Starblade* is a Silmarils adventure steeped in originality. Set in the year 3001, there are few humanoid colonies left in a universe controlled by Queen Genolyn, who has ordered a reward of 200,000 credits to whoever destroys our hero, Storm Walker and therefore helps to crush the rebellion.

This is a complex game that is not going to be solved in five minutes. It involves elements of puzzle, trading and action in a blend that makes it highly playable.

ST REVIEW COMMENT: While the gameplay could have been a little faster, it doesn't keep you waiting around for ages for something to happen. Although it's not the best game you'll ever buy, it's by no means the worst.

Configure your ship before you set off to save the universe.

METAL MUTANT

IN BRIEF: An arcade style shoot-'em-up, this time with a twist – you can change into a different form. All of the enemies have to be destroyed on each level, and there's a total of 130 screens to cross.

Each mutant is particularly suited to a specific screen, so selecting the right shape is as important as sharpening up your playing skills. With 40 different species of alien and enemy machine to destroy on your stroll through hostile territory, *Metal Mutant* will keep you amused for some time, especially as there is an additional series of puzzle games to stretch your brain.

ST REVIEW COMMENT: Arcade action to keep you amused during the Queen's speech and maybe into the Bond film as well. As for lasting appeal, it will certainly give you £2.99 worth but not much more than that.

One of three transformations available to help you through the levels.

CRYSTALS OF ARBOREA

IN BRIEF: Morgoth, Lord of Chaos is responsible for drowning all of the earth's lands except for Arborea. Your job is to gather together a band of heroes to search for the four sacred Crystals of Harmony, which have been stolen by Morgoth and his cronies. Little more information is provided as you start your adventure, so it's up to you to discover what needs to be achieved to progress though this adventure, which adds to the enjoyment. This is the first in the *Ishar* series of adventures, the latest being *Ishar 2* which is now available on the Falcon.

ST REVIEW COMMENT: Just a few months ago, *ST Review* gave this game a *Budget Buy Award* when it was selling for £9.99. The same game at under three quid is an absolute steal – if you like adventures, invest in this one.

The first job is to find a band of followers to help you get through the challenge.

STORM MASTER

IN BRIEF: *Storm Master* is a combination of strategy and arcade with the emphasis on the former. To play, you need design skills as well as a good ability to lead an army with a goal of defeating seven enemy cities and looting all their wealth, so returning supremacy to your people. To do this, you have to built vessels to fly and sail between the targets and fight if needed. You have scientists, builders, spies, armies, entertainers and theologists at your disposal, amongst others, and controlling them all requires good skills if you're to be in with a chance.

Although it fits onto a single disk, it's a very involved game that needs plenty of time – you can't switch it on for half an hour between television programs!

ST REVIEW COMMENT: Wow! *Storm Master* for three quid – what a bargain! This is one adventure that you will either love or hate. Steer clear if you're an arcade fan, but if you love strategy get your cheque in the post, now!

★★★★

Build your own ship in this deep and involved adventure game.

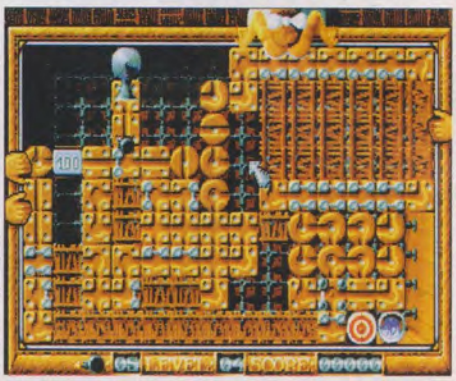
BOSTON BOMB CLUB

IN BRIEF: In the nineteenth century, the forerunner of the computer puzzle game was born. A group of mad scientists formed the *Boston Bomb Club* to amuse themselves. They sat across a table and rolled bombs around, challenging people to direct them from one side of the table to the other. If two bombs met, they exploded and if they fell off the table, points were lost.

Starting at a fairly easy stage, move the sections of table to create a path to the other side where a bucket of water will douse the fuse and make the bomb safe. The other scientists will make life difficult for you by moving the pieces around.

ST REVIEW COMMENT: This is a well thought out puzzle game with good characters and challenging gameplay. A must in any puzzler's collection.

★★★★



If you want to become a fully-fledged member of the Boston Bomb Club, don't let the bombs fall off the table.

SUPERSKI 2

ATARI ST REVIEW BUDGET BUY

IN BRIEF: The only game of this bunch that doesn't come from Silmarils! This one originates from Microids and is a two disk package with six different games in one – Special and Giant Slalom, Bobsleigh, Hot Dogging, Ski Jumping and Downhill Racing. That works out at just 50p per game!

You need to practice to qualify for the Olympic Games, so a training option is offered to hone your skills before taking part in the main contest and each event requires different abilities with a choice of using the joystick or keyboard. Ski jumping is probably the most difficult to master. While it takes time to get used to the range of controls, and you will get confused at first, it's great when you master them. The only drawback with *Superski 2* is the time it takes to load each event, but it doesn't spoil your enjoyment too much.

ST REVIEW COMMENT: At 50p a game, you can't go wrong! With good graphics and gameplay, there's something for everyone here and some of the expressions, especially in the bobsleigh event, will put a smile on your face.

★★★★★

Grab your skis for some fun in the snow.

ST REVIEW'S VERDICT

The quality of these games is in keeping with full priced releases – they just happen to be a little older. While one or two would be rated slightly lower at a cost of £9.99, the marks also reflect the price – after all, how wrong can you go when you're paying just £2.99 per game? Some PD libraries charge as much as this for shareware or public domain software and you're getting a boxed copy with a manual!

This is a great move by Daze who are making good software more accessible. Let's hope it starts a trend as there is room for another level of budget games.

To order, send a cheque or postal order to Daze Marketing Ltd, 2 Canfield Place, London NW6 3BT stating which games you require. Remember that these games are not available in the shops and don't forget to mention *ST Review* when you order.

WIN A COPY OF ISHAR 2

We have 25 copies of *Ishar 2*, the latest game from Daze, to give away in our free competition. All you need to do is help the people at Daze to think of a name for their next release, due out in the new year. The best 25 will win a copy of the game and can choose the ST or Falcon version.

The new release will be a soccer game, so all the usual names have been taken. Think of something original and send it to Soccer Competition, *Atari ST Review*, Europa House, Adlington Park, Macclesfield SK10 4NP. The best 25 will each receive a copy of *Ishar 2* (state ST or Falcon on your entry), and the best of all will be used for the game itself – we'll even try and prise a copy out of their hands for the ultimate winner!

All normal *ST Review* rules apply. Multiple entries will be used to light the bonfire and the editor's decision is final. Closing date for entry is 30th November 1993.

I think the new soccer game should be called:

_____

Name: _____

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If I win, please send me the ST/Falcon version.

Send this completed entry form to Soccer Competition, Atari ST Review, Europa House, Adlington Park, Macclesfield SK10 4NP, to arrive no later than 30th November 1993. Photocopies will be accepted, but only one entry per household.

PD SCENE

If it's PD games you want, you got it – courtesy of Nial Grimes!

KRUEZEN

16/32 PDL • DISK NO: LW.007 • £2.50 • MEMORY: 0.5MB • LICENCEWARE

IN BRIEF: A long, long time ago in a far distant land (isn't it always?) there lived two brothers named Cecil and Arnold. Like all good brothers, they failed to agree on a single thing and after many years of torment it was decided that the only way to settle their differences was through a challenge of intellect. The game? – *Kruezen*, or so the decidedly naff plot would have us believe...

Just slide the rows of tiles and turn the whole grid into the target colour. It's hugely playable at first, but loses its appeal quite quickly.

Kruezen is played on a grid of randomly-coloured squares, the idea being to change all 100 pieces into a single '"target" colour. In principle, this is dead simple – surround a piece with a colour and it will change to match, but throw a lycra-tight time limit and some sensitive controls into the bargain and it's anything but easy!

ST REVIEW COMMENT: "Addiction to *Kruezen* is instant if you're a puzzle game fan, but it does become a bit monotonous after you've mastered the first few levels. All in all it's a very playable concept that could do with just a small tweak in the lastability department."

●●●●

The graphics aren't Kruezen's strongest point (being ported from the SAM Coupé of all things!) but the tracker music used on the title screen is quite nice.

WORMHOLE 1

ATARI ST REVIEW BUDGET BUY

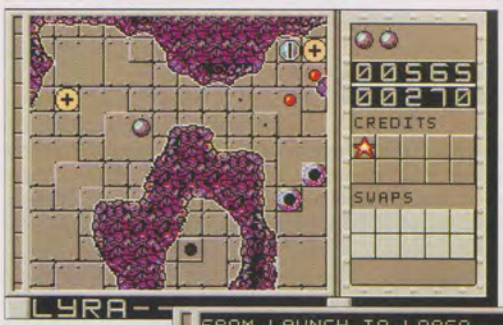
MERLIN PD • DISK NO: MPD.1459 • 99P • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: If you removed the flight sections from *Xenon*, the chances are you'd be left with a game like *Wormhole 1*. In true shoot-'em-up tradition, the plot is wafer thin and the sole aim of the game is to blow up everything that moves and shoot everything that doesn't, just in case.

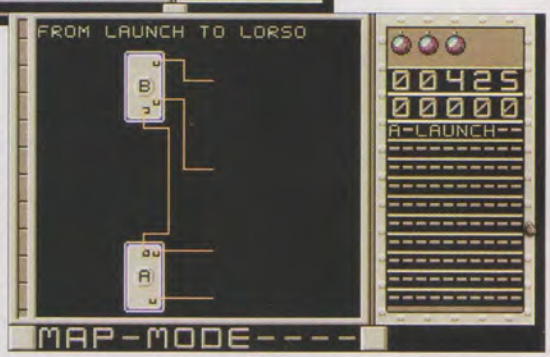
There's a good mixture of aliens to outwit and the collision detection is spot-on. The only slight gripe in the playability department is the way you're returned to the starting point of each level when you die. The game is executed perfectly with ultra-smooth scrolling and pleasant graphics.

ST REVIEW COMMENT: "*Wormhole 1* is one of the better shoot-'em-ups in the public domain. The reasonably challenging gameplay and smooth scrolling put it a cut above most shareware games of this type, although for an out-and-out blast you still can't beat *Cybernetix*."

●●●●●



If you're after a good shareware shoot-'em-up, you can do a lot worse than Wormhole 1 – the scrolling and collision detection is as good as most commercial games!



Being able to explore is a nice twist – it means you can plot your own course through the game (and save the hard bits 'til last!)

TERRAMOON

LAPD • DISK NO: G.229 • £1.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: *Terramoon* is the public domain's homage to that great '60s drama (sitcom?) *Star Trek*. It puts you in control of the Corporation starship "Terra", whose mission is to rid the universe of some polystyrene warships and waste a few woefully unconvincing aliens along the way.

The game is controlled through a huge panel of icons, six of which are devoted to the various departments

Various departments report their problems through the view screen on the left. You have to juggle resources to keep everyone happy while fending off alien attackers.

aboard ship – sick bay, transporter room and so on. The others allow you to navigate your way around the universe and the basic aim of the game is to keep the ship running smoothly while dealing with any hostile aliens that fly your way.

The star map lets you plot a course through space to trouble spots

The graphics and sound effects are of a very high standard (although the latter tend to freeze the mouse pointer while playing, which can be annoying). The shareware version limits you to just two planets and a few enemy ships. If you want to go on any proper missions, you'll need to fork out three quid for the real thing.

ST REVIEW COMMENT: "Terramoon captures the atmosphere of the cult TV series quite well, but it's desperately in need of a bit more action. As it stands, it's probably best left to die-hard Trekkies."

●●●

GAPPER

CALEDONIA PDL • DISK NO: GM.182 • £2.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: Empires rise and fall, machines come and go, but the public domain keeps on churning out the mix-and-match clones. *Gapper* is the latest to arrive and, to its credit, does at least offer some variation on what is a very tired theme.

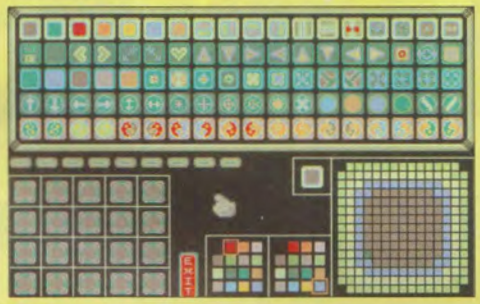
Instead of simply matching shapes, *Gapper* demands that you also keep an eye on the distance between tiles. If the set is close enough together, the tiles will disappear; if not, several more will be added, and the nearer you get to clearing the board the more you are penalised for a "distant" match!

There are plenty of options to adjust the difficulty of the game and you can even design your own tiles if you want. The lack of documentation is a bit of a downer but don't worry – the playability just about makes up for the rather drab graphics.

ST REVIEW COMMENT: "*Gapper* is the sort of game you can pick up and enjoy every now and again. It's not compulsively playable material by any means, but it's obvious that a lot of effort has been put into its design and it makes a change from the standard-issue PD mix-and-match clone."

●●●●

Even though the graphics are a bit drab, Gapper is a nice variation on the mix and match theme.



The tile designer and sheer number of user definable options are evidence of the amount of work that went into programming the game.

COARSE ANGLER

FLOPPYSHOP • DISK NO: GAM.3745C • £2.50 • MEMORY: 1MB • SHAREWARE

IN BRIEF: If you were asked to single out one sport that was totally unsuitable for a computer game, let's face it – it would have to be fishing. Undeterred by its seeming lack of action, VFM Shareware have come up with *Coarse Angler* – fly fishing from your desktop, would you believe?

The game screen is a close-up of the river bank with your player sitting in the centre. An enlarged view of the fishing line sits in the corner of the screen and it's your job to wait until the float bobs below the surface and stab the fire button to bring "jaws" ashore. If the going is a little bit tough, you can always opt to change your bait or float.

The game is littered with nice touches, (such as Neptune's hand which rises from the deep and releases a mouse pointer at the start of the game) and the visuals are superb.

ST REVIEW COMMENT: "*Coarse Angler* is beautifully presented and may well appeal to fishermen, but I'm afraid it bored me to tears. Look on the bright side – at least you won't get your new anorak dirty!"

●●●

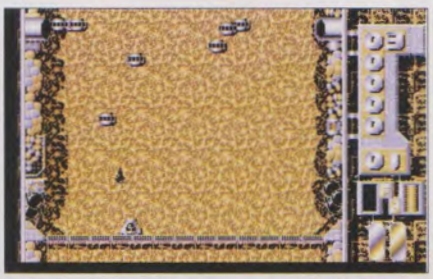
What will it be today? Mild "practice" tedium, or full-blown match-play boredom? Here's looking forward to "Train Spotting Simulator".

You can spend a whole day staring at your ST's screen waiting for a byte (what a carping comment... Ed) Nice graphics, but action is severely lacking.

UPSTART II

LAPD • DISK NO: G.301 • £1.50 • MEMORY: 0.5MB • PUBLIC DOMAIN

IN BRIEF: *Upstart II* is an unashamed shoot-'em-up. Your ship sits on the bottom of the screen and the aim of the game is to shoot fuel pods and collect the resulting drips as they fall from the sky. Once enough fuel has been collected it's on to the next level, where you're greeted by a new set of nasties.



Or should that be Jumpstart? Slick visuals are spoiled by Spectrum-style jerky action and a lack of originality.

The lack of constant scrolling should mean that the game stays up to speed, but unfortunately this isn't the case. Sprites flicker across the screen in a way that hasn't been seen since the early eighties and the gameplay becomes dismally tedious after a while. In a way it's a shame, because the graphics and digitised sound are very good.

ST REVIEW COMMENT: "*Upstart* isn't criminally bad, but there are plenty of better public domain blasters to choose from – *Wormhole 1*, for a start. Graphically it's quite nice, but flickery sprites should have died with the Spectrum!"

●●

The plot is simple and all too familiar – trash the baddies and make a beeline for the goodies. Do your best and you'll be rewarded with another all-too-similar level.

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This month continues the Atari ST Review campaign to get every ST owner to upgrade the memory of their machine to at least 1MB and to have all those useful items – at the right price!

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OF MICE AND MEN...

With the launch of the ST, Atari produced one of the first home computers that was designed to be mouse-controlled. The commands for this were engineered into the operating system and, as you all know, the grey Atari rodent came waltzing out of the enclosed brown card-board box.

With almost all developers incorporating mouse movements and button presses into their software, two problems now exist for all of us ST owners. Firstly, the infamous grey Atari mouse is of poor quality – the switches are old-fashioned with a poor response and the low resolution of movement requires a deal of desk space. Secondly, using any mouse can lead to RSI, or Repetitive Strain Injury, but the less distance your hand has to travel, the less strain there is on your wrist and fingers.

If you use a mouse for sustained periods of time and suffer from pains in your hands, fingers or wrists, you should certainly see a doctor. It is also worth considering the ST Review mouse – its responsive micro-switches and high resolution certainly require far less effort on your part.

And how about our trackball? I've been using one of these for over three years, for music, DTP and graphics. Don't be put off by what appears to be an upside-down mouse – they're wonderful devices and I much prefer them to mice!

So do yourself a big favour; make the positive decision to replace your original ST mouse with the ST Review variety, or join the growing band of ST owners who are converting over to using a trackball...

FREE DELIVERY!

TURN OVER...

...for more readers' offers and details of ordering by fax or post

SEE THE PREVIOUS PAGE FOR OUR SENSATIONAL MEMORY UPGRADE OFFERS!

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The ST may be a great computer but the mouse that comes with it simply is not up to scratch. The *ST Review* mouse is a major enhancement because it uses micro-switches for the buttons, making it much lighter and easier to click. Our mouse also has a much higher resolution – 280 dots per inch which means you need far less desk space and get much finer control.

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Who sets the time each time they switch on their ST? If like many thousands of ST owners you don't, then you are missing out. Every time you save a file it gets stamped with the time and date – invaluable when you are hunting for a file. Get a clock cartridge and the time will be set automatically each time you switch on your ST.

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MIDI SURVIVAL GUIDE

Want to get started in music on the ST? Here's the perfect book for you, written by Vic Lennard, the editor of *ST Review*. It's filled with over 40 informative diagrams of how to set up a MIDI system and written in a friendly, down-to-earth manner.

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FREE DELIVERY!

UVK

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NEW – VERSION 5.9 NOW DETECTS THE BEILSTEIN VIRUS

Everyone knows about viruses, but far too many ST owners think it can't happen to them – it can! Despite the fact that you never get disks from "friends" and only buy commercial software, a virus could still infect you. And when the gremlins get at your disks, life becomes an absolute misery.

Don't let this happen to you. UVK detects and kills more viruses than any other virus killer. We use it at *ST Review* – so should you!

EXISTING USERS CAN UPGRADE – CALL FOR DETAILS

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Do you use your ST for art, graphics, DTP or music? Then you really should consider our state-of-the-art, 162 dpi trackball, as used by the editor of this magazine. Movement from one side of the screen to the other is effortless and cursor motion is rapid and smooth, far more so than with a mouse. The feel is superb thanks to the high quality micro switches under the buttons. There's also a third button that acts as a locking left button – ideal for continuous scrolling, painting or line drawing!

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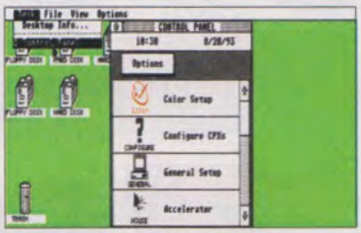
PD ZONE

CHAMELEON

ATARI ST REVIEW BUDGET BUY

16/32 PDL • DISK NO: DMAG.027 • £2.00 • MEMORY: 0.5MB • FREEWARE • FALCON-COMPATIBLE

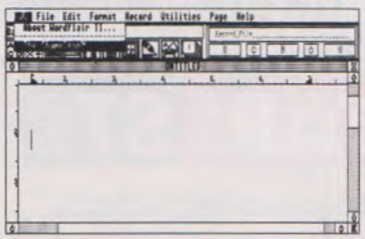
IN BRIEF: There are times when six desk accessories just isn't enough, and that's especially true when you're using a hard disk capable of holding dozens of the little blighters! *Chameleon* is a utility that completely overcomes this rather nasty GEM limitation by allowing you to load and remove desk accessories on-the-fly, without rebooting your machine.



Accessories prefixed with an arrow have been loaded through the Chameleon.

To get up and running you simply copy the *Chameleon* accessory to your root directory and reboot. Clicking on its slot will produce a file selector, from which point any desk accessory can be loaded. To remove an unwanted accessory, you simply hold down the <Shift> and <Alternate> keys while clicking. If one *Chameleon* isn't enough, you can copy and rename the program slightly, giving all six GEM slots the same degree of flexibility! It's extremely reliable, works with almost any desk accessory and as a bonus can save you a bundle of memory.

ST REVIEW COMMENT: "*Chameleon* is one of those utilities that you just can't afford to be without. It works with 99% of accessories – even tricky ones like *Harlekin* – and makes rebooting your machine a last resort, not a foregone conclusion!"

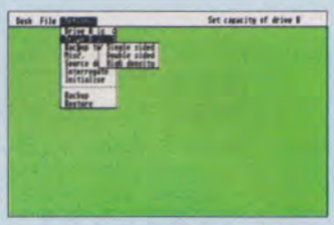


The Chameleon can be used from within almost any GEM application, allowing you to load and remove accessories as and when you need to.

HARD-UP

CALEDONIA PDL • DISK NO: AU.67 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: Hard disks are pretty reliable beasts these days, but even so the odds are that gremlins will get into your system and wreak havoc with your data at some point in the future. The only way to avoid data loss should this scenario arise is to keep regular back-ups, and *Hard-Up* is a program that will help you do just that.



Backing up your hard disk avoids the unthinkable...

A simple GEM menu bar is all that's used to control the program and from here you can select which partition you want to back-up and which disk drive you will be using. Both double density and high density formats are supported and the simple interface means it's the sort of program anyone can use. No compression is used on the back-ups so it goes without saying that shares in a disk manufacturer are a distinct advantage!

ST REVIEW COMMENT: "*Hard-Up* is easy to use, doesn't bombard you with needless options and gets the job done. The registration is a bit steep – it's not *Diamond Back* after all – but that's the price you pay for try-before-you-buy I suppose."

AUTOSORT

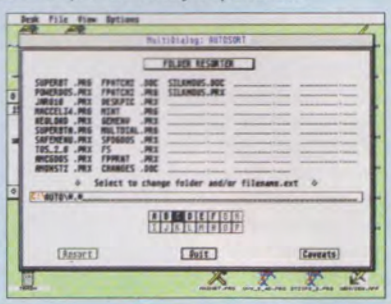
ATARI ST REVIEW BUDGET BUY

FLOPPYSHOP • DISK NO: UTL.331 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: As your collection of helpful utilities and patches grows, managing your hard disk's AUTO folder can become quite a task. Reordering to accommodate a new time-saving gizmo is the biggest headache of all and one which can be completely automated thanks to *Autosort*.

Kick the program into action and you're faced with a large GEM dialogue box showing all of the programs in your AUTO folder. Rearranging the running order is as simple as dragging each name to its new position and clicking "Resort". The process takes a few seconds and you're given a constant report on progress, each file being greyed out as it is moved. It can be used reliably on floppy and hard disks, and copes admirably with the Falcon's internal IDE drive.

ST REVIEW COMMENT: "Depending on the population of your AUTO folder, *Autosort* can save you hours of fiddly copying. It makes installing *Superboot* and accommodating the whims of GDOS totally hassle free and after several months' of intensive use has proved totally dependable."



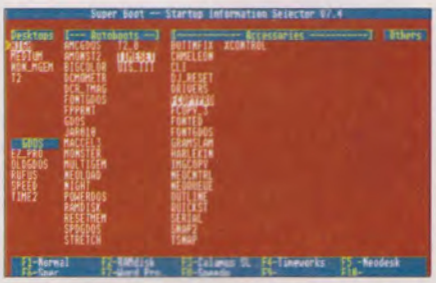
Autosort's well thought out GEM interface is simple to use – just drag your files to the required position and click "Resort"!

SUPERBOOT 7.4

ATARI ST REVIEW BUDGET BUY

GOODMAN INTERNATIONAL • DISK NO: GD.1787 • £2.75 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

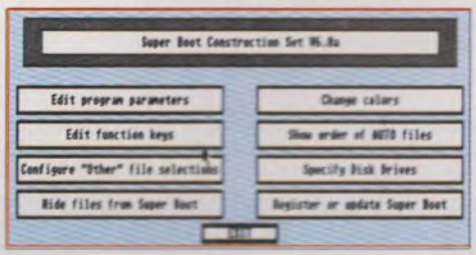
IN BRIEF: *Superboot* is a hard disk management system *par excellence*. It sits in the AUTO folder and runs before any other program, presenting you with a cursor-controlled menu. From here you can decide which AUTO programs you would like to load, which desk accessories you want installed and which DESKTOP/NEWDESK.INF file should be used. What's more, whole combinations of programs can be assigned to a single function key.



Take control of your hard disk – just press the space bar over the programs you want loaded and leave the rest to Superboot.

Getting up and running can be a bit of a problem thanks to the huge amount of documentation supplied, but once it's actually in place on your disk, a nice configuration utility guides you safely through the tricky set-up process.

ST REVIEW COMMENT: "*Superboot* is unbeatable in terms of hard disk management. It's easy to get put off by the copious amount of documentation, but persevere and I guarantee after a month you'll wonder how you ever lived without it!"



Once installed, the Construction Set takes over and guides you through Superboot's many abilities. Hard disk nirvana awaits!

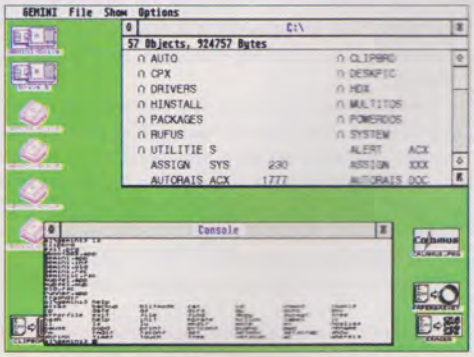
GEMINI

ATARI ST REVIEW BUDGET BUY

FLOPPYSHOP • DISK NO: UTL.400 & UTL.401 • £5.00 ALL IN • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: Atari's pre-TOS 2 desktop is the bane of any hard disk user's life. Its inability to fit icons to windows and general tackiness are a constant source of frustration, but fortunately there is a software solution in the form of *Gemini*.

Perhaps the biggest advantage of using *Gemini* is the ability to drag icons out of windows and dump them on the desktop for easy access. Each file can have a unique icon attached to it and plenty of ready made examples are included to suit popular applications, such as *Calamus*. There's even a built-in UN*X-style command line interface, which can be used to automate all sort of laborious copy and delete operations.



Gemini's own command line interpreter, Mupfel, makes short work of file search operations and full on-line help is available if you get stuck.

The only real problem likely to crop up is lack of memory. Even with one megabyte, your ST is likely to feel the squeeze when running memory hungry applications.

ST REVIEW COMMENT: "*Gemini* is laden with features and can even outshine TOS 2 and *Neodesk* in many ways! Its use of GEM is second to none and the command line interface comes in handy when using PD compilers or raytracers."

★★★★★

VDOS PROQUEUE

MERLIN PDL • DISK NO: MPD.1434 • 99P • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: *VDOS Proqueue* is a program management utility designed to take the place of the regular GEM desktop. A system of menus replaces any windows or icons and the idea is to program these "slots" with your favourite applications, which can then be executed with a single mouse click. Naturally, menu-based file management abilities are also included but these are far trickier to use than the usual GEM desktop.

The documentation is limited to describing the installation, but once up and running, it's perfectly straightforward to use. Setting up the slots is just a case of holding the mouse button down when you click and there's limited on-line help available if you need it. The program is quite stable in operation, but can be persuaded to crash if you push it too hard.

ST REVIEW COMMENT: "If file management only forms a tiny portion of your computer use, you may want to give *VDOS Proqueue* a whirl. The inverted menu bar running along the bottom of the screen is quite a nice touch, but give me the desktop any day, warts and all!"

★★★

VDOS Proqueue allows you to install all of your favourite applications into a trendy upside down menu and execute them with a single mouse click.

TOP TEN HD UTILITIES

1 SUPERBOOT 7.4 • GOODMAN INTERNATIONAL • DISK NO: GD.1787 • £2.75 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

The definitive start-up selection utility which no self-respecting hard disk owner should be without. It allows you to choose exactly which desk accessories, AUTO programs and INF files you would like loaded at boot-up time and whole set-ups can be assigned to a single function key. The best.

2 AUTOSORT • FLOPPYSHOP • DISK NO: UTL.331 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

Save yourself hours of laborious copying with this handy little disk utility from the good ol' US of A. The simple drag and drop interface makes rearranging your AUTO folder a few seconds' work and the registration fee is only $10.

3 COLD HARD CACHE • THE SHAREWARE COMPANY • DISK NO: SAU.042 • £1.75 • MEMORY: 0.5MB • SHAREWARE

Cold Hard Cache stores recently read disk sectors in memory, improving access times if your ST needs to use them again quickly. It's fully configurable to make the most of the memory available and a desk accessory is supplied to keep you informed on the "hit" rate.

4 CHAMELEON • 16/32 PDL • DISK NO: DMAG.027 • £2.00 • MEMORY: 0.5MB • FREEWARE • FALCON-COMPATIBLE

Chameleon busts the annoying GEM six accessory limitation by enabling you to load and unload DAs on-the-fly. It's laughably easy to use, works with almost every accessory on the market and even manages to remain Falcon-friendly. Don't try using it with MultiTOS though – kaboom!

5 HD-FREE • NEW AGE PDL • DISK NO: FALC.2 • £2.00 • MEMORY: 0.5MB • SHAREWARE • HIGH DENSITY DISK DRIVE REQUIRED • FALCON-COMPATIBLE

HD-Free is a CPX module designed to be used with Atari's *X-Control*. Its sole purpose in life is to display how much disk and memory space you have remaining, which it does through a gorgeous looking little graph. Both figures for individual drives and overall space remaining are given.

6 GEMINI • FLOPPYSHOP • DISK NO: UTL.400 & UTL.401 • £5.00 ALL IN • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

A very professional GEM desktop replacement which features GDOS font support, flying dialogues and its very own built-in command line interface. It's a good match for Atari's own TOS 2 and *Neodesk*, although unlike the latter you don't get an icon editor.

7 ST-ZIP • GOODMAN INTERNATIONAL • DISK NO: GD.1800 • £2.75 • MEMORY: 0.5MB • POSTCARDWARE (!) • FALCON-COMPATIBLE

ST-Zip differs from most archivers in its ultra user-friendly interface. Just choose the files you want to squeeze, click the button and it's all over. Both the older "shrink" and new improved "deflate" algorithms are supported and the resulting files are fully compatible with *PKZip* on the PC.

8 DC STUFFER • FLOPPYSHOP • DISK NO: UTL.88 • £2.50 • MEMORY: 1MB RECOMMENDED • SHAREWARE

DC Stuffer is another attempt to break GEM's six accessory limitation. It lets you load as many accessories as memory can hold at boot-up time, all of which are accessible from *Stuffer*'s own menu. 2MB or more is recommended if you intend to use it seriously.

9 TURTLE • THE SHAREWARE COMPANY • DISK NO: SAU.021 • £1.75 • MEMORY: 0.5MB • SHAREWARE

A hard disk back-up utility which uses a RAM disk to increase speed. It's not particularly quick by today's standards, but has stood the test of time and is widely regarded as the best PD backup utility.

10 HARD-UP • CALEDONIA PDL • DISK NO: AU.67 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

A simple but effective hard disk back-up utility which includes support for high density drives. Feature laden it's not, but it remains a good choice for beginners thanks to a straightforward interface. Falcon users, please note – make sure you run *Hard-Up* from an ST screen resolution.

PD ZONE

FALCONSCREEN 2

ATARI ST REVIEW BUDGET BUY

LOCAL BBS • MEMORY: 1MB • PUBLIC DOMAIN • FALCON ONLY • SUPER VGA ONLY

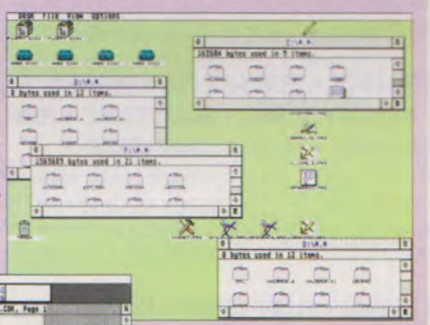
IN BRIEF: The standard VGA resolution of 640 by 480 pixels may sound impressive, but when it comes to DTP it's not nearly enough. *FalconScreen 2* is a utility that cons the Falcon's video hardware into displaying higher resolutions than would normally be possible.

Installation is simple – just run the program from your AUTO folder, press "S" to enter the set-up mode and choose the resolution you want to use. Most good quality SVGA monitors can handle the extra bandwidth, although some resolutions are better than others – 800 by 608 seems to work fairly well on most monitors. The maximum resolution on offer is 928 by 696 in 16 colours.

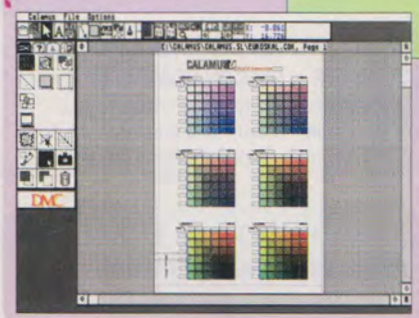
Unfortunately, the documentation prohibits the distribution of *FalconScreen* through PD libraries, but it is available for download from most good bulletin boards.

ST REVIEW COMMENT: "If you're a DTP freak, *FalconScreen 2* is the most useful utility you will ever own. It's proved totally reliable in over a month's intensive use and you'll be shocked at how much difference a third extra screen space can make!"

★★★★★



The extra space comes in handy for opening more windows and seeing more files on screen.



FalconScreen 2 is a desktop publisher's dream – here we have Calamus SL running at 800 by 608 pixels in 16 colour on a standard SVGA monitor!

NETHACK

ATARI ST REVIEW BUDGET BUY

FLOPPYSHOP • DISK NO: GAM.3777 & GAM.3778 • £5.00 ALL IN • MEMORY: 2MB • SHAREWARE • FALCON/TT RECOMMENDED

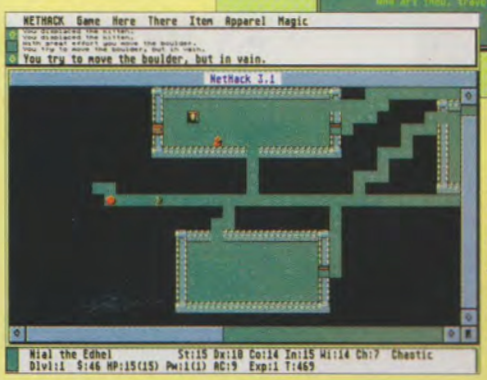
IN BRIEF: *Nethack* has its origins way back in the early days of computing. It started life as a text based role playing adventure – each object being represented by a different character – and remained that way until this latest release.

The aim of the game is to rescue the Amulet of Yendor from the Maze of Menace and receive the ultimate gift of immortality. You can play one of a number of characters, each possessing particular strengths and weaknesses – cavemen are strong but stupid while Barbarians are excellent in battle, for example. The game is played from an overhead perspective through a fully GEM'ed interface and all graphics are in 16 colours. It's best run in a 640 by 480 screen mode on the Falcon or TT, although you can play it on an ST at a push by using a virtual screen driver (such as *MonSTEr*).

ST REVIEW COMMENT: "It's hard to describe the difference between earlier versions of *Nethack* and this latest graphical release. The game is as involved as ever and changes every time you play, which means it will keep you going for ages!"

★★★★★

Although graphics have been added, Nethack 3 retains the atmosphere of the original. It even sports the same set of keystrokes!



Nethack arrives in the 90's at last! 16 colour graphics are used throughout and it's wonderfully fast on a Falcon or TT.

DESKCOPY

NEW AGE PDL • DISK NO: FALC.2 • £2.00 • MEMORY: 1MB • SHAREWARE • FALCON ONLY

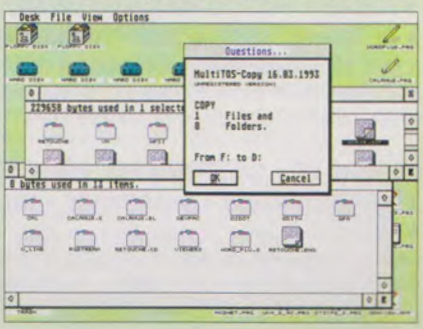
IN BRIEF: If you've ever used MultiTOS, you'll know exactly how annoying it is to be locked out of the system while a lengthy file copying operation takes place.

DeskCopy solves this problem by sitting in the background waiting to pounce on any delete, copy or move operations you make. In common with Atari's own dialogue it gives you a constant report on progress, but does so from a GEM window which can be topped, buried or moved like any other. This means you can continue working while it carries on transparently with the job in hand.

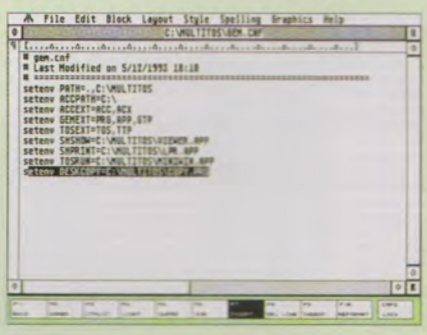
Installation involves adding a DESKCOPY line to your GEM.CNF file, after which you just reboot the machine and use the desktop as usual. Registration for $20 buys you a faster version that requires no confirmation on copy operations.

ST REVIEW COMMENT: "*DeskCopy* is essential if you use MultiTOS. It's easy to install, equally easy to use and takes up very little memory. The registration is a bit steep, but it will save you hours over a year!"

★★★★



Unlike the standard GEM dialogue box, DeskCopy's window can be backed, allowing you to continue working in the foreground.



A single line added to your GEM.CNF file is all that's required to kick DeskCopy into action.

New Age PDL

£1.50 EACH
Unless otherwise stated

All disks require a COLOUR system unless: 'H' – High Resolution, 'A' – Any resolution

FALCON SOFTWARE - All on HD Disks - £1.75 Each

FALC 1 - POV Raytracer, fully zipped, expands to 3 Meg.
FALC 2 - 20+ utils inc. Bootcont, Desk Copy, Gembench, DC Sea 2.0, ST Emulator
FALC 3 - Birdy 2 Animation (4 meg+), Cyrel Palette Master demo.
FALC 4 - JPEG True Colour Pictures, Jpeg Picture viewer.
FALC 5 - C56k Compiler including DSP routines. Chipmunk Basic 1.0
FALC 6 - Cebit 93, 3D TT, Paragon, Mad, Dragon, Qad3d - all demos.
FALC 7 - Digitape demo, Fortune 1.0, Desktrak, Win-Rec 1.3, Audio Fun Machine (music).
FALC 8 - Fractal DSP, Flight, Jpeg view, Fpaint, Chagall demo, Bit Camera (art).
FALC 9 - Omega 30, Gourad, Speeder, Plasma 50, Intel, Starfield, Terminal (demos).
FALC 10 - DSP56001 Assembler, DSP Bits, ASM-CPX, DSP Tools.
FALC 11 - Hands demo - animation and music by Brainstorm. Morphing demo - 2 Meg+
FALC 12 - POV Raytraced demo - 24 bit Truecolour pics. More on Falc 13/14 (all 3 for £5).
FALC 15 - About 45 Mint and MultiTos Utilities. Colour Icons.
FALC 16 - Phaze 4 - product demos from Lexicor software. Zipped - expands to 2.5 meg.
FALC 17 - Hardchor (D2D), Audio 12, Playman, Pry Play, Cities (music)
FALC 18 - Japan Demo disk 1, XGA pictures. Disk 2 on FALC 19 (zipped).
FALC 20 - Over 1 Megabyte of DSP routines.
FALC 21 - Demo of the game Humans, disk 2 on FALC 22 (zipped, both required).
FALC 23 - TGA pictures - more high quality pictures and even more on FALC 24.
FALC 25 - Jpeg Pictures - full disk but no room for viewer program. More on 26
FALC 27 - Griffrob Demo - 2 demos with 50khz sound, True colour Gourad shading etc.
FALC 28 - Fupdate 1, Magi, Mkdisk 4.3, New ctrl, Shdriver, HDX, Gemar 1.23, Mini PS'0.55
FALC 29 - Startrek Cities - cities to play with Fortune on Falc 7
FALC 31 - Temptation! The first disk of an EXLUSIVE pack of JPEG pictures of gorgeous girls. Excellent quality pictures and the three disk pack contains no less than ninety pictures! Yes 90! Disks 2 & 3 on FALC 32 & 33.
FALC 35 - Nethack 3.1.1 - The great Dungeons and Dragons game with REAL graphics!
FALC 36 - Gzip 1.07, LHA 2.22, ZOO 2.1, ZIP 2.3, Spool 200, Toswin 1.4, RDE 3.1.
FALC 37 - Gemview 2.30, Binaris GIF viewer 2.0, Fractal Playtime 1.0, CS Demo (art).
FALC 38 - FLI Animations: Aslamp, Balloon, Bart, Basstalk, Bounce 2, Glass, Hands.
FALC 39 - FLI Animations: A3DS, Apple, Bball, Bugs, Chubb 03, Cone, Tigercat
FALC 69 - 49 .WAV samples for use with System Audio Manager.

All Falcon disks are High Density and cost £1.75 each, however for every four purchased you may choose ONE FREE! This offer ONLY applies to Falcon disks though you may choose an ST disk as your free one.

ART AND GRAPHICS

ART 1 - A disk full of 23 miscellaneous picture utilities including Viewgif 1.2.
ART 35-37 - In Bed With Madonna - over 100 pics - STE enhanced. £4.00.
ART 49 - HPM Draw and Butterfly Artist - two High Res Drawing Packages. 'H'
ART 50 - Flexidump demo, Gem Show, Mgif, Plot 1.6, Top Chart, Gif Show - 'H'
ART 51 - Crackart 1.25 - The best ST art package available. 1 Meg+
ART 66 - Origami Tutor, Reveur 2 - weird French slideshow.
ART 68/69 - On-line Art Tutor - step by step tutorials on 2 disks. £3.00
ART 109 - Total Recall show - full colour Spectrum 512 pics. Exclusive to us!
ART 115 - Pixel Twins Horror Show - lots of gruesome pictures!
ART 126/127 - Terminator 2 Spectrum 512 pics. Exclusive to New Age! £3.00.
ART 128 - Gemview 2.24 - The acclaimed viewer program for many formats. 'A'
ART 137 - Basic Instinct - Near Photographic Quality pictures! State STE or STFM
ART 139 - Photochome version 3.0 - converts GIF, TGA, IFF into one of six modes.
ART 140-143 - The Chippendale Auditions - four disks of pictures of gorgeous blokes in Near Photographic Quality! STE Only - EXCLUSIVE to New Age! £5.00
ART 144-149 - Seduce! Volume 2 - the sequel to the highly successful Seduce! Six disks of lovely ladies, two versions (please state which) - one for STFM and the other for STE's takes advantage of a 32,768 colour palette! EXCLUSIVE to New Age! Only £7.50. 60Hz (may not run on TV's). Many more packs available.
ART 156 - Madonna's Book - twenty pictures form her book. STE only.
ART 157 - PAD 2.4 - English version of this Superb drawing program. 'H' 1 Meg+.
ART 158/159 - Kozmic 4 - new version of this psychedelik pattern creator. 1 Meg+. £3.00.

DEMONSTRATIONS

DEMO 289 - Wheel of Fortune Club Mix by Ace of Base (brilll). 1 Meg+.
DEMO 288 - Trance Action 5 - I Feel It, Synthe Mix by Moby. 1 Meg+.
DEMO 287 - Trance Action 4 - U Got 2 Know by Cappella. 1 Meg+.
DEMO 285 - Trance Action 2 - 10x10, Trance Mix by 808 State. 1Meg+.
DEMO 283 - Mr Vain by Culture Beat - the smash hit Euro single. 1Meg+.
DEMO 281/282 - The PETE demo - great megademo by many good groups. £3.00.
DEMO 277/278 - Believe The Music by Redlite. STE and 1Meg only. £3.00.
DEMO 276 - E605 - A great STE only demo by Light.
DEMO 274/275 - Dreamzone - The latest megademo from the Wild Boys. £3.00.
DEMO 273 - Right Here by Sisters With Voices. 1Meg+.
DEMO 270-272 - The Omikron Demo - takes up three disks! 1Meg+. £4.00.
DEMO 269 - Oh Carolina! - The reggae hit form Shaggy. 1Meg+.
DEMO 268 - Break From The Old Routine by Oui 3. 1Meg+.
DEMO 267 - Faces - 2 Unlimited's latest single. 1Meg+.
DEMO 265/266 - Mr Vain - the 2 Meg+ version of demo 283. £3.00.
DEMO 260 - Waiting for the Falcon - a new demo by Extract.
DEMO 259 - Dream Lover - the new single from Mariah Carey. 1Meg+.
DEMO 258 - Brutal Techno - Fantastic STE and 1Meg only demo.
DEMO 257 - Giger Dance - 'alternate' art show, over 50 pictures.
DEMO 254 - Bedlam Demo - turn the lights down and the music up and trip!
DEMO 251 - Great Techno Compilation - 5 brilliant pieces of techno music.
DEMO 250 - Raz Rez music disk -over 200 chip and digidrum tunes with 2 players.
DEMO 248 - Fire demo - sampled music from The Prodigy. STE and 1 Meg+ only.
DEMO 247 - It's My Life - the great Dr Alban song by the ST Freaks. 1Meg+.
DEMO 243 - Bad Taste Demo - auto running STE only demo.
DEMO 242 - Music Dream II-9 superb 50KHz tunes by Electronic Images. STE only.
DEMO 239/240 - The Cunning Demos written in STOS basic. 2 Disks £3.00.
DEMO 238 - Never and Forever demo by Stew written in GFA Basic.
DEMO 237 - Upscale demo, about 9 screens, quite strange.
DEMO 235/236 - World of Wonders by Dune and Fantasy. 2 disks. £3.00.
DEMO 233/234 - Anomaly Megademo by MJJ prod. 2 disks. £3.00.
DEMO 231 - Dreams - the number 1 single form Gabrielle. 1Meg+.
DEMO 230 - What Is Love - Haddaway's hit single. 1Meg+
DEMO 229 - All That She Wants by Ace of Base. 1 Meg+
DEMO 225 - No Limit by 2 Unlimited. 1 Meg+
DEMO 222 - Tribal Dance - the new single from 2 Unlimited. 1Meg+
DEMO 220 - Phorever People by The Shamen. 1Meg+
DEMO 219 - Ebeneezer Goode by The Shamen. 1 Meg+
DEMO 218 - Love, Sex, Intelligence by The Shamen. 1 Meg+
DEMO 216/217 - Bass Drum by The Shamen. 1 Meg+ £3.00
DEMO 200 - Grotesque Demo - Great rave music demo + graphic effects.
DEMO 199 - Technotronic Megamix
DEMO 168 - Swiss Megademo - megademo with outstanding intro and Main Menu
DEMO 165 - Cozmic Jam - ten part STE demo, very nice.

GAMES

GAME 16 - Ship Combat, MAD, England Team Manager, Motorcycle simulator, Pulse Rider, Empire Builder, Key to Atlantis.
GAME 78 - Popeyed - a pop music quiz game with an adult theme.
GAME 83 - Grandad and the Quest for the Holey Vest - superb animated adventure. 1 Meg+
GAME 99 - Penguin - acclaimed Lemmings type puzzler. Tauris -strategy 1 Meg+
GAME 104 - Blat! - A very nice version of Tetris - STE ONLY!
GAME 107 - Tower Power - strategy game based around chess. Data disk - GAME 108.
GAME 117 - Fast Freddy - lovely platform game with superb graphics. Very addictive
GAME 126 - Hunt For Grey November - Destroy the submarines before they get you!
GAME 128 - Dungeon Lord - A rather good clone of the good old Dungeon Master. 1 Meg+
GAME 129 - Arthur of the Britons - You take control of Arthur and his armies. 1 Meg+
GAME 130 - Conquest - an amazing Populous type God game - really brilliant! 1 Meg+
GAME 131 - The Glass Buttock of Thorg - Based on 'Lords of Midnight' from the author of Grandad (Game 83). Given 'Essential Buy Award" in Atarri ST Review! 1 Meg+
GAME 132 - Psycho Pig 2. Great platform game spanning 4 scenarios and 2 disks. £3.00
GAME 134 - Kubes - nice new puzzler. Warzone demo.
C.I. 01 - Genocide - awarded 'ST Review Essential Buy' Strategy God type game with hints of Sim City and Populous. EXCLUSIVE to New Age! £3.95.
C.I. 03 - Guerroyer - Great strategy game based on 'Mega-lo-Mania'. Best Licenceware game of the year without a doubt! - ST Review. EXCLUSIVE! £2.95
OCL 1 - Dead or Alive - extremely witty adventure from the author of Genocide. £2.95
OCL 2 - Murder on the Orion Express - spoof murder mystery with great graphics. £2.95

SHOCKWAVE!

This latest Creative Influence release is EXCLUSIVE to New Age PDL! It's an action packed space shoot 'em up not unlike Asteroids but a whole lot better. Blast your way through level after level of rocks, missiles and much more. Collect minerals and use them to buy power-ups and extra lives in the space shop. Great graphics and amazingly addictive gameplay make this a must for shoot 'em up fans! Only £2.95 (a portion goes to the author).

POWERFIST LICENCEWARE - £2.95 per disk

POWER 1 - Snott 93 - previously commercial, very playable shoot em up type game.
POWER 2 - Ghalfa One - four levels of alien blasting chaos.
POWER 3 - Seven Galaxies - Extremely slick shoot em up, the best game yet.
POWER 4 - Hundhy 1066 - Go back in time with some artillery for this classic!
POWER 5 - Deluxe Nostram, double size tower, new puzzles, monsters, graphics. 1Meg+.
POWER 6 - Deluxe Nostram, 1/2Meg version.
POWER 11 - Snott 93 1/2Meg version and PDOS 1.5.
POWER 13 - Location Universe 3D - Escape four taxing levels of this brilliant 3D game.

FREE CATALOGUE! WITH FREE SOFTWARE! FOR NEW CUSTOMERS UPON REQUEST

BUDGIE LICENCEWARE - £2.75 per disk

BU 70 - Pacman, yes another version of this classic but a very good one.
BU 71 - Dark Wars, Dungeon Master gets the cloning treatment in this one.
BU 76 - Clunk - Puzznic revisited! 50 levels of mayhem, very good.
BU 78 - Clacker - nice clone of the game Klax plus Glob, a nice flip-screen romp.
BU 83 - Cyberstorm - the best Defender clone available, really fast!
BU 89 - Horse Racing Simulation for 1 to 5 players. Buy/Sell and bet on horses.
BU 90 - Match-It - a superb Shanghi clone, wonderfully addictive.
BU 100 - Clod Hopper - lovely version of Manic Miner from the 8 bit computers
BU 104 - Jetpac - another faithful clone of a classic game from the old Speccy days.
BU 111 - International Cricket - very good Cricket simulation.
BU 113 - Football Tactician - Formerly a £20 release! Excellent!
BU 114 - Spitting Fish - childrens educational game.
BU 119 - Football Tactician - the Premier League 92/93 season.

UTILITIES AND APPLICATIONS

UTIL 3 - Almanac, Class 3.0, Tree Saver, Make money with your micro, Biomorph 'A'
UTIL 4 - DC Utilities, Mike Horwell Utilities, Norad - astronomy program, Pools 2.5 'A'
UTIL 13 - German to English Translator, DC Utilities, D Backup, MINT Operating System 'A'
UTIL 14 - Printer drivers in HEX format includes Bubblejet BJ10. + tools. 'A'
UTIL 15 - Misc utility disk including copiers, virus killers, diary, directory lister etc 'A'
UTIL 16 - Chameleon (allows 32 Acc's), Sticker 3.0 ('H'), Benchmark, Hard Up 'A'
UTIL 19 - Your Second Manual, Jokes, Znet Magazines, GDOS information 'A'
UTIL 21 - Sagrotan 4.14 + 4.17 - the very best virus killer available in the PD 'A'
UTIL 31 - 70,000 word dictionary as an ASCII file, requires 1 Meg memory. 'A'
UTIL 32 - HP Chrome (prints pictures on Deskjet Colour), Elementary German 'A'
UTIL 33 - TLC Address Book, Mortgage, Bigbux, Gemini Desktop, Copy Fix. 'A'
UTIL 34 - Cheaters Digest 1.3s - cheats to over 100 games and much more. 'A'
UTIL 38 - Printer Utilities - tons of drivers, text printer, poster maker, print spooler 'A'
UTIL 40 - Various packers inc Atomik 3.5, Automation 5.0.1, Ice 2.4, Pompey 1.9
UTIL 41 - X-Words, Crossword Editor 2, Eplan ('H'), Schalt PLan ('H'), Cheats. 'A'
UTIL 42 - Intro Maker - combine graphics, sprites, scroll text and music together.
UTIL 45 - Kaos Desk 2.01, Teradesk 1.06 - both very good replacement desktops 'A'
UTIL 50 - Rip It Up - tests on road signs and symbols. Poolwise 3.5.
BUSI 2 - Sheet 2.0, flexible spreadsheet, D Base One - very friendly database 'A'
BUSI 4 - Opus 2.2 - Very good spreadsheet. Requires 1 Meg of memory. 'A'
BUSI 6 - Double Sentry Accounts, everything except VAT, Address Book 'A'
WORD 4 - First Word + tools, Printer Drivers, Spell Checker, Grammar Checker demo 'A'
WORD 5 - Calamus 1.09 Demo - allows printing but no saving. 'H'
PRO 1 - Electronic Bank Statement - the sequel to Home Accounts. £2.95
PRO 8 - Cassette Printer 1.2 - Produces the labels for an Epson compatibles. £2.95
PRO 12 - Budgie's Astrology - comes complete with tutorials for the beginner. 'A' £2.95
PRO 20 - Video Master video titling package Extra fonts on PRO 23 £2.95 each

EDUCATION

EDUC 1 - Kid Music, Kid Notes, Kid Piano, Kid Puzzle, Kid Graph, Rebus Writer
EDUC 2 - Kid Grid 2, Kid Mixup, Kid Publisher, Kid Sketch, Kid Story, Kid ABC
EDUC 5 - The Wolf And The Seven Kids, Magic Speller, Computer School 1
EDUC 6 - Maths Made Easy, Kid Shapes, Kid Shapes Plus, Race Cards
EDUC 7 - Michaels Big Adventure - Colourful graphics, easy to play. Age 8+
EDUC 8 - The Search - historical adventure, Spelling Made Easy, Dot to Dot
EDUC 9 - Bodyshop, Computer School 2 & 3, Butterfly in the Park
EDUC 13-15 - Death of a President - investigation into the death of John F. Kennedy. £4.00
EDUC 16 - Franglais 1 & 2 - French Tutors, Me First 2.0, Numbers, Slimming
EDUC 17 - STOS Typing Tutor, Fun Face, Name Dropper, Pig Latin 'A'
EDUC 19 - Computer School 4-tests reflexes, memory, logic, coordination, +tons more
EDUC 20 - Easter Egg Hunt - pleasant adventure for 7-12 no violence or monsters!
EDUC 21 - GCSE Higher Maths Grade Tutor, Franglais 3 French Tutor
EDUC 22 - GCSE Chemistry Tutor - all you need for grade 'C' or above
EDUC 23-26 - CIA Word Factbook 1991 - Four disks crammed with information about the world, covers 247 nations plus weights and measures, Chemistry Reference Book. £5.00
BUGAM 98 - States & Counties -covers United Kingdom, Ireland, USA + Africa. £2.75
BUGAM 103 - Aptitudes - Seven modules tests your personality and gives report. £2.75
BUGAM 109 - Exchange Rates - well presented and easy to use. £2.75
BUPRO 18 - Fun Time 1&2 - For ages 3-6 friendly games testing many subjects. £2.95
BUPRO 26 - Early Learning Maths - Superb ex-commercial maths program. £2.95
BUPRO 27 - Early Learning Maths 2 - Even more of the above. 8 difficulty levels. £2.95
SHOE 1 - Robot Attack - Tests children on their times tables. £2.95
SHOE 3 - Picture Mix - Age 6+ the aim is to reassemble a mixed up picture. £2.95
SHOE 4 - Robot Words - A friendly hangman type game for kids. £2.95
SHOE 5 - Alphabet Mix - like Shoe 3 but with letters instead. £2.95

PROGRAMMING

LANG 1-2 - Sozobon C Compiler Release 2. Includes documentation, shell etc £3.00 'A'
LANG 3 - C source code, loads of routines includes documentation. Compiler Req. 'A'
LANG 4 - C source code, as above includes communications, games, utilities. 'A'
LANG 5-9 - GNU C++ Compiler 2.1 - Hard Disk and at least 2.5 Meg memory needed 'A'. £6.50
LANG 10 - Fast Basic Routines, includes runner program. Some require hi-res.
LANG 11 - GFA Basic programs, includes runner program. ST Basic 1 programs. Some hi-res.
LANG 13 - Professional GEM guide - 17 Chapters of tutorial with C source. 'A'
LANG 16 - STOS Tutorial and various Basic programs
LANG 20 - Source Level Debugger for GNU C Compiler. 'A'
LANG 24 - C Adventure Toolkit - the very best adventure creator available 'A'
LANG 27 - GFA Basic v 2.0, GFA Expert - nice GFA tutorial . 'A'
LANG 29 - STOS Tracker - adds a new set of STOS commands to use with Soundtracker
LANG 30 - The Lost Boys Demo Source - for the Megabang demo.
LANG 33 - Coronado Enterprises C++ Tutorial v2.00 - 12 chapters + tons of source. 'A'
LANG 34 - Pascal Compiler, includes linker, library files, shell + programs. 'A'
BUPRO 2 - 68000 Programmers library v47-hundreds of routs for writing games. £2.95
BUPRO 4 - Moving Bytes 1 - More routines for screen effects, music, scrolling etc. £2.95
BUPRO 5 - Sprites Portfolio v 2.0 - Over 500 top quality sprites in Degas format. £2.95
BUPRO 6 - Music of the Shapeshifters-20 interrupt driven tunes, many with source. £2.95
BUPRO 11 - Music of the Shapeshifters 2 - sixteen more tunes + more source. £2.95
BUPRO 16 - ST-68K Reference 3.0-includes full data on ST internals, excellent. 'A' £2.95
BUPRO 24 - Supervisors Programming Disk 1 - Loads of source etc + music. £2.95

THE BEGINNERS GUIDE TO STOS BASIC

This is a complete programming course for all ST/E's consisting of a 618 page, ring bound course manual + 2 double sided disks with over 190 programming examples! 26 Chapters will take you through step-by-step how to create shoot em up's, art programs, junior educational programs, GCSE maths programs, databases, word processors, music programs and much, much more. Only £39.95 + £3.00 postage (UK only) and if you order from us you may choose ANY THREE FREE DISKS of your choice!

MUSIC

MUSIC 1 - Noisetracker 1.5 - a popular soundtracker creator includes samples+source.
MUSIC 2 - Samples disk 1. Works with Music 1 or 21. More on disks 2-5.
MUSIC 11 - Arpeggiator, Jukebox (DMA only), MKS-50, Midi Beat, Projekt. 'A'
MUSIC 12 - The Henry Cash Sequencer - 16 voice sequencer + full manual on disk. 'A'
MUSIC 13 - Drum Patterns for Cu-Base in standard MIDI format. Music demo 'A'
MUSIC 16 - Yamaha PSS790 Editor, includes loads of sample voices. 'A'
MUSIC 17 - Casio Patch Editor, CZ101 Up/Downloader, Soundchip Music.
MUSIC 21 - Digi Composer - Full soundtracker creator with support for STE and TT.
MUSIC 22 - Alchemie Junior 2.2 - sequencer boasting real-time, multi-tasking + more. 'H'
MUSIC 23 - Sound Merlin 1.02 - powerful ex-commercial program, Mozart's Dice Waltz 'H'

SOUND TRACKER MODULES (All come with player)

For a third of the price of a CD single you get several brilliant tunes on one disk!

TRAC 114 - Acidpain, Delight, I Feel Love, No Limit, Popcorn, The Scene, 1993.
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COM-05 D-Term with Z-modem module
COM-06 Mo-Term Elite (for buffs)

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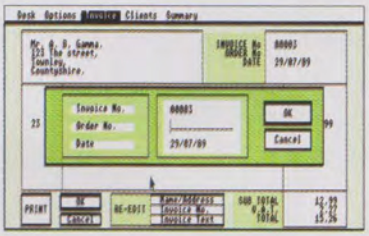
INVOICE MASTER

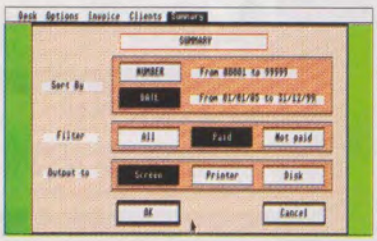
TUMBLEVANE PDL • DISK NO: M.148 • £1.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: An invoicing program is an essential tool for any small business. It completely removes the stress of keeping track of unpaid debts, and can also give your company a more professional image.

Invoice Master is aimed at the basic end of the invoicing market and unlike its nearest competitor, *Sales Controller*, possesses no stock control abilities whatsoever. This means that each product you stock must be typed in by hand each time you produce an invoice – annoying, to say the least. VAT is supported and is adjustable, making the program quite future proof.



Invoice Master is very nicely designed and fully mouse controlled. Feature-wise, it has a little way to go before catching up with Sales Controller.



By using the "Summary" menu, you can keep a check on any unpaid accounts. The resulting information can be directed to the screen or your printer.

In terms of the interface, *Invoice Master* is very nice to look at and the documentation supplied on the disk is very good indeed. The fact that it will run happily on an unexpanded ST is also a bonus.

ST REVIEW COMMENT: "*Invoice Master* is a very intuitive piece of software that's ideal for simple free-form invoicing. *Sales Controller* still has the edge thanks to its stock control abilities."

★★★★

KM-TERM

FLOPPYSHOP • DISK NO: COM.3844 • £2.50 • MEMORY: 0.5MB • SHAREWARE

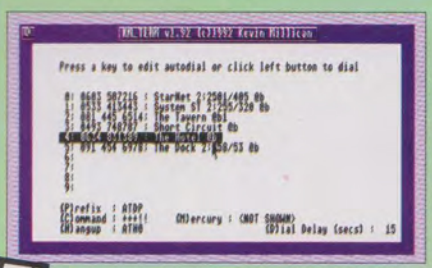
IN BRIEF: Very often, simplicity is the key to a good communications program. Batch languages, background transfers and sophisticated interfaces all have their place, but if all you want to do is raid a few file areas, only two things are required: an autodialler and good transfer protocols, and that's exactly what *KM-Term* provides.

In common with most ST comms programs, VT-52, VT-100 and ANSI terminal emulations are catered for, and all options are easily adjustable through a colourful GEM-style menu. This can be summoned at any time from the terminal screen with a swift click of the right mouse button and the buttons are big enough to be usable when you're on-line and in a hurry. File transfers are provided externally, courtesy of *XYZ* and *Jekyll* (which is handy if you can find a board that supports it!).

ST REVIEW COMMENT: "*KM-Term* lacks the speed or sophistication of the *Freeze Dried Terminal* and is not really any easier to use. Competent, but unexciting."

★★

A large, friendly icon panel does little to hide a basic lack of features.



The autodialler is one of the nicer aspects of the program. Being a British program, very little hassle is involved in using a Mercury line.

ATARI ST REVIEW BUDGET BUY

GEM-VIEW 2.24

THE ST CLUB • DISK NO: GRA.158 • £1.45 • MEMORY: 0.5MB • SHAREWARE • FALCON-ENHANCED

IN BRIEF: *GEM-View* will be a familiar name to anyone who keeps an eye on the public domain. It started life as a very simple graphics viewing utility and has steadily transformed into one of the most powerful conversion utilities available for the ST.

Version 2.24 is the first major upgrade for some time and adds dozens of new features to an already bulging specification sheet. The biggest improvement is support for Falcon graphics modes, but there's plenty extra on offer for ST owners too. For a start, you can now run under MultiTOS with total confidence, iconifying the application if your desktop becomes too cluttered. The Atari clipboard is also supported, although very few other programs will let you use it. *GEM-View* is as easy to use as ever and, as a bonus, version 2.24 caters for several more picture formats, including TIFF, JPEG and Microsoft Windows 3 bitmaps.

ST REVIEW COMMENT: "Shareware doesn't come much closer to perfection than this! *GEM-View 2* consistently keeps one step ahead of the competition. It can be a bit slow at times, but when you consider the number of picture formats handled, it's a very small price to pay."

★★★★★

GEM-View 2.24 supports all Falcon screen modes and loads just about any picture you'd care to throw at it, including TIFF!

The interface is as intuitive as ever, with pop-up menus and icons guiding you through all operations. In terms of speed, there's still room for improvement.

ACCOUNTABILITY

TUMBLEVANE PDL • DISK NO: UTA.49 • £1.50 • MEMORY: 0.5MB • SHAREWARE

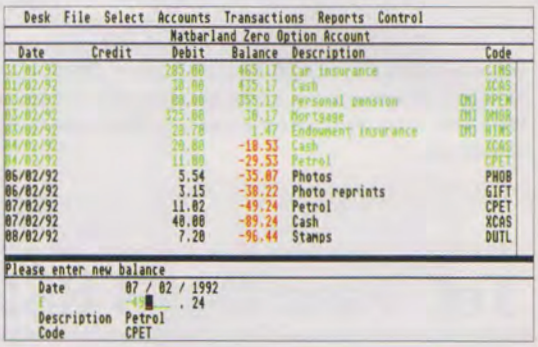
IN BRIEF: *Accountability* is designed to help you take care of your personal finances. It's a wholly GEM-based application and the control screen consists of two windows – one for account information, the other for account editing.

Up to ten accounts can be handled at once and these are easily selected via the GEM menu bar or the function keys. Reporting is quite sophisticated, allowing you to single out one account or to report on the whole lot. There's adequate room for comments when entering transactions and the program feels very professional in its approach.

The front end is quite uncluttered and good use is made of colour on screen (red for debit, green for credit and so on). Several example files are included on disk, as is a set of tutorials.

ST REVIEW COMMENT: "As personal accounting programs go, *Accountability* is a good one. It certainly lacks the tacky feel of many of its peers and there's no shortage of documentation. The only real drawback is that it refuses to run in high resolution."

✪✪✪✪



Colour coding adds a touch of class to Accountability. It could be just what you need if your personal accounts are in a bit of a pickle.

MIKE FILL 3

THE ST CLUB • DISK NO: BPR.29 • £3.95 • MEMORY: 0.5MB • LICENCEWARE • FALCON-COMPATIBLE

IN BRIEF: *Mike Fill 3* is a utility that aids in the construction of full colour and mono fill patterns. The resulting images can be saved either as a Degas picture file or as a GFA procedure for direct use in your own programs.

The basis of the program is the library, which is capable of storing a huge number of fill designs; click on any slot and you'll be whizzed directly to the editing screen. From here, designs can be inverted, edited pixel by pixel or tweaked in a huge variety of ways.

The whole program is nicely put together with classy fades and scrolls used extensively, but seems to have very little purpose beyond experimentation. More than 1000 ready made fills are included if you do decide to give it a whirl.

ST REVIEW COMMENT: "*Mike Fill* is a very accomplished, well designed program, but the big questions is: what's it for? If you're a GFA programmer and think you can benefit from over 1000 fill patterns at your disposal give it a try; otherwise, avoid."

✪✪✪

On loading the program, you are presented with a huge library of available fill styles – just click on the one you want to edit and away you go!

TOP TEN UTILITIES

1 GEM-VIEW 2.24 • THE ST CLUB • DISK NO: GRA.158 • £1.45 • MEMORY: 0.5MB • SHAREWARE • FALCON-ENHANCED

If you need to convert, view or manipulate graphics in any way, *GEM-View 2* should be your first port of call. It will load just about every picture format in popular use and can drive most displays from humble ST low resolution right up to the 24-bit screen modes offered by the CyRel Sunrise card.

2 THAT'S WRITE FONTS • THE ST CLUB • DISK NO: FON.154 • £1.45 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

A set of *That's Write/Write On* fonts which owes most of their beauty to the Calamus originals. It's a strictly utilitarian mix featuring Swiss, Times, Bodoni and Drury Lane typefaces, all at a very usable 300dpi. The quality is good and self-extracting archives have been used to squeeze every last byte out of the disk.

3 INVOICE MASTER • TUMBLEVANE PDL • DISK NO: M.148 • £1.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

A basic invoicing program which lacks the stock control abilities needed to push it into the big-time. Well worth a look, but preferably after you've given *Sales Controller* a test drive.

4 ICD SCSI PROBE • FLOPPYSHOP • DISK NO: UTL.3097 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN

This one's for tech-heads only. It allows you to send SCSI commands to to any device connected through an ICD host adaptor and is ideal for programmers interested in writing hard disk drivers. Useful if you know what you're doing; lethal if you don't – you have been warned!

5 SYSTEM INFO • NEW AGE PDL • DISK NO: FALC.2 • £2.00 • MEMORY: 0.5MB • SHAREWARE • HIGH DENSITY DISK DRIVE REQUIRED • FALCON-COMPATIBLE

System Information is the most extensive ST, TT and Falcon interrogation program ever released. The information it reveals stretches right from the usual memory and disk configuration through to operating system vectors. The whole thing is easily controlled through a nice GEM shell.

6 ACCOUNTABILITY • TUMBLEVANE PDL • DISK NO: UTA.49 • £1.50 • MEMORY: 0.5MB • SHAREWARE

A nicely rounded home accounts program that scores over the competition thanks to its well designed interface. Up to ten bank accounts can be handled and the reporting facilities are very good for a program in its class.

7 SCROLLING THUNDER • FLOPPYSHOP • DISK NO: UTL.3835 • £2.50 • MEMORY: 0.5MB • SHAREWARE • STE/TT/FALCON REQUIRED

Scrolling Thunder is a text viewing utility that makes use of the hardware scrolling abilities of the ST, TT and Falcon. It's far classier than your average text viewer and is completely mouse controlled. Besides, with a name like that how could I resist using it in the charts?

8 RAM TEST • FLOPPYSHOP • DISK NO: UTL.3097 • £2.50 • MEMORY: 0.5MB • SHAREWARE • PRINTER REQUIRED

Some memory faults show up as soon as you switch on the machine, but others are far harder to trace. This program is designed to wheedle out any problem by repeatedly writing and reading to each address in RAM and sending the results to the printer. A helpful text file on memory problems is included with the program.

9 SOLUTION DEMO • THE ST CLUB • DISK NO: CMP.17 • £1.45 • MEMORY: 1MB • BANNERWARE • FALCON-COMPATIBLE

A workable demo of a powerful equation solving package. It can plot any expression, has its own built-in programming language and supports GDOS fonts for an accurate on screen display. This demo is quite limited, but it does give you a good idea of what the package is capable of.

10 WERCS TO GFA • FLOPPYSHOP • DISK NO: UTL.3092 • £2.50 • MEMORY: 0.5MB • SHAREWARE

Those fond of *GFA BASIC* will no doubt find this utility invaluable. It converts Hi-Soft *Wercs'* header files into listings that can be merged directly into GFA source code. Far easier than converting the damn things by hand, I think you will agree.

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ACCOMPANIST 2.5

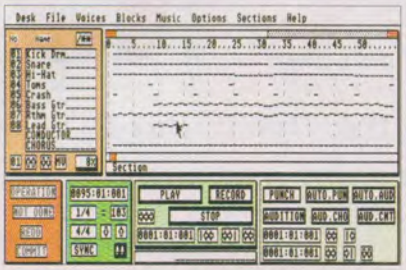
ATARI ST REVIEW BUDGET BUY

THE ST CLUB • DISK NO: MID.80 • £1.45 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

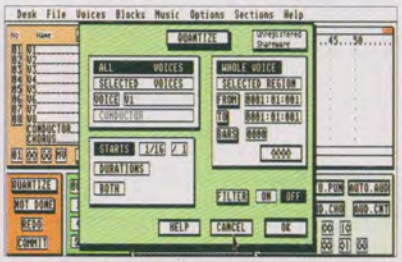
IN BRIEF: The *Accompanist* MIDI sequencer has an interesting history. It was written in response to an article in *Sound On Sound* magazine (outlining the perfect sequencer) and has undergone steady improvements ever since.

Enhancements to the latest shareware version include on-line help, the ability to quantise as you record, improved block operations and plenty more. Screen redraws have also been given an extra dose of speed on machines with one megabyte or more. The interface is a beautifully crafted example of GEM programming and as a result is a total doddle to use.

For the paltry £10 registration fee you'll receive the latest version (8.4) which caters for General MIDI amongst many other things. There are one or two small screen-redraw problems on the Falcon, but these are easily cured with a swift click on the scroll bars.



Accompanist may lack the sheer power of its commercial rivals, but remains a good choice for simple sequencing.



On-line help is available from most dialogue boxes and there's a cracker of a manual included on disk to introduce you to the program.

ST REVIEW COMMENT: "*Accompanist* is a solid MIDI sequencer, that's extremely easy to use. In terms of power and interface my money's still on *Alchimie Junior*, but for basic level sequencing, it is nothing short of perfect."

★★★★★

IN CONTROL

GOODMAN INTERNATIONAL • DISK NO: GD.2014 • £2.75 • MEMORY: 0.5MB • FREEWARE • FALCON-COMPATIBLE

IN BRIEF: Let's face it, most synths rate pretty dismally in the ease-of-use department. If you're lucky you'll get a single line LCD display and adjusting half a dozen settings through a screen smaller than your average pocket calculator is tedious to say the least.

In Control is the solution. It provides you with a bank of GEM sliders which you can configure to alter certain settings on your synth. For example, the supplied MT-32 configuration file allows you to adjust the main volume, reverb, timbre and much more – all without leaving the mouse-driven comfort of a GEM interface. A small menu at the top of the dialogue allows you to adjust the settings to suit your synth and the program is quite happy to run as a desk accessory alongside almost any sequencer.

Configuration files are included for several popular synths, including the MT-32. Once you're happy with the settings, the whole lot can be squirted to your sound module.

Editing the sliders to suit your own synthesiser can be a bit long winded, but it will save you time in the long run.

ST REVIEW COMMENT: "*In Control* is the ideal cure to MIDI musician's neck (caused by repeatedly switching from ST to synth!). Configuration is a bit of a hassle, but it's well worth the effort."

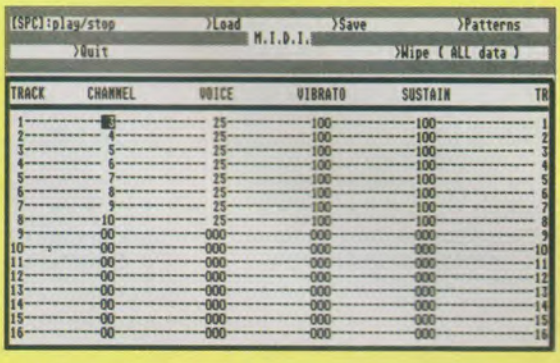
★★★★

DAYBREAK 2

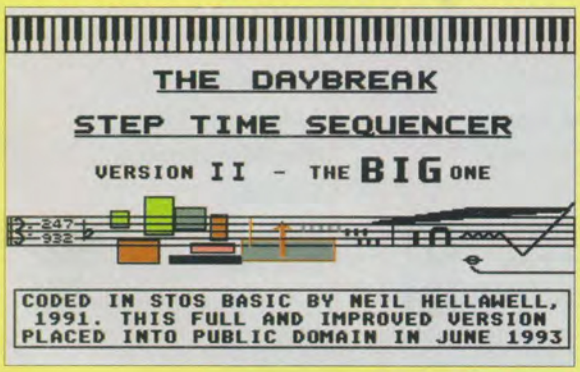
GOODMAN INTERNATIONAL • DISK NO: GD.2008 • £2.75 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: If your keyboard skills go no further than Chopsticks, recording a whole tune in real-time can seem like an impossibility. The solution is to use a "step-time" sequencer, which adds one note at a time as you play it. It's the same idea that's used by most soundtracker programs these days.

Daybreak 2 has been written especially to deal with step time sequencing and describes its approach as the equivalent of "word processing with music".



The main workscreen is similar to most soundtrackers in appearance, although control is completely via keyboard – 1980s' style!



In principle Daybreak seems like a good idea, but there's very little to recommend it beyond the fact that it's free.

A user-friendly interface has been ditched in favour of letting the program run on an unexpanded half megabyte ST and instead, a system of keystrokes is used. The author seems blissfully unaware that almost every sequencer ever written will allow you to write in step-time and after two minutes' use you'll be dying to move back to the mouse-driven comforts of *Accompanist*.

ST REVIEW COMMENT: "There's very little to recommend *Daybreak 2*. It's a swine to use and only offers a fraction of the power of almost any other sequencer. Something as simple as a mouse driven interface would be a step in the right direction!"

★

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G.222 GRANDAD AND THE QUEST...: 3D graphic adventure by Ian Scott. Shareware 1mb
G.80 TETRIS & PILE UP: Two very good versions of the 'Tetris' arcade game.
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D.373 DREAMS: Dentro by Animal Mine of Holland.
D.372 REALITY IS A LIE: Good first demo from Psychonomix. (1Mb).
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D.367 EXTREME RAGE: Sinecurves, Shodowbos, etc. from Anatomica of Sweden (1Mb STE).
D.363 GROTESQUE: Psychedelic techno music demo. (1Mb, STE).
D.366 BIRDS OF PREY: Intro to the commercial game that never made it to the ST (1Mb).
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D.324 CROSSBONES: STE demo (also known as RED SECTOR DEMO)
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U.47 PROBE ST: Handy utility. Grabs music/graphics, disk/memory editor, etc.
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AUTHORS

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Another bundle of products squeezed into Short Cuts, the section of ST Review that reaches the items other magazines leave behind...

SHORT CUTS

PRODUCT NAME	RATING
X-DEBUG	✪✪✪✪
GEMULATOR	✪
ICD PRO UTILITIES	✪✪✪
DEGASART	✪✪✪
FALCONWING	✪✪✪✪✪

SCORING

All products in this section have a rating out of five stars. To give you an idea;

- ✪✪✪✪✪ = *Get it now – sell your favourite disks if you have to!*
- ✪✪✪✪ = *Very good – worth the money but it'll wait until pay-day.*
- ✪✪✪ = *Fair enough – but you could live without it.*
- ✪✪ = *Not really – unless it tickles your fancy.*
- ✪ = *Uh-uh – check out our PD instead...*

X-DEBUG

Review by Mark Baines

Lattice C users finally have a source debugger! *X-Debug* is both a low-level and a high-level debugger for programmers. Assembly language programmers have full access to all the facilities they would expect from *MONST* along with greater flexibility (*MONST* and *X-Debug* were both written by Andy Pennell).

High-level debugging is available for HiSoft's *Lattice C* using the *Lattice C* format local variable debug information created with the *-d2* compiler flag. Locals, globals, static functions/variables and block declared variables are all recognised. Char, word, long, float and double types are supported with pointers and arrays converted to longs. Unfortunately, typedefs and structures are not supported which is a serious omission, but this has more to do with the debug information contained in the *Lattice C* object code rather than a shortcoming in *X-Debug*.

X-Debug will be useful to *HiSoft BASIC 2* users although current versions of it only supply line debug information – not local variable source level debug or global variables. Other languages can be catered for where standard Atari-format debug information is available although neither line nor source debug. *Devpac 3* and *Lattice Assembler* code can be debugged at source level just like *MONST*.

X-Debug will work on all Atari hardware, processors and monitor types although 1Mb of RAM is recommended as is TOS 1.04 or later. It can be run from the Desktop, installed and run from the *Lattice C* Tools menu or made resident at boot up by installing it in the AUTO folder-essential for debugging CPX modules and accessories.

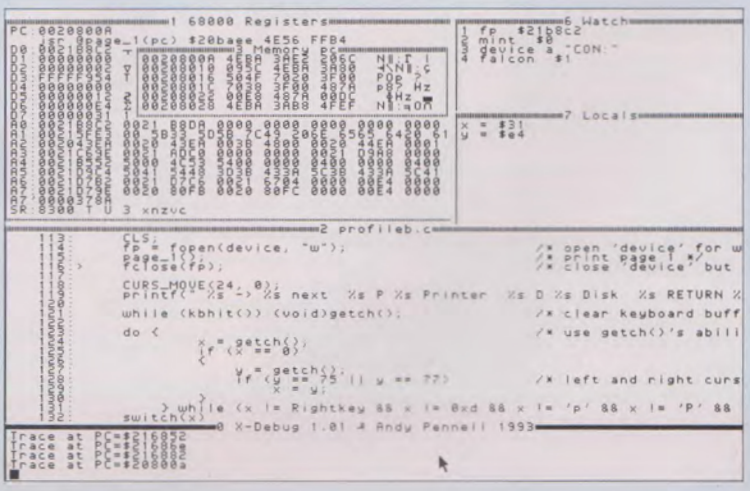
The package comes on a single-sided floppy which includes tutorial files, various utilities and monitor drivers so that, with certain large screen monitors, you can have *X-Debug* on one screen and the program being debugged on another. The ring-bound manual is well written and logically arranged, complete with index.

The interface is a non-GEM, multi-window affair with mouse move, select and sizing. Windows can be any size and overlap each other. It works well, especially in the 8x8 font and on large screens. There are eleven window types with a maximum of ten shown at once, including Command, Disassembly and Register windows.

The source code, assembly listing or both can be single-stepped through or run with extensive breakpoints inserted. A flexible expression evaluator allows for sophisticated control of the debugging procedure. Together with command aliases, user-defined keys commands and user-written procedures using a simple script language, the environment is very powerful and flexible yet easy to get to grips with. Almost everything can be configured to personal tastes at startup – all the commands can be *MONST*-compatible if you want.

X-Debug offers many advantages over *MONST* and is an absolute necessity for *Lattice C* users not familiar with assembly and wanting to debug their source code. ST Club have a demo version available on disk LAN.139.

PRODUCT:	X-DEBUG
CONTACT:	ST CLUB
TEL:	0602 410241
PRICE:	£24.99
RATING:	✪✪✪✪



Single-stepping through source code in Window 2 with some globals shown in Window 6 and locals in Window 7. The memory dump in Window 3 is locked on to the PC register. The Register Window and Command Window are also shown.

GEMULATOR

Review by Tony Kaye

Ever since home computing began, people have been trying to turn their machine into something else, although any kind of emulation has always been a compromise. Hardware add-ons for the ST have included PC and Macintosh emulators and software has allowed it to pretend to be a slow PC, Atari 8-bit, BBC and even a Spectrum.

The ST Club now offer the opportunity for PC owners to get their own back and emulate the ST via the Gemulator board. This consists of a card that slots into a spare port in the PC along with a disk to drive it with. The minimum requirements are said to be a 386 machine with four megabytes of RAM available, but in real terms the faster the machine, the better. The 486SX25 PC that I used for my tests was slow to react and only had one megabyte of user RAM available. The manual says that eight megabytes of RAM are needed to equate to a four meg ST!

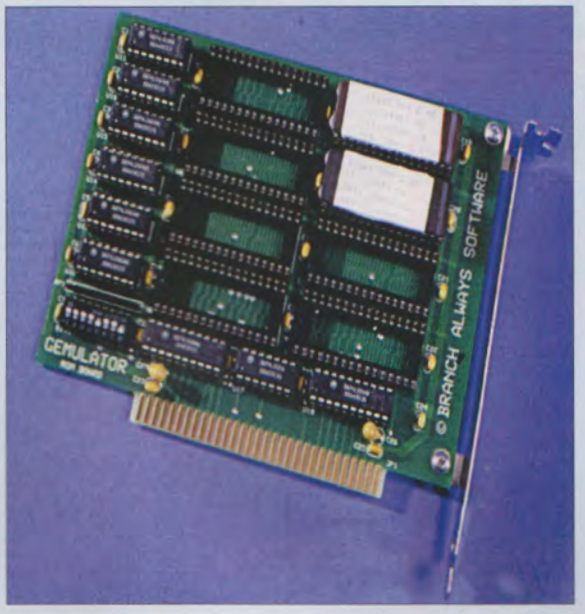
The board is simple to install, but setting up takes a while longer. Unfortunately, the manual consists of a mere 16 pages providing insufficient information. If you have limited knowledge of the ST, it won't help you at all. After a lot of playing with configuration files, TOS 2.06 eventually appeared on the screen.

As the PC does not use the same system of hard disk management as the ST, a virtual hard drive partition has to be set up.

You can't boot from this, so your initial configuration has to be on disk. It is possible to write to the first 32 megabytes of the existing hard disk, but be careful – in operation, I didn't have a lot of success with the Gemulator. In fact, it completely killed the computer I tested it on, which was a brand new unit supplied to our sister magazine, *PC Home* for review.

I'm still waiting for the post mortem to find out exactly what happened, but it does mean that if there's a risk of permanent damage to the PC, I can't recommend the Gemulator at all. And with the 1040 STE reduced to £199 and the Gemulator at £195, is it worth it anyway?

While you effectively get a hard drive and monitor thrown in, and you can run three STs at the same time using Windows, is there a risk of destroying your machine?



The Gemulator – interesting idea but awkward to use at best.

PRODUCT:	**GEMULATOR**
CONTACT:	**ST CLUB**
TEL:	**0602 410241**
PRICE:	**£195**
RATING:	✪

ICD PRO UTILITIES

Review by Tony Kaye

ICD has been at the forefront of hard disk interface technology for almost as long as the ST has been around. Its range of hard disk utilities have always been regarded as probably the best available. There is only one snag; you have to have an ICD host adaptor in your hard disk drive to use them – until now, that is.

You can use ICD's Pro Utilities with almost any make of drive and have access to the full range of programs available from *HDutils* to *Cleanup* (both included in the package).

Two disks full of software are included in the package and can be accessed by running the *ICDBOOT.PRG* either from the AUTO folder or the desktop to tell the system that it is now under ICD control. A loading screen appears and the ICD caching facilities are activated.

From this point on, all of the standard utilities react as if an ICD host adaptor is present. The choices offered allow you to format, partition, zero and just about anything else you could want to do to your hard drive.

Support for other SCSI devices is included in the package, including Floptical and CD-ROM drives. A separate folder contains everything you need to run a CD-ROM drive using an ICD-compatible adaptor such as The Link. This includes Atari's MetaDOS system, required for connecting this type of drive to the ST.

Access to the software functions like caching are available from the *XControl* panel using *ADSCSI.CPX*. However, on the version I tested, the instructions are in German...

One program in the package that you can't make use of is *ICDTIME.PRG*. This is the clock setting program for the ADSCSI Plus board which has a battery-backed clock mounted on the board itself and doesn't work with a cartridge clock like Forget-Me-Clock II.

PRODUCT:	**ICD PRO UTILITIES**
CONTACT:	**ATARI WORKSHOP**
TEL:	**081- 693 3355**
PRICE:	**£39.95**
RATING:	✪✪✪

ICD Pro Utilities – a useful program if you have a hard drive without an ICD host adaptor.

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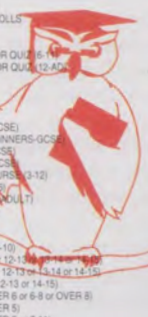

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DEGASART

Review by Jane Plessey

If you have two left hands when it comes to art, you may be interested in this tutorial from Goodman International. *Degasart* is a two disk package that takes you through the steps of creating works of art on your computer, starting with the basics and working up to include such aspects as dithering and perspective.

The tutorial shows you how to break objects down into simple shapes. For example, a tram is given the shape of boxes to simplify drawing. Then it is enhanced until eventually it looks like a method of transport. Using a series of Step by Step pictures, the complete project progresses from rough sketch to finished artwork in an easy to follow manner.

The first lesson follows the exploits of said tram and also covers the use of fonts, dithering, and other special effects plus a section of hints and tips. Three more pictures and a lot more tips in the second part take you through many different aspects of computer art.

Each page of text is accompanied by an illustration of the point being covered. There is no pressure at all and the progression is quite natural. If you'd like to learn how to draw, you could do a lot worse than have a go with *Degasart*.

All the text is nicely presented in a 16 page manual that comes with the disks. The program is aimed at users of *Degas Elite* which, unfortunately, is no longer available. You can, however. adapt what you learn here to any art package although some of the commands will change.

DegasArt is nicely presented as a 16-page manual with a couple of disks.

PRODUCT:	**DEGASART**
CONTACT:	**GOODMAN INTERNATIONAL**
TEL:	**0782 335650**
PRICE:	**£9.99**
RATING:	✪✪✪

FALCON WING

Review by Mike Robinson

FalconWING is the latest product to join the ever-growing list of Falcon specific products, being a RAM upgrade board capable of taking standard SIMMs.

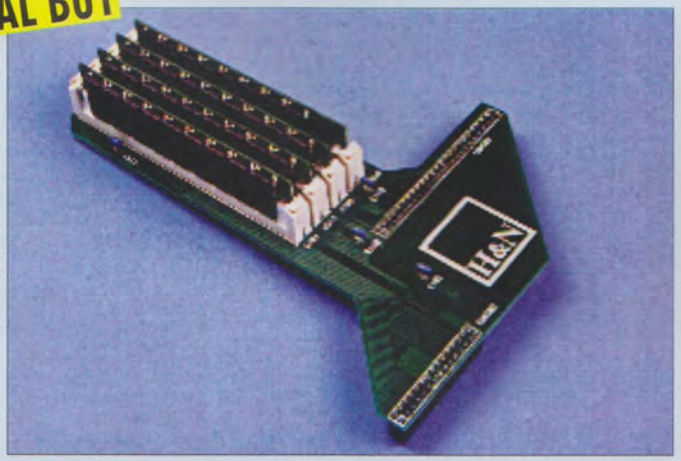
The board takes its name from its rather strange "T" shape, especially designed to fit inside the Falcon without having to cut the metal shield. Installation is very simple and described in detail on the accompanying installation sheet.

The Falcon case must be opened and the keyboard and metal shield removed. The next step is to remove the speaker and internal drive and to plug in FalconWING in place of the original memory board – System Solutions offers a trade-in service for this. The internal hard disk can be replaced once the new board is securely mounted. The speaker space is now occupied and a special sticky pad is supplied, enabling you to position the speaker to the side of the board.

The Falcon can cope with either 8 or 9-bit fast page mode SIMMs, 80ns or better, which are widely available. System Solutions can supply you with SIMMs that have been tested and work correctly with the Falcon. The board must be fully populated with either 1Mb SIMMs giving a total of 4Mb of RAM, or 4Mb SIMMs which give 14.3Mb usable memory. Due to the way the Falcon addresses memory, there is a severe slowdown with 8MB of RAM and so such a configuration is not recommended.

The board is well built and appears to be strong and not too sensitive to physical pressure. At under £60, this is a real bargain – now if only RAM was as cheap...

ATARI ST REVIEW
ESSENTIAL BUY



Unlike other memory boards, FalconWING requires no modification to the Falcon's metal shield. It slots comfortably into place with just a slight repositioning of the speaker.

PRODUCT:	**FALCONWING**
CONTACT:	**SYSTEM SOLUTIONS**
TEL:	**081-693 3355**
PRICE:	**£59.99 (UNPOPULATED)**
RATING:	✪✪✪✪✪

GOING UNDERCOVER

Nial Grimes strips back the ST's casing and reveals the innermost secrets of its powerful TOS operating system in the first of a short series...

TOS incompatibility – how many times have you heard that phrase over the past few years? Yet despite all of the problems it apparently causes, your ST owes its life to the creature known as "the operating system". But what is an operating system, why do you need one and more importantly, how can understanding it benefit you? Read on...

SPECIAL OPERATIONS

The reason for having an operating system is a simple one – it provides the basis for programmers to write software. After all, every application needs to load a file from disk, position text on screen and send data to the printer at some point, so Atari have included software to do these things – and much more besides – into the ST.

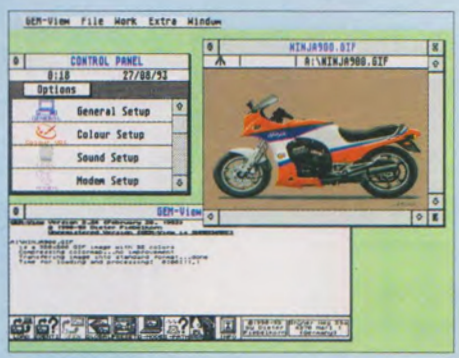
There are plenty of advantages to this arrangement. For a start, programmers don't have to have in-depth knowledge of every single chip in the machine – they simply use the operating system as a bridge between them and the hardware. All of these routines are known collectively as TOS, or The Operating System and in short they serve three important purposes:

- Programmers don't have to "reinvent the wheel" each and every time they write a new program. All the basics are already there from the moment the machine is switched on.
- Atari are able to change the hardware design of the ST, as long as the operating system routines still work in the same way.
- You benefit by owning a machine that is reliable and fast, being based on well-written, tested operating system routines... most of the time!

So now we know what an operating system is and what it does for us, let's break TOS down into its component parts and blow away the mystique that's surrounded it since day one...

IN THE BEGINNING...

At the bottom end of the ST's operating system you will find the **BIOS**, **XBIOS** and **A-line** graphics routines. These are known as device-

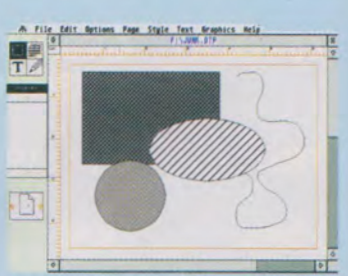


The AES looks after the GEM interface, informing applications when the user chooses a menu item, clicks a button or moves a window.

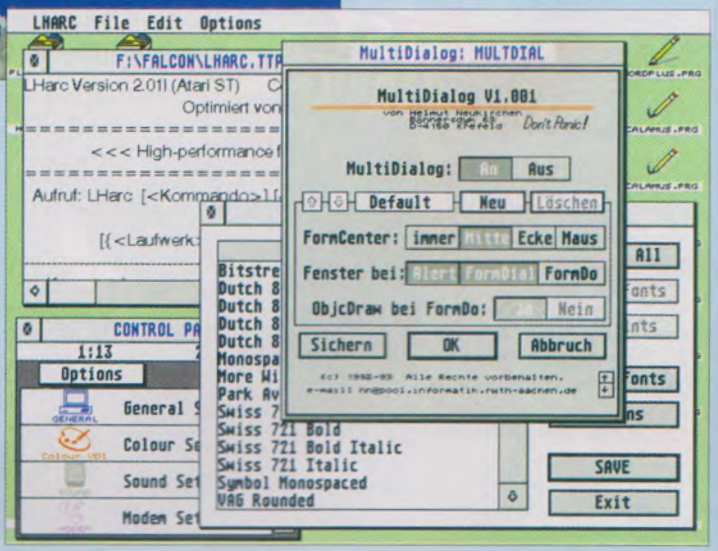
JARGON JOGGER

MFP – The acronym used to describe the ST's Multi-Function Peripheral chip. Its main responsibility is serial and parallel port handling.
ACIA – The ST has two Asynchronous Communications Interface Adaptors. The first deals with the keyboard, the second with the MIDI interface.
AES – The AES (Application Environmental Services) is the guts of the GEM system; it looks after all the menus, dialogue boxes and windows.
VDI – The Virtual Device Interface is a part of GEM and comprises a collection of high level "device-independent" graphics routines.
GEMDOS – The GEM Disk Operating System builds on the basic BIOS routines to make high level access to peripheral devices possible.
BIOS – The Basic Input Output System. Low level routines for communication with peripheral devices.

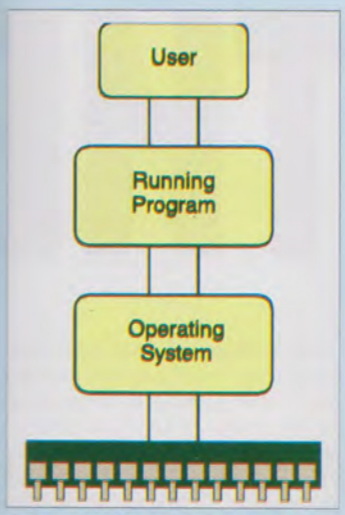
The A-line routines allow low level access to the blitter chip, and are often used by art packages.



In theory, the VDI makes it possible to write applications that work in any screen mode and with any printer.



Under MultiTOS, the AES has taken on increased responsibilities in caring for multiple programs, or "processes", in memory.



The operating system acts as a bridge between a program and the ST's hardware.

dependent parts of the operating system; in other words, they talk directly to the hardware and are specific to the ST. Remember, TOS was designed to be a multi-platform system.

The BIOS (Basic Input Output System) is designed to allow the programmer to communicate with peripherals attached to the machine. Hardware that it looks after directly includes the floppy disk controller, the MIDI ACIAs and the MFP, which handles the parallel and serial ports among other things. All of the BIOS routines are very rudimentary indeed – they're the closest you can get to hitting the hardware without actually getting your hands dirty.

On a similar level is the XBIOS, or eXtended Basic Input Output System. These routines are mainly designed to deal with ST specific hardware although, as you'll find with most of TOS, certain functions would be best placed elsewhere if this definition were to be totally accurate. XBIOS routines are included to enable the blitter, set the colour palette, deal with the keyboard processor and much more.

DRAW THE LINE

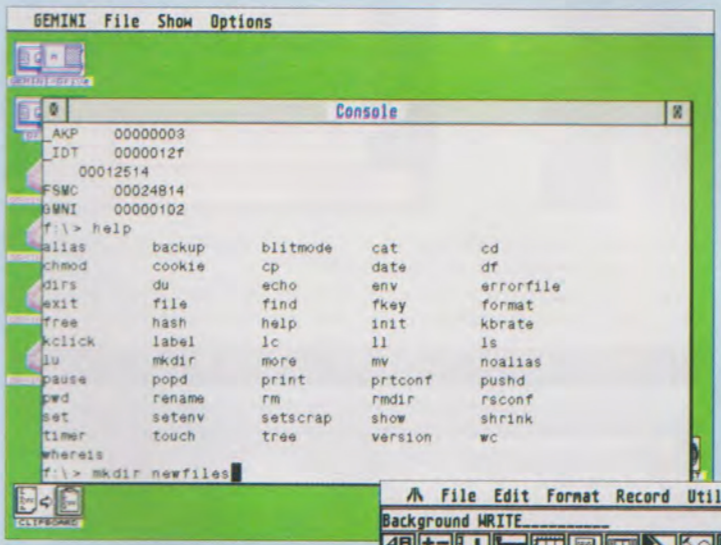
A-line routines are to graphics what the BIOS is to disk operations; they provide the ability to draw lines, basic shapes and position styled text on screen. Fast blitter chip access is also possible, although once again ease of use it not really a consideration at this level. GEM uses the A-line routines internally, although they can be accessed directly if speed is of critical importance.

It's on the next step of the ladder that the operating system really starts to become programmer friendly. **GEMDOS**, or the **GEM Disk Operating System**, sits just above the BIOS and deals with disk operations at a very high level – in fact, many of the simple file handling commands used by BASIC languages are based directly on GEMDOS routines.

WHY ARE THERE INCOMPATIBILITIES?

In principle, if all programmers stuck to using operating system routines, no compatibility problems would occur when a new TOS version appears. But as we all know that's rarely the case, so what are programmers doing to create these problems?

Almost all cases of incompatibility are caused by the use of "undocumented system variables". In simple terms, this means that the programmer bypasses an operating system routine and takes a piece of information (say, the write protect status of a disk) directly from source. All is well until a new TOS version arrives, when the program falls over because the source of the information has changed.



Responsibility for memory management and text output also falls at the feet of GEMDOS. It's a device independent part of the operating system, because it doesn't talk to any hardware directly and instead uses the BIOS and XBIOS routines.

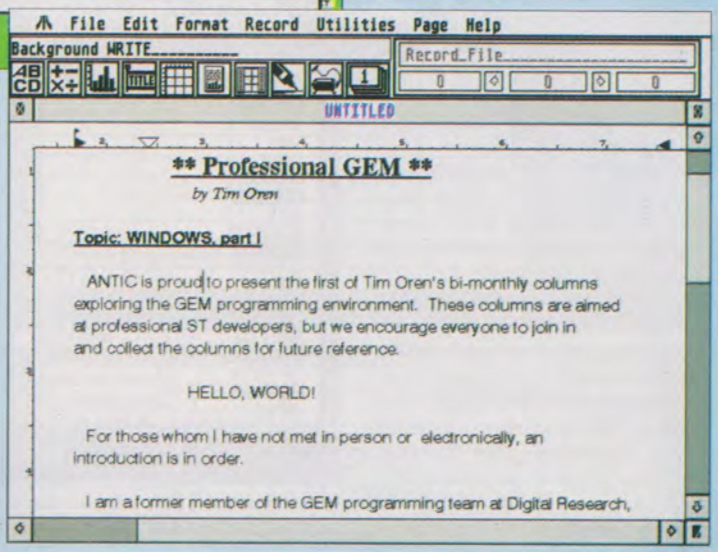
GRAPHICALLY SPEAKING

Unlike early operating systems, TOS does not end at disk and peripheral handling. In fact, it goes far beyond that in providing the basis for a whole interface, called **GEM**, or the Graphics Environment Manager.

GEM comprises two basic parts: the **AES** (Application Environment Services) and the **VDI** (Virtual Device Interface), both of which work hand in hand to provide the interface and screen display we all know and love.

The VDI is responsible for graphical and text operations. The real ace up its sleeve is the ability to talk to absolutely any device, as long as the correct "driver" is loaded. For example, a programmer doesn't need to what printer you have, where it's connected or how to talk to it – he simply sends the command to device 21 and leaves the rest to the VDI. Drivers for the screen are included in ROM and many others come with **GDOS**, which forms a part of the VDI when it is loaded.

Finally we reach the Application Environmental Services – the pinnacle of the TOS hierarchy. As the name suggest, the AES looks after all of the programs running on the machine, coordinating the running of desk accessories and applications in harmony. Its other main responsibility is to provide the programmer with an easy way to create dialogue boxes, menus and icons.



GOT THAT?

Well, that's it for this instalment. You now have a basic understanding of the way your ST ticks, and can safely approach a programming language without the fear of being swallowed. Next month we'll dig a little deeper and take a look at how operating system routines are called, how GEM programs are constructed and more. See you there!

If you've ever used a command line interface, you'll know exactly what GEMDOS is all about. On some machines, the user interacts with this level of the operating system – MS-DOS PCs for example.

If cash is a bit tight, Tim Oren's public domain programming series is an excellent way to become familiar with GEM.

WANT TO KNOW MORE?

Dozens of books have been written about TOS over the years, most of which are aimed squarely at programmers. The Abacus series has always been a popular choice, but be warned – most of the range is out of date, and they weren't that clear to begin with!

If you're serious about programming, Atari's own *DocSupport* series is probably the best bet. Although quite expensive – you're looking at over £200 for the complete set – it is at least accurate and regularly updated to cover the latest enhancements.

Other places to look for information include manuals supplied with programming languages (*Lattice* C for example) and the public domain, which contains a number of excellent tutorials such as Tim Oren's *GEM Programmer's Guide*.

Contacts:
HiSoft – 0525 718181
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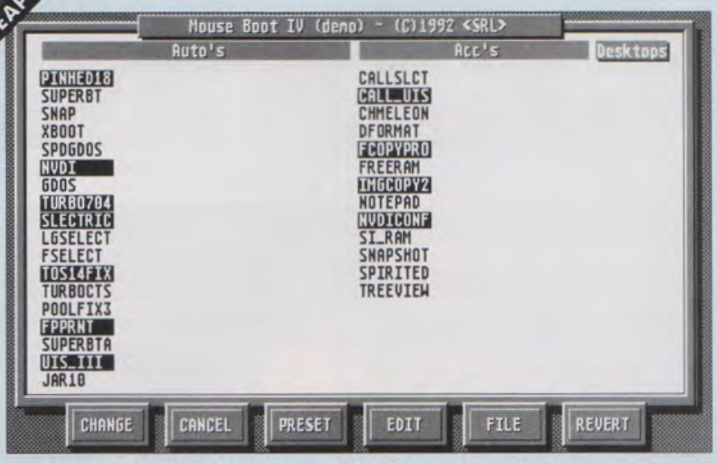
A KICK IN THE

In this month's cheap end, Andrew Wright explores ways of improving your ST's interface and speeding up routine tasks...

Superboot, a shareware program with a huge following. Just hit a function key combination and your ST boots with the appropriate accessories and AUTO folder programs installed.



Mouseboot 4 – this demo version looks very good indeed and allows mouse selection with a friendly interface.

The ST's GEM desktop is a familiar sight for most of us. Those handy little icons and file windows make the ST remarkably easy to use – basic file maintenance is dead simple and running a program is as easy as double clicking the mouse. After a while, though, as you get more and more used to your machine, it can actually slow you down – nice as it is to point your mouse at something and click or drag, it often turns out to be much quicker to hit a key or two.

Not many people realise it but for the cost of a few PD disks, you can completely change your ST's interface. In fact, some users never even see the GEM desktop from one week to the next. Perhaps even harder to imagine is the fact that there are other users who rarely touch a mouse at all – even file copying and diskformatting is done completely from the keyboard.

This month we'll look at how you can speed up the way you work with your ST – I can guarantee that if you start using a good boot manager in conjunction with things like a new desktop, replacement file selector and a hot key program launcher, you'll feel as if you've just bought a new machine!

PUTTING THE BOOT IN

The ST's AUTO folder facility is extremely useful but it has its drawbacks too. It allows programs such as utilities and system patches to be loaded into memory every time the ST is switched on or reset from the keyboard. Unfortunately, not all of them are required for each work session and many of them conflict with each other. The same is true of desk accessories, and as some of these take up a lot of memory, they can rarely be loaded all at once. The only way around this is to physically rename the unwanted ones, by changing the extender, before a reboot or to use a boot manager to choose the ones you want as the machine boots up.

Boot utilities are programs designed to speed up the booting process by offering a menu from which you can select which accessories to load, which AUTO folder programs to run and often which DESKTOP.INF and ASSIGN.SYS files to use for any given session. They even provide a way of booting up straight into your favourite program such as a word processor or accounts package, making your ST even more easy to use. Quite often you only switch on your ST to access one particular program – a home accounts package, perhaps, or a telephone database – so a boot manager makes the process quick and easy. The shareware standard is undoubtedly *Superboot*, now up to version 8.1. Although somewhat complicated to set upinitially, it offers scores of features, including sound and graphics to greet you every time you switch on your machine. You can configure *Superboot* to your heart's content and save the various boot configurations to recall them with any function key combination. For example, for a comms session you might want to install a text editor accessory and various system patches to override the serial bugs while for DTP you might need to load GDOS, an ASSIGN.SYS file (you could choose between several using *Superboot*) and perhaps an image viewer accessory like *Art Gallery*. The main criticism of *Superboot* is the unexciting opening screen and lack of mouse support. *Mouseboot* addresses this problem and offers a graphical interface and mouse selection of AUTO programs and accessories. Working versions of *Mouseboot 3* are widely available though you'll have to register with the author to get version 4 which is only available as a demo.

NEW DESKTOPS FOR OLD

Once you've decided on your accessories and AUTO programs for the session, the next stop is invariably the GEM desktop. However, for those with TOS 1.04 and earlier, the lack of features and restricted number of windows can be rather irritating. If you're lucky enough to have TOS 2.0x or *NeoDesk*, then you'll probably be happy enough with your choice but there are public domain alternatives that work just as well.

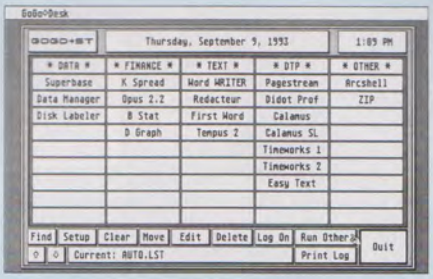
Advantages include the ability to install program icons on the desktop for easy access, more windows and attractive icons. The disadvantage of loading a replacement are loss of precious RAM memory and the extra time it takes to boot up though the latter shouldn't bother most hard drive users.

The PD replacement *Terradesk 1.32* is the newest of the replacements with comprehensive English documentation, fast loading and small size – it takes up around 100K of RAM compared with the 200K+ claimed by *NeoDesk*. However, it can't be unloaded when another program is run, something which *NeoDesk* and *KAOSdesk*, a shareware replacement, can do. *Terradesk* allows up to seven windows and the useful facility to select all files in a window, rather than just those visible as in TOS 1.04. It also has keyboard shortcuts and a choice of 35 different desktop or window icons.

KAOSdesk is an attractive shareware replacement that runs best in monochrome. It has a built-in icon editor, supports up to 20 program icons on the desktop and allows text to be displayed in three sizes. Only four windows are allowed but each has a useful free disk space counter. The main strong point is the amount of RAM required; although it requires 130K in normal use, when another program is launched it can unload itself with only a 10K overhead, making it the ideal choice for users of

INTERFACE!

520 ST/STEs. The third option, *Gemini*, is another free replacement desktop with perhaps the most attractive appearance of all. The program uses GDOS or SpeedoGDOS for the display, if installed, or the system font otherwise and there is a clipboard and two dustbins – one permanent and one recoverable. It also has a small icon mode, which means you can see a large number of files in each window on a normal screen, and a built-in CLI for quick command entry. However, it takes up a horrendous 340K of RAM, making it practically useless on anything less than a 1040.



GOGO-ST's 50 slots are waiting to be filled with headings or program titles.

ON THE LAUNCHPAD

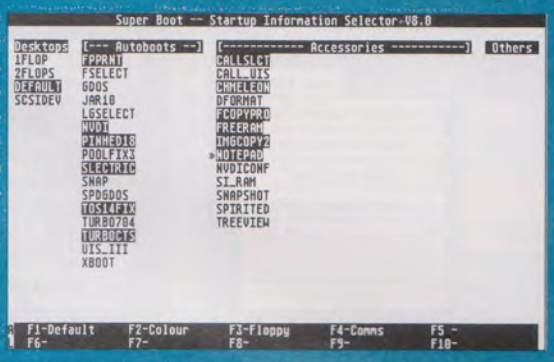
Of course, many users only use the desktop for two main functions; file management and program launching and it can be irritating to have to navigate through half a dozen folders to get to the program you want to use. This is where launchers come in – Codehead's *Hotwire* is undoubtedly the best but it doesn't come at the cheap end... There is a shareware alternative called *GOGO-ST* which is well up to commercial standard and only costs $5 to register. It's easy to install and can certainly speed up program launching by offering a full screen menu from which you select the program you want to load using the mouse. *GOGO-ST* can be loaded from the desktop or started straight from your chosen boot manager so you can virtually bypass the GEM desktop to get straight to your program.

The program presents you with a neat menu screen containing 50 blank boxes. Any GEM, TTP or TOS application, or even a document, can

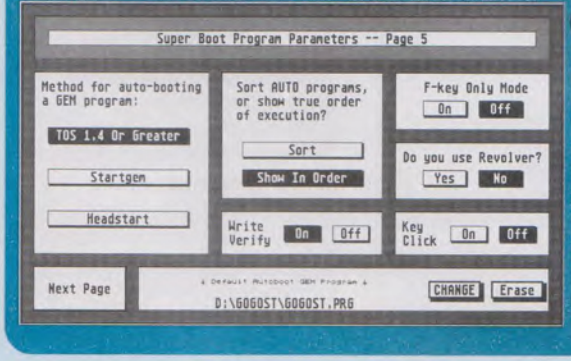
STEP BY STEP

ACTION STATIONS!

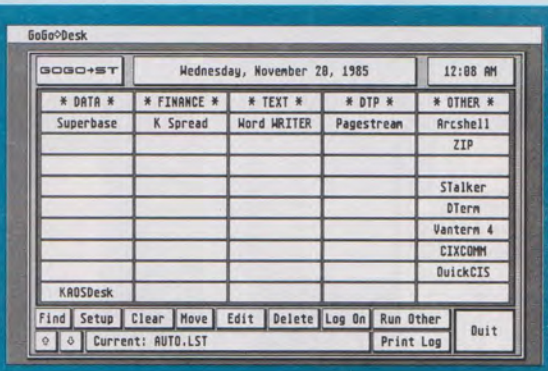
Here is a step-by-step example of a fully automated boot up process for a comms session. The AUTO folder programs chosen are two operating system patches (one to repair a serial port bug), the *NVDI* screen accelerator, a replacement file selector (*Selectric*), *Pinhead* to speed up loading and *FPPRINT* to speed up printing. Accessories include *CALLSLCT* to call the file selector from within other programs, *Chameleon* to load other desk accessories if necessary, *Fastcopy Pro* in case we need to format a disk and a notepad for reminders (jotting down filenames for subsequent downloading).



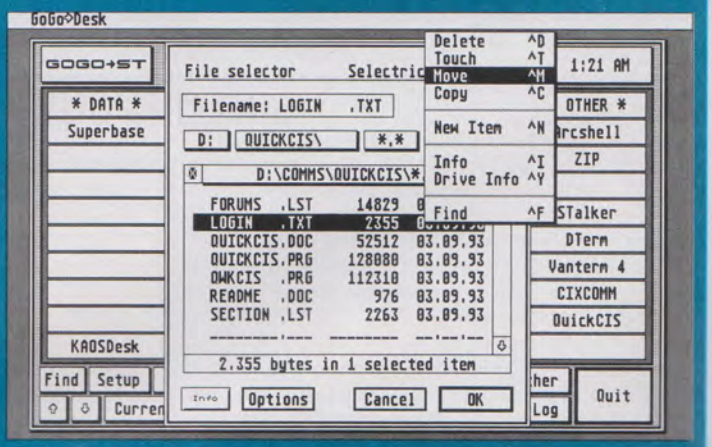
1 ***Superboot is being used to select the appropriate accessories and AUTO folder programs.***



2 ***This configuration, along with the chosen DESKTOP.INF file, is saved as a configuration called COMMS.***



3 ***Superboot has already been set up to launch GOGO-ST immediately after the ST boots using the supplied configuration program.***



4 ***Using the chosen replacement file selector, Selectric, you can move a batch of files from one directory to another, or create a folder and dump files into it.***

From *GOGO-ST*, the program launcher, any comms program can be selected simply by clicking on the appropriate box with the mouse. On quitting the comms program, control returns to *GOGO-ST* to choose another program or exit to the desktop – in this case, *KAOSdesk* can be accessed via the button on the bottom left.

The GEM desktop never even puts in an appearance. It's always there if you want it, by quitting from *KAOSdesk* or *GOGO-ST*, but it's hardly necessary. You can even use the installed file selector replacement to copy, move and rename files from within *GOGO-ST* or any program you're using.

The Cheap End

be installed in each box and run with a click of the left mouse button. Once the screen has been configured and saved as an. LST file, the boxes can be moved, deleted or changed by clicking on the appropriate operation at the bottom of the screen. Different LST files can also be loaded and saved. Desk accessories can be accessed in the normal way and whenever you exit a program, you are automatically returned to the main screen.

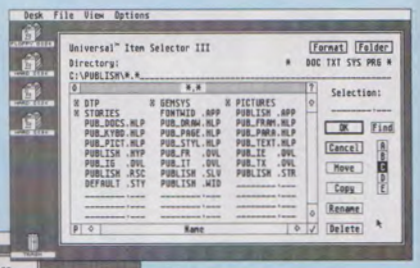
GOGO-ST can also be used on floppy disk based systems. An AUTO.LST file, the self-loading screen configuration, must be present on every floppy disk and it has to be edited to reflect that disk's contents. Once this is done, *GOGO-ST* can be launched from the boot disk. Floppy disks can then be changed and the program forced to read the disk's individual LST file by simply pressing the up arrow key – no longer do you need to update the window when a new disk is inserted and hunt through various folders.

SELECTION PROCESS

Often enough, you're in the middle of doing something complicated when you suddenly realise you need to swap a few files around or make some space on a disk. Perhaps you're desktop publishing or have a huge spreadsheet open – saving, quitting and reloading would take up valuable time. If you happen to have a replacement file selector installed, many file and disk management facilities are only a mouse click away.

If you've got an ST with TOS 1.00 or 1.02 installed, the file selector looks pretty spartan and later versions of TOS are hardly much better. A replacement file selector is really a system "patch"; a short AUTO folder program that stays in your ST's memory until you turn the machine off. Whenever you open or save a document, the new file selector appears.

PD and shareware alternatives include the *Little Green Selector*, *Selectric* and *FSELECT* but the best without doubt is the *Universal Item Selector* version 3.32, a low-cost commercial product. Using *UIS 3*, not only can you swap from directory to directory very quickly, you can format and copy disks, and rename, move and delete files. Best of all, it only takes up around 30 kilobytes of precious RAM and can be summoned as a desk accessory – almost equivalent to having the desktop available within programs. It also has numerous keyboard shortcuts, a file search facility, the ability to format floppies with extended formats and display up to 36 files at once on a standard screen.

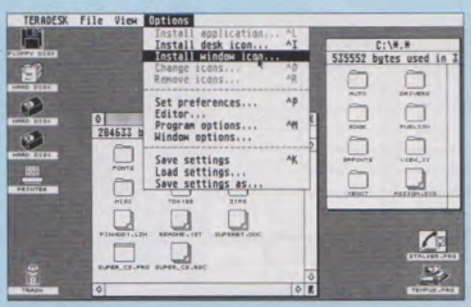


A replacement file selector is one of the most useful ST utilities.

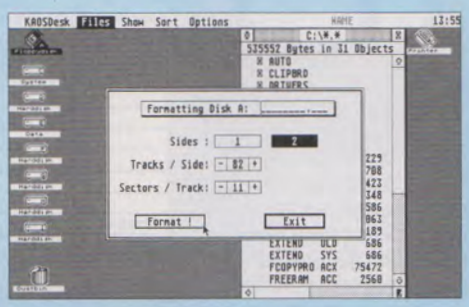
Plenty of extra functions in Selectric.

There is a good shareware alternative from Germany called *Selectric*. Despite the lack of English documentation (English menus are only available in the somewhat bugged version 1.0 although an English version of 1.3 is rumoured to be on the way), lack of disk formatting and the meagre window that shows only eight files at a time, it has several unique advantages. You could move a batch of files from one directory to another, or create a folder and dump files into it. Using *UIS*, you'd have to cancel the first move operation, create the folder, then repeat the move.

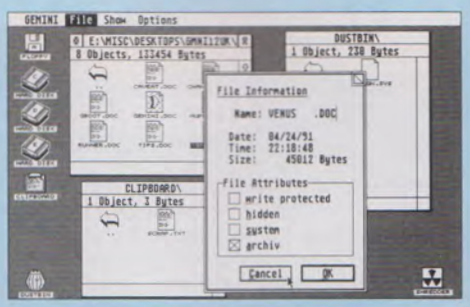
Selectric also lets you set up and save up to ten user-defined paths that can be recalled quickly. Here it's useful to add all your data directories and clip art folders for rapid retrieval. It runs as an accessory too.



Terradesk 1.32 – an excellent choice for replacing the ST's standard desktop.



KAOSdesk, another handy replacement desktop.

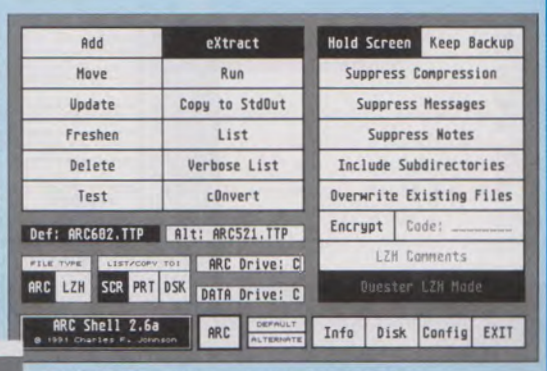


Gemini is a fully featured replacement desktop with some interesting features.

SHELLING OUT

There's another fast way of doing things that is often overlooked, a process known as shelling. Some shells more or less replace the ST's operating system, hiding the GEM desktop under a command line interface reminiscent of DOS-based PCs. Quite why anyone would want to swap a graphical interface for a CLI is beyond me but it takes all sorts!

Some shells exist to handle programs that would otherwise be very unfriendly. The obvious example is *ARCshell*, a neat little utility that puts a graphical front end onto the process of handling ARC and LZH archives. The only alternative is to enter a long string of unintuitive commands in the TTP dialogue box.



ARCshell, a shareware program to make de-archiving simple.

In a similar vein, the ST Club's *View II* utility makes short work of the process of viewing files, including some archived files. It also handles animations, Spectrum/Degas files and sound samples. All it needs is a double click on the file from the desktop.

View II is well worth getting – a cheap way of saving a lot of time and effort.

WHERE TO GET THEM FROM...

***Superboot 8.1*: ST Club UTI.277**
***Mouseboot ST v3*:ST Club UTI.279**
***Gogo-ST v4.0*: Goodmans GD.1584**
***Terradesk 1.32*: ST Club UTI.205**
***KAOSdesk 2.02*: ST Club UTI.237**
***Gemini 1.2*: Goodmans GD.623**
***Universal Item Selector 3.32*: ST Club, £14.95**
***View II*: ST Club, £14.95**
***Little Green Selector/Selectric 1.0*: Goodmans GD.1790**

Goodmans International can be contacted on 0782 335650 and the ST Club on 0602 410241.

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Atari ST-E	- Stereo	- CAB 9920
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STRONG

PART THREE: EDITING TEXT

One of a word processor's most powerful features is the ability to move text around. Tony Kaye explains the Cut and Paste option...

The more you use your word processor, the more you realise how much it has to offer over a typewriter. As the name suggests, it provides you with the necessary features to process words, not just print them onto a page.

You no longer have to be a highly trained secretary to produce good looking, coherent documents. However, a good understanding of what your chosen word processor can do leads to better end results.

SCREEN

Much of this flexibility comes from the document being formatted on screen, not on paper. As the display can be updated quickly and easily, your letter can be viewed and changed without wasting reams of paper. With a typewriter, once a letter is written the only way to make hefty changes is to start from the beginning again or cover it in white emulsion! Using a word processor, corrections can be made even after the letter has been printed as mistakes can be edited and the page output again.

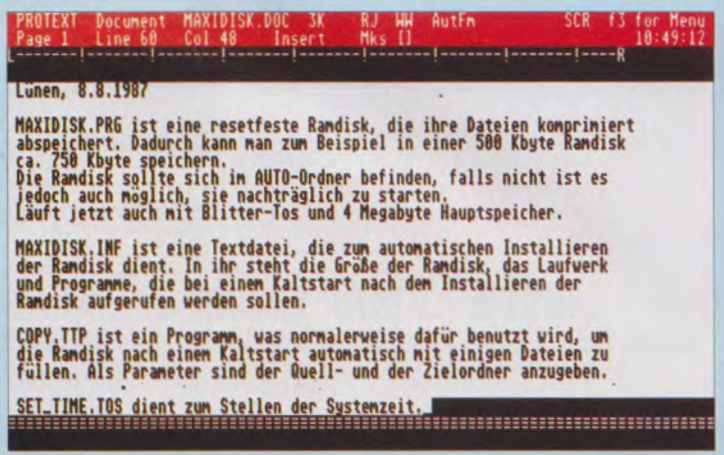


Figure 1: This text was highlighted by dragging the mouse from the start to the end. This works well for short areas of text, but can be slow when dealing with large blocks.

MARKING TEXT

Moving around the screen is easy with any program that uses the GEM WIMP (Windows, Icons, Mouse, Pointer) environment. You can use the mouse to take the cursor to any point in the document. From here, holding down the left mouse button and dragging across the text highlights what you want to alter although using Block commands leads to the same result. Once the text is marked, there are four main processes that can follow:

- CUT: Remove the marked text and place it in the clipboard, an area of memory reserved for such a use.
- COPY: Place it in the clipboard but leave it in position on the page, too.
- DELETE: Remove it completely and don't hold it in memory.
- PASTE: Copy the text held on the clipboard to the current position of the cursor.

There are many uses for these features. For example, if you are writing a number of repetitive reports with the same or similar entries, you can copy particular lines and paste them in place rather than retyping all the time.

The ST being a home computer, there is little continuity between packages in terms of keyboard shortcuts for menu options. For example, almost all Macintosh programs use the <Command>+<C> keys to Copy a selected portion of text into mem-ory. Such keyboard equivalents for menu commands can save a lot of time, especially in word processing where much of the work is repetitive and carried out by using the keyboard. Such a facility may influence you when judging which word processor becomes your staple diet.

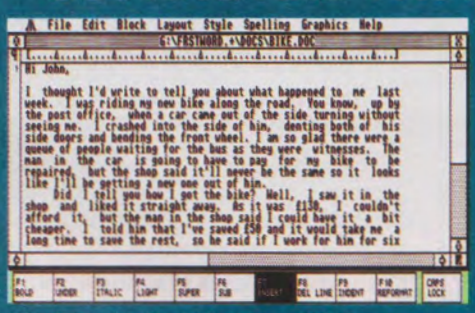
BLOCK COMMANDS

If you want to change a font/style, or delete/move a large block of text, the Block commands are easier to use than the mouse. With some word processors, you can only mark text

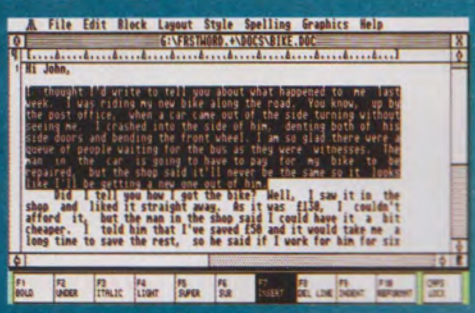
STEP BY STEP

CUTTING AND PASTING TEXT

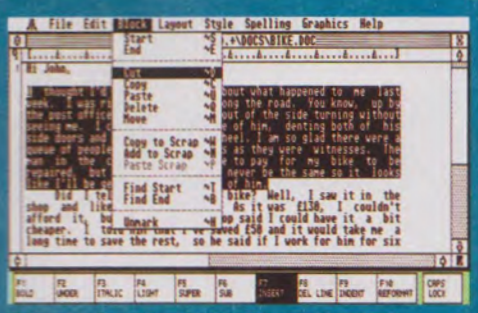
When you read a letter you've created, you may find that a paragraph or sentence is in the wrong place. Here is a letter that you have written to a friend using *1st Word Plus*, telling them that you have a new bike. Reading the letter back, you realise that the part about crashing it comes before the story of how you came to buy it. Obviously, you want these stories to be the other way round.



The first draft of the letter. While there's nothing wrong with the writing, the order of events is back to front and should be changed. Time for a little Cut 'n' Paste...



Let's move the whole first paragraph down the page. Highlight the exact words, not forgetting the full stop at the end, by pointing with the mouse and dragging to the end of the required text.



Choose the Cut option from the Block menu, or use the keyboard shortcut of <Control>+<D> to achieve the same result...

WORDS

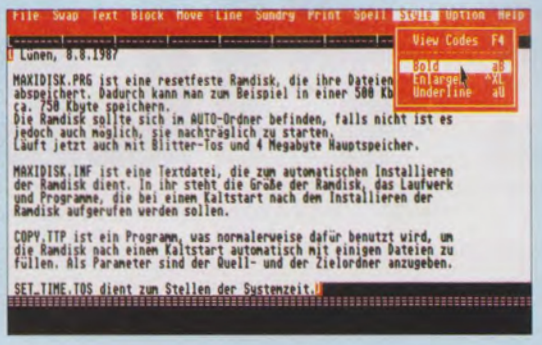


Figure 2: By contrast, this block is the same but was marked using the <Control>+<Z> routines. Note the square brackets ([ ]) – these give a visible guide to the area as well as the highlighting.

that is currently visible in the window – beyond this, you have to perform the operation in sections. Others scroll down the screen with you, but this can be slow. Using the Block commands, you can mark all required text in one go. Using *Protext* as an example, let's say that you need to change a section to bold type. Place the cursor at the beginning of the block and type <Control>+<Z> to start the block. Then move, using the cursor keys or the mouse, to the end of the text you want to change and press <Control>+<Z> again. The area highlights (black text on a white background) and you can now edit as you wish; add bold text, underline, delete and so on.

KEYBOARD SHORTCUTS

Keyboard shortcuts are available in most word processors, making them faster to use once the commands have been learned. You can move around the screen via the cursor keys and use macro key combinations instead of going to the menu bar with the mouse every time. For example, *Protext* can be used solely from the keyboard. The initial drawback is the time taken to learn the shortcuts, but the rewards in terms of speed of operation are well worthwhile.

INDIVIDUALITY

There are times when you may wish to edit a single word or phrase without affecting the rest of the text. For instance, the word "listening" has been enlarged in figure 3, taken from *Calligrapher Gold*. While you probably wouldn't want to carry out such an edit on an official letter, you might use it to emphasise a friend's house name in the address at the top of a note.

You can use highlighting to add print styles like bold or italics to the inverted text. If you are underlining words, make sure that the spaces on either side are not highlighted otherwise the result will look odd.

If you are using different font sizes, styles or even typefaces, highlighting a word will enable you to refer to the Font or Style options in many packages to see what characteristics are in use. Looking at figure 3 again, you can see that the word highlighted is in 22 point Zurich with no styles used.

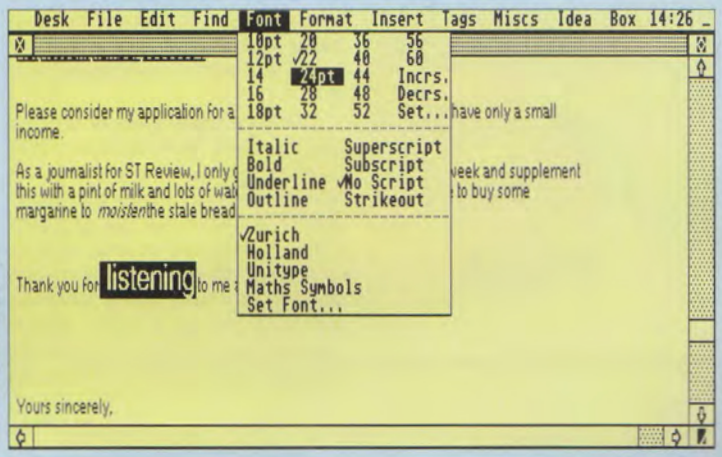


Figure 3: Highlighting text lets you change the characteristics of individual words or characters.

JARGON JOGGER

Clipboard – An area of the computer's memory set aside to store text while it is being edited.

Copy – Use the Copy command to repeat the same text later in the document. This places the selected text in the clipboard without affecting the original.

Cut – This command takes the text from its original position and moves it into the clipboard for use elsewhere.

Delete – The same as Cut, but the text is not retained in the clipboard.

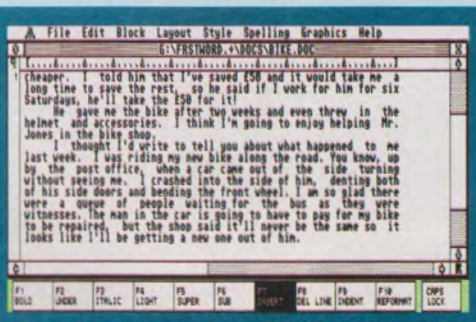
Highlight – Dragging the mouse over the required area of text causes it to be inverted.

Mark text – Select text either by dragging with a mouse or using the cursor and the Start/End Block menu commands. The whole area will then be highlighted for editing.

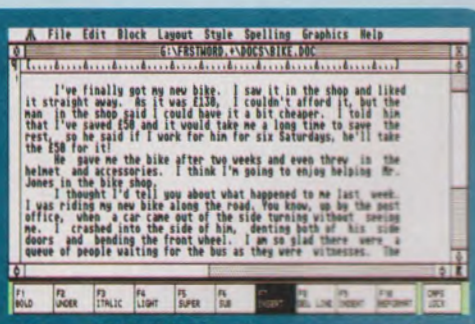
Move – A combination of the Cut and Paste commands.

Paste – Placing the cursor where cut or copied text needs to be inserted, a click on the Paste command retrieves the contents of the clipboard.

...and the block disappears, safely preserved in the paste buffer for you to move to its new position.



Move the cursor to the end of the existing text as this is where you need to paste the block. Select the Paste option from the Block menu, or use the <Control>+<U> keyboard shortcut, and voilá, the text flows straight in.



After a little tidying, the text now reads correctly. No-one would know the difference as "you can't see the join!"

SAVING IMAGE FILES

Ofir Gal continues programming ST Review's own paint package with HiSoft BASIC...

When we left the paint program it could load, edit and save a Degas image file. The program was simple in features but introduced several important XBIOS and GEMDOS calls. One of its main deficiencies was the inability to rename a file before saving which caused you to overwrite the original image. Introducing a facility to name a file takes a little more than you would think...

NAME THAT FILE

While the actual naming of a file can be handled via an *INPUT* statement, any text input introduces a problem – it appears on screen. Since our save routine simply saves the contents of the screen memory to disk, any text that you enter or that the program needs to display will appear over the image and will be saved along with it.

There are many ways of tackling this problem. Fully-fledged GEM applications normally use a file selector and then redraw the "dirty" portion of the screen, an approach that requires a full understanding of GEM and AES messages. There is a simpler and much faster solution, although you must realise that a "proper" application has to use the standard GEM routines in order to run alongside desk accessories or under MultiTOS. So how is this done? By saving the screen memory to a different location while also storing the palette settings. Following this, the original palette can be restored and using *CLS*, the screen can be cleared and used for text input. To be able to perform this, several changes have to be made.

MULTIPLE PALETTES

In the original program, a sub-routine called *xsetpalette* was used to set the new palette while saving the old one into an array. This array was then used to reset the palette upon exit. The routine can be enhanced and generalised by making some small changes as shown in listing 1.

The new routine takes two arrays as parameters, using the first array to set the new palette and the second to store the previous settings. You can now use this routine to handle an unlimited number of palettes; previously it could only handle two.

BLITTING AWAY

A sub-program is required to store the current image in a buffer while the screen is used for text. This calls for a *GET* and *PUT* combination; *GET* is used to store the image into a buffer which needs to be a little more than 32,000 bytes long. The routine will then restore the palette to the *oldpal()* settings and clear the screen using *CLS*. *GET* takes the screen dimensions as parameters which can be obtained using the *SYSTAB* statement, a useful command that is implemented in HiSoft BASIC. The full variables list is found in the manual.

The *SY*Stem *TAB*le works by reading values directly from the table using *PEEKW*. To obtain the screen values you must include the GEMAES library in the startup code and *PEEKW* the 44th and 46th values in the table. The values returned are 319 and 199 for low resolution, or 639 and 199 when running in medium resolution.

The sub-routing *namefile* handles the text input. Once you have entered the file name, the image needs to be copied back to screen before saving. The new version of sub-routine *save* along with the rest of the program is found in the cover disk listing. Notice how the variable *fi$* is passed by reference to *namefile* so that the routine can modify it.

Since the file may not yet exist, *FNfcreate&* is called to create a file with the given name. Attempting to open a non-existing file simply fails. The loading routine should now use the new format of *xsetpalette*.

```
Current file name:                CLOWN.PI1
Please enter new name? CLOWN2.PI1
```

The new save routine "blits" the image away and clears the screen for user input. This way the image remains intact and can be copied back to the screen.

```
19_2.PRG
Compiled With HiSoft BASIC
Degas file name? sample.pi1
Degas file name? sam.pi1
Degas file name? erdbeere.pi1
```

Naming the files for the slide show. GEMDOS does not differentiate between upper and lower case letters.

SLIDE SHOWS

How about writing a slide show utility? The idea is simple enough – first let the user enter more than one file name and then load and display the files one by one. We already have most of the routines for a slide show program. The only change required is to sub *load* so that it does not set the palette. Simply remove the relevant line from the sub-routine. The startup code is identical; create arrays as before and include all the necessary libraries as in listing 2.

The standard program listed here only loads three files although it is quite straightforward to include as many as you like. The sub-routine *wait_for_click* waits until any mouse button is clicked and is used to let you call up the next image or quit. As it is not advisable to quit from inside a sub program or a function, a flag is used instead. Flags are standard variables and are used to indicate status, a program end request in this case.

Wait_for_click shares the flag *finished* with the rest of the program. Like any other variable, the initial value of the flag is zero and is only changed when you click on the right mouse button. When control returns to the main loop the *IF finished...* condition is met and the program ends. Otherwise it will loop indefinitely, loading and displaying the images.

Listing 1

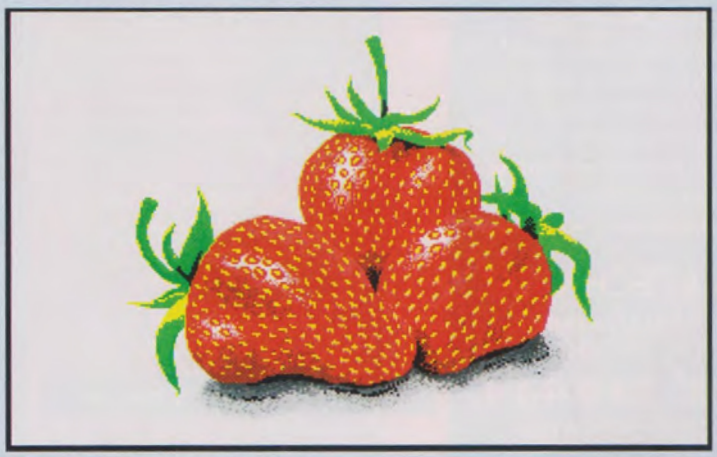
```
'a custom setpalette routine v2

SUB xsetpalette(newpal(),oldpal())
STATIC i
FOR i=0 TO 15
  oldpal(i)=FNsetcolor(i,newpal(i))
NEXT i
END SUB
```

Listing 2

```
'a slide show prototype

'start of program

WINDOW FULLW
CLS
MOUSE -1

'this sub is used to control the slide show
SUB wait_for_click
SHARED finished
STATIC but
DO
  but=MOUSE(2)
LOOP UNTIL but
IF but=2 THEN finished=1
END SUB

'enter names of files to load
INPUT "First file name";fi1$
INPUT "Second file name";fi2$
INPUT "Third file name";fi3$

'main loop
DO
  load fi1$
  xsetpalette image_pal(),sys_pal()
  CALL wait_for_click
  IF finished THEN EXIT LOOP
  load fi2$
  xsetpalette image_pal(),image_pal()
  CALL wait_for_click
  IF finished THEN EXIT LOOP
  load fi3$
  xsetpalette image_pal(),image_pal()
  CALL wait_for_click
  IF finished THEN EXIT LOOP
LOOP


xsetpalette sys_pal(),image_pal()

SYSTEM
```

The slide show switches from one picture...

...to the second of your selection...



...and finally to the third!

NEXT MONTH

The slide show program is well under way. Next time we will take a close look at a set of useful GEMDOS functions that enable the program to automatically scan a disk or a folder for .PI1 files and load them in succession.

Until then you are most welcome to send in your questions or requests to *ST Review* or contact me via email at ogal@cix.compulink.co.uk.

NEW COMMANDS

***SYSTAB*: This BASIC command is a useful legacy of ST BASIC. It allows access to various GEM variables by PEEKing into the table. The format is; PEEKW(SYSTAB+table offset).**

***PEEKW*: A BASIC function that reads a word (two bytes) from the specified memory location.**

12.1

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GETTING MORE FROM EASY MONEY

Enjoying last month's main cover disk program? Want to use more of the facilities? Colin James explains how...

Easy Money, from Orpheus Systems, is an easy-to-use, feature-packed personal finance package. Anyone who has bank and/or building society accounts will find it a major boost to tracking their financial position and making intelligent predictions.

Last month, we gave the program away and printed the first part of a two-part tutorial. If you bought last month's magazine and haven't got to grips with *Easy Money* yet, why not give it a spin now?

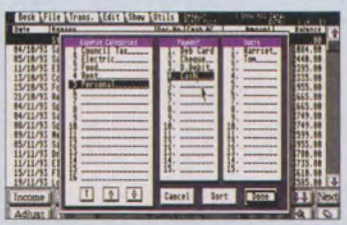
If you didn't see last month's magazine, but would like to make use of this excellent program, see the bottom of the page for ordering a back issue – then you can catch up with the second part, which starts right here!

USE IN REAL LIFE

If you followed last month's first part of the tutorial through to the end, you should now have a file called MYFILE.PAC (or whatever other name you chose for it) which has two users called Tom and Harriet, two accounts called B.Soc and Current, four expense categories – Council Tax, Electric, Food and Rent – and three methods of payment – Cheque, D.Debit (direct debit) and Deb Card (debit card).

There should be a total of 43 transactions in the main ledger, the scrollable list of transactions that appears as the default screen when you load a file. To check that the transactions have been entered correctly, choose **Cash Balances** from the **Show** menu, set the From: and To: dates to 10/04/94 and 21/04/94 respectively, then click on **Calculate**. The **End Date** figures should show you have .00 in Unspec., 750.00 in B.Soc and 10905.00 in current, giving a grand total of 11655.00. Click Done when finished. Check your transactions if your results differ and make any necessary corrections.

Now, before looking at some of *Easy Money*'s more advanced features, we'll add another account and several more transactions so that the program has plenty of data to work on. Go the **Utils** menu and choose **Set Cash**. Below B.Soc and Current, on line 3 of the window that appears, type Cash. This will be for all the cash transactions performed by Tom and Harriet, as they wish to keep a closer watch on where their money goes! Click Done, then pull down the **Utils** menu again, and this time choose **Set Names**.



Adding Personal to the Expense Categories, and Cash to the list of Payment methods.

On line 5 of the **Expense Categories** panel, type Personal, and on line 4 of the **Payment** panel, type Cash, then click Done. Now click on **Transfer** near the bottom of the screen. In the box that now appears, enter the information as follows: Date – 04/11/93, Amount – 250, From – Current (choose from the list that appears when you click the arrow), To – Cash (again, choose from the list), Reason – Spending Money, By User – Harriet (choose from list). Voucher No. is irrelevant so leave this field blank.

Now repeat the procedure, but this time enter the date as 08/11/93, the amount as 300 and the user as Tom.

Tom and Harriet now start to spend their cash so, after clicking the **Expense** button before each entry, enter the following transactions to keep track of their cash spending for November:

- Date – 09/11/93, Amount – 150, Reason – New Binoculars, Category – Personal, Payment – Cash, From Cash – Cash, By User – Tom
- Date – 11/11/93, Amount – 175, Reason – Dress for office dinner, Category – Personal, From Cash – Cash, By User – Harriet.
- Date – 15/11/93, Amount – 125, Reason – Flash unit for Camera, Category – Personal, Payment – Cash, From Cash – Cash, By User – Tom
- Date – 29/11/93, Amount – 99.99, Reason – Christmas presents, Category – Personal, Payment – Cash, From Cash – Cash, By User – Harriet.

One transaction we have not performed so far is an Adjustment, so we'll do one of these now. Let's say Tom lost his wallet containing £25 cash. Click on the Adjust button at bottom left of the screen, then enter the following: Date – 19/11/93, Adjust Cash – Cash, By Amount – -25 (be sure to get the minus sign in there), Reason – Lost Wallet, By User: – Tom. Click Done, and the loss is

Poor old Tom's lost his wallet, and has to make this cash adjustment to keep the books in order.

Entering the data for the transfer of £250 from the Current account to the new Cash account.

MISSED THE OCTOBER ISSUE COVER DISK WITH EASY MONEY AND ST DOODLE?

No problem – just turn to page 98 for information on how to order back issues.

accounted for. Now for another Transfer of money to bring Tom and Harriet's holiday fund up to a more useful level. Click the Transfer button and enter the following: Date – 02/12/93, Amount – 800, From – Current, To – B.Soc, Reason – Holiday Fund, By User – Harriet. Leave Voucher No. blank. Tom and Harriet have now performed quite a number of transactions, but let's say they are particularly concerned with two areas; their cash spending and their holiday fund. Now, for a demonstration of how they can ask *Easy Money* to show particular sets of transactions to pinpoint certain areas, take a look at the Step-by-Step guide, "Let's go to the Show..."

FINAL HINT

If you save your file as CURRENT.PAC it will load automatically whenever you start *Easy Money*. To preserve the original CURRENT.PAC file created by Orpheus Systems and included with the *Easy Money* program, rename that file first. You can do this either by using **Rename File** in the *Easy Money* program, or in the traditional way from the Desktop.

LET'S GO TO THE SHOW...

One of the most powerful aspects of *Easy Money* is its ability to show you just what you want to see, and to ignore everything else. Here's an example of how to make use of this great facility:

❶ Click on the **Show** button, or pull down the **Show** menu and choose Show...

❷ In the large dialogue that appears, click on **Memory** in the top line to highlight it, then, with the exception of style 0 which cannot be edited, clear any existing memory styles out of the scrollable list that appears when you click the downward pointing arrow on the right. You will see that you can have up to 32 styles in the list – each style is user-defined, and will give you a particular kind of view of as many kinds of transactions or accounts as you wish.

❸ Having deleted any existing styles (the quickest way is to press the <Esc> key with the cursor in the item to be deleted) type Cash – Nov as your own style number 1.

❹ In the next line, set the from: date to 01/11/93 and the to: date to 30/11/93.

❺ In the Include and Show part of the box, highlight **Exp. Categories** and **Final Summary**, and on the Title line type a suitable title, such as *Cash Account Transactions – November 1993*.

❻ Leave all transactions highlighted in the Show Transactions section, and in Show Data with Parameters: select **With Cash Balance** and choose **Cash** as the Cash AC.

❼ Now, under Print List to..., click **Screen**, then **Proceed**, and you will see a list of the Cash account transactions for November, followed by a balance summary for the chosen period,leaving a minor mystery to be solved – was it Tom, Harriet or a joint effort that led to a £24.99 overspend, and where did the extra spending money come from?

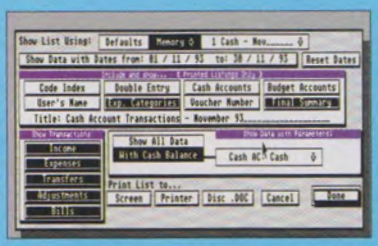
❽ Hit any key to return to the Show... dialogue, and enter B.Soc – Year End as memory style number 2. Leave the from: date as it is, but change the to: date to 31/12/93 and change Cash AC: to B.Soc.

❾ Type in a different title – *Building Society Holiday Fund at Year End 1993* will do nicely.

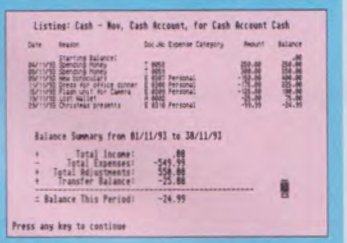
❿ Now click the **Screen** option again, followed by **Proceed**, and you should see that the balance for B.Soc is £1550, the result of two transfers.

Hit any key, then click on Done to return to the main ledger. Notice that the ledger displays only the information requested in the Show... dialogue.

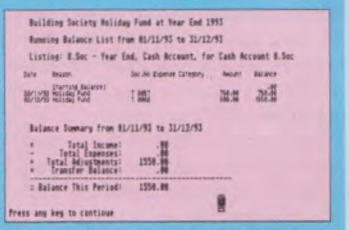
To see all transactions again, choose **Show** to **Defaults** from the **Show** menu. To return to the currently selected memory style in the Show.. dialogue, go to the **Show** menu again and choose **Show** to **Memory**.2



How the Show dialogue should look when you've set up the new Cash – Nov style to show all Cash transactions by Tom and Harriet in November. Add your own title if you wish.



Who's the guilty party? A £24.99 overspend revealed in the Cash account figures for November...



The Holiday Fund in B.Soc is coming along nicely – something better than a week in Blackpool next year, at a guess...

EASY MONEY OFFERS

As you've seen from our tutorial, *Easy Money* is an easy-to-use program that really can put you in control of your personal finances.

But tutorials on their own can never unlock the true power of a program. So *ST Review*, in conjunction with Orpheus Software, can offer you the 32-page manual at just £7.99! There's also a substantial upgrade to *Easy Money* in the form of *Easy Money Plus*. This offers all of the standard features plus Macros for automating any procedure, Graphs for showing any kind of information visually, Budget for handling a specific sum of money, and support for laser and inkjet printers. All in all, a very worthwhile upgrade for just £19.99.

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Jon Ellis continues with his C tutorial by expanding on last month's file deletion program.

TRASH

The simple file deletion program from the last tutorial read in a filename from the user and then deleted that file. On its own this isn't terribly useful, but it will do as a foundation for building something better. In this tutorial, you'll see how to alter the program so it can delete many files at once – great for coping with all those .BAK files created by *1st Word Plus*!

You'll find the listing on the cover disk as *DELETE2.C*. This should be compiled and linked as usual from the Workbench. To try out the program, exit the workbench and use the Desktop to create a new folder called TEST.

Copy the compiled program, *DELETE2.PRG*, into this folder, along with the junk .BAK files from the cover disk.

Double-click *DELETE2.PRG*, and enter *.BAK when prompted for the file specification for deletion. When the program finishes, all the .BAK files will have disappeared, but *DELETE2.PRG* will still be there.

A word of warning: do be careful with *DELETE2.PRG*, as it will delete anything you ask it to, even if it wasn't what you really intended! In particular, entering *.* as a specification will erase all files in the current directory – probably not a good idea!

HOW DOES IT WORK?

The difference between *DELETE2* and last month's program is the ability to understand wildcards. Because a specification containing a wildcard can be expanded into many filenames, we need some code to find each matching filename in turn, along with a loop to call this code until all filenames have been processed.

Look at the listing. The first unfamiliar line is an extra **#include** line. The program uses a couple of library functions whose declarations are not in the *STDIO.H* file.

The next new thing is a rather odd-looking variable declaration: **struct dta dir_info**. This line defines a structure variable. Look at the box on structures to find out what these are all about. Now you know about structures, you should be able to tell that this line is declaring a structure variable called "dir_info" which is constructed according to the template called "dta", defined in the header file **IO.H** which we **#included**

WILDCARDS

The idea of the wildcard in filenames will be familiar to anyone who's used DOS on a PC. It's a way of specifying a group of file names in one go.

The "?" symbol is used to match any single character in a filename. As an example, DELETE?.C matches DELETE1.C and DELETE2.C. The "*" symbol is used to match many characters at once, and its use is a little more complicated.

Most filenames are made up of two fields: an 8 character name, and a 3 character extension like TXT or DOC. The two parts are separated by a dot.

The "*" symbol is interpreted as being as many "?" symbols as are necessary to fill the field. Therefore, *.BAK will match any filename having a .BAK extension; READ*.* will match README, READ_ME, READ.ME and READ_ME.1ST amongst others. *.* matches all files.

MIX 'N' MATCH

In an array, there are several elements of the same type that are grouped together. C also provides another similar way of storing data, which has no parallel in BASIC. The structure is a way of linking items of data together, even though they might be of different types. You can think of it as a single variable which can hold many different pieces of data at the same time.

This flexibility enables many common programming problems to be solved very neatly. As an example, consider a database designed to hold information about a company's employees. At a simple level, the database might need to include an employee's name and their salary. In BASIC, we would need to have two separate arrays; one to hold the names (a string array), and the other for the salaries (a numeric array). In C we would define a structure to contain the name and the salary, and then have an array of these structures.

To define a structure, we simply describe it to the compiler, and give it a name. Continuing with the example above, the structure might look something like this:

```
struct employee {
  char name[40];   /* The employee's name */
  int salary;      /* Their salary */
  };
```

The **struct** keyword tells the compiler that what follows is a structure definition. "employee" is the name of the structure, and the definition is enclosed within the curly brackets. This structure contains two members. The first of these is an array of 40 characters called "name", and the second is an integer called "salary".

What we have done so far is to define a template for our data. Once defined, the template can be used to actually make variables. To do this, we use the **struct** keyword and the name of the template again:

```
int list_workers()

{
  struct employee worker;
  struct employee workforce[500];

  /* Do the processing here */
}
```

This example defines a function called "list_workers()", which returns an integer. This function declares two variables, one called "worker" which is a structure made according to the "employee" template. The other variable, "workforce", is actually an array of 500 structures of the same type. This array could be used to hold details on all the workers employed by a company.

Defining structures is only half the story. How do we use the information contained within them? This is easy. Just as each structure template has a name, so each member within the structure has a name, supplied in the template definition. To use a member of a structure variable, we use the dot operator "." followed by the name of the member:

```
worker.salary = 18000;
```

This line sets the member "salary" in the "worker" variable to indicate a salary of £18,000.

Using this knowledge, we can write a loop to print out the details of each employee in the workforce. Assuming that we have previously declared an integer variable "f", and another called "workforce_size" which specifies the number of employees, the code might look something like:

```
for (f=0; f<workforce_size; f++)
 printf("%s earns £%d per annum\n",
  workforce[f].name,workforce[f].salary);
```

Notice that the loop runs from 0, and continues while f is less than (but not equal to) the number of employees. Remember from last time that in C, array elements are numbered from 0. Also, we have used C's flexibility about spacing and ends of lines to break up the **printf()** line, which would otherwise be very long. Although it looks to us like two lines, the compiler treats it as one line.

Structures are one of the most useful features of C. You will come across them again and again, particularly when we learn how to write C programs that use the GEM interface.

'EM ALL!

earlier. The actual definition is shown in the listing on the far right of this page.

The **long** keyword defines an integer variable which can hold larger values than an **int**, the sort that you're familiar with. To turn the wildcard specification into proper filenames, we use two library functions: **findfirst()** and **findnext()**. Details on how to use them are given in the *New library functions* box. The program calls **findfirst()** to initialise the search for filenames matching our specification and to get the first name. If this fails, because there are no files that match the specification, nothing more is done. Notice that the **if** statement tests the result of the **findfirst()** function call directly. In the past, we have assigned the result of the function call to a variable, and then tested the variable. In this case, since the only time we need the function result is when we make the test, we can do without the variable so saving space.

If our search is successful, we enter a loop to delete a file, and then find another one. Notice the use of curly brackets after the **else** to indicate that this applies to a whole block of statements.This block is made up of a single **do-while** loop, one of C's three basic loop constructs. You've used the **for** loop already – more details on the others can be found in the *Loops* box.

The **do-while** loop is very simple. The file whose details are held in the "dir_info" variable is deleted using the **remove()** library function, and a success or failure message printed. **findnext()** is used to locate the next file matching our specification. If this search is successful, the **while** test is satisfied, and control returns to the top of the loop. If the list of file names is exhausted, the loop terminates.

```
/*
** Modified version of file deletion program, that
** can accept wild-cards.
**
** by Jon Ellis, 21 July 1993, ST Review 19
*/

/*
** Include library file declarations...
*/


#include <io.h>          /* Non-ANSI IO functions */
#include <stdio.h>       /* ANSI standard IO */


/*
** Declare the functions defined in the program...
*/


void main(void);


/*
** The program starts here...
*/

void main(void)

{
  int result;
  char files[128];
  struct dta dir_info;

  printf("\033EFile Deleter version 2\n\n");
  printf("Enter specification for files to be deleted: ");
  gets(files);
  if (findfirst(files,&dir_info,0) != 0)
    printf("No files meet the specification!\n");
  else
    {
    do
      {
      if (remove(dir_info.filename) != 0)
        printf("Attempt to delete %s failed\n",dir_info.filename);
      else
        printf("%s deleted OK\n",dir_info.filename);
      }
    while (findnext(&dir_info) == 0);
    }
  printf("Press RETURN to exit: ");
  getchar();
}
```

```
struct dta {
   char attrib;                /* File type bitmap */
   long time;                  /* Time file was last modified */
   long length;                /* Size of file in bytes */
   char filename[13];          /* Name of file */
   char extra[22];             /* Private working area - reserved */
   };
```

POINTERS

The "&" symbol in the calls to **findfirst()** and **findnext()** is your first sight of one of C's important concepts – the pointer. We'll go into this topic in greater depth in later articles, but for now a brief introduction will suffice.

When a variable is passed to a function, its value is copied into a temporary storage area called the stack. The function reads its input data from the stack, and then processes it. This seems simple enough, but what happens if the variable is very big, like a large structure or an array? It would be wasteful of space, and slow your program down, to have to duplicate big variables every time a function was called.

To get around this problem, C adopts a different strategy for such variables (which are called aggregate variables). Instead of getting a copy of the value, the function is given something that tells it where to find the variable. This information is called a pointer to the variable.

In concrete terms, the pointer is simply the address of the variable in memory. In C, the address of any variable can be obtained by prefixing the variable name with "&". Going back to our deleting program, we pass the address of our "dir_info" variable to **findnext()** and **findfirst()** by writing "&dir_info" in the argument list. Obviously, these functions know that they are going to get a pointer rather than a variable value, and act accordingly.

Hang on a moment – in last issue's tutorial we used the **gets()** function which expects a character array as input. How come we didn't use the "&" character then? Surely, the character array is an aggregate variable, and therefore we must use a pointer ?

Yes it is an aggregate, and yes, we do need a pointer. For arrays, this is usually a pointer to the first element in the array. So, if "files[0]" is our first element, "&files[0]" would be the pointer. However, in a useful piece of shorthand, C allows us just to write "files". In other words, the name of an array, with no element number in brackets, is the same as a pointer to the first element. So, there's no contradiction here!

DOING THE LOOP

We've already met one of C's looping constructs, the **for** loop. In this program we feature another construct: the **do-while** loop. The format of the loop is:

```
do statement;
while (expression);
```

Remembering that in C, wherever we can write one statement, we can put a block of statements enclosed in curly brackets, the normally-encountered form is:

```
do

  {
  /* Lots of things */
  }

while (expression);
```

As you can probably guess, this construct repeats statement until expression is equal to zero. Since the test comes at the end of the loop, **do-while** loops cause the statement or block to be executed at least once.

In many cases, this effect is not what's needed, so a third type of loop is often used – the **while** loop which has the form:

```
while (expression)
  statement;
```

In this case, the expression is tested, and if it is non-zero, the statement is repeated until the expression becomes false (or equal to zero). Since the test is performed before each execution of the statement, it's possible that the statement will never be executed. You'll see lots of **while** loops in later tutorials.

THANK YOU AND GOODNIGHT!

In this tutorial you've learned about another important control construct, the **do-while** loop, and seen how to use one of C's most useful features – the structure. We've also scratched the surface of a major topic by introducing the pointer.

Finally, another programming challenge. Can you alter our multiple-deleting program so that instead of deleting all files matching the input specification, it prints the name and size of each file? At the end of the list, the program should print the total number of files processed and their cumulative size. A hint: the file length is held in a member of the "dta" structure. This member is of type "long" so you will need to use a "long" variable to hold your running total of file lengths.

NEW LIBRARY FUNCTIONS

findfirst(file_specification,info,flags); This function is not part of the ANSI library, but allows access to an Atari GEMDOS facility. The function is used to find filenames matching a pattern that might include wildcards, like '*.BAK'. findfirst() is always used together with findnext(). The three input variables are: a character array containing the pattern to search for; a pointer to special structure variable of type "dta" (defined in the header file IO.H) to store the results in, and an integer that indicates whether we are looking for normal files, hidden files, folders and so on. The function returns 0 if it has found a file that matches our requirements, or something else if not.

findnext(info); Since patterns including wildcards can be matched by many files, we need some way to move down the list of matching filenames. This is done using the Atari function findnext(). The single input is a pointer to a structure variable of type "dta" which has already been used to find the first matching file using findfirst(). findnext() returns 0 if it has found another match (in which case the answer will be stored in the structure variable), or something else if it has reached the end of the list of matching files.

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Graeme Rutt continues his explanation of all those letters and numbers associated with your modem...

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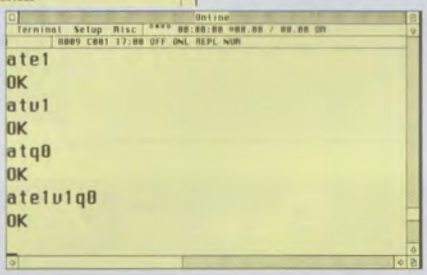
Most modems are controlled via commands, prefixed with "AT", which make them act in a certain way – the Hayes command set. These can change the way data is sent, dial a bulletin board... even turn your modem's speaker on and off.

A HELPING HAND

It is *possible* to type in any Hayes commands each time you load up your comms package, but this is very time consuming. A better alternative is to use the comms program's "init string" or similar for this sort of modem manipulation. The string, packed full of Hayes commands, is sent either when you first run your comms package or just before it dials any on-line service.

The best tactic is to save your changes in the battery-backed RAM that most modems possess as the same set-up is required for most of your comms work. Saving changes is simply a matter of typing **AT&W** into your modem. Whenever you turn on your modem – or reset it with the **ATZ** command – your new settings are used. If you need a slightly different set-up then you can always fall back to the init string.

Using AT&V to show the TKR 1496's Hayes settings.



Hayes commands can be put on a single AT command line.

WHAT YOU SEE...

Let's look at some of the methods used to change the way the modem "speaks" to your comms terminal.

● **ATEn**: Sending **ATE0** will stop command characters being echoed to the screen when you type in AT strings. This is useful if your comms set-up is set to half-duplex or if you'd like a more pleasing display when your comms package ether auto-dials or sends its init string. **ATE1** sets the modem back to echoing characters.

● **ATQn**: This does the same thing for responses sent back by the modem such as OK, ERROR, CONNECT and the like. Setting **ATQ1** will stop your modem sending back these codes while **ATQ0** will make it send them again. This can be used for changing your display or if your comms package requires no modem responses which is rare.

● **ATVn**: An important command that controls the way your modem sends back response codes – as words via **ATV1**, or numbers with **ATV0**. Most comms packages expect to receive words; some packages will work incorrectly if they receive numbers. As an example, the BUSY response code is sent if a telephone number is engaged and your comms package could become confused if it receives the numeric form "7" while expecting "BUSY". Find out what your software expects and configure your modem accordingly.

● **ATXn**: This allows your modem to send certain types of response codes and ignore others. **ATX1** is the basic command; your modem will only return connect codes such as CONNECT 2400, CONNECT 14400 and so on. **ATX2** adds dial tone responses like NO DIALTONE while **ATX3** includes BUSY responses. Finally, **ATX4** incorporates all responses. This is the usual default but some finicky comms programs may have trouble handling all responses, which is why this command is included.

A final word of advice. It is easy to adversely affect your modem by setting it up incorrectly with ill-chosen commands. If you find your modem stops dialling or your comms package stops working, don't despair – either reset the various parameters in your modem manually or send **ATZ** to cause it to reset from battery-backed RAM. If this still doesn't work, there is always **AT&F** which will set your modem to its factory defaults.

Next month we'll look at **ATD**, the Hayes command that dials telephone numbers, and also delve deeper into the rest of the command set. If you have any problems, get in touch with me by e-mailing sabbath@cix.compulink.co.uk.

JARGON JOGGER

Battery Backed RAM – memory used in modems to store configuration data that is stored when the modem is switched off.

Command Characters – modems work in two modes: data mode and command mode. Modems usually return to command mode when no longer on-line and can then receive AT commands.

Half-duplex – comms package setting used for on-line services that don't echo back characters so allowing the comms package to display the characters.

Response Codes – words or numbers that the modem sends to the comms program to tell it that something has happened.

COMMON RESPONSE CODES

Word	Number	Explanation
OK	0	command executed without errors
CONNECT	1	successful connection with remote modem
RING	2	detection of incoming ring
NO CARRIER	3	failure to connect or loss of connection
ERROR	4	invalid "AT" command
NO DIALTONE	6	no dial tone found before dialling
BUSY	7	dialled number is engaged

COMMS ON THE CHEAP

Using comms can be expensive but Mark Baines shows how to keep those telephone bills to a minimum...

In trying to encourage people to go on-line I am often encountered with the familiar retort – "but it's expensive!" However, the only cost incurred by using a free BBS is the telephone call.

The most obvious way to cut costs is to stay on-line for as little time as possible. Most experienced users are rarely on-line for more than half an hour a week, often less. If properly prepared you can get all the latest messages from several networks, upload your replies and download a file or two. So what are the tricks of the trade?

- Find a local BBS. If one doesn't exist, then a long distance call to one BBS offering all your needs is better than using several smaller ones.
- Only log-on at cheap rate time, 6pm – 8am weekdays or anytime at the weekend. Be aware that BBSs will generally lock out normal users at around 3 – 4am to exchange mail files.
- Buy the fastest modem you can afford. The new V32bis models are excellent value for money with speeds of up to 14,400 bits per second. Choose a BBS that can support these speeds. Have data compression and error correction switched on.
- A noisy line with errors on downloads and garbled messages increases costs in re-receiving bad packets of data. Get BT to check your line, but do make sure that you are using a BABT-approved modem!
- Only download compressed files. Download TOS or PRG files if you are sure that they are already compressed via a self-extracting program.
- Always have your terminal program capture buffer switched on. This enables you to re-read your session at leisure when off-line. For instance, in *Freeze-Dried*, go to the **Main Menu** and **Capture SetUp**. Size the capture buffer (to, say, 10,000 lines), set to **Capture Open**, **Full Buffer: Buffer Wrap** and **Save Dropped**, **Flush Upon Exit** and **As: FZDTERM.BUF**. Save the configuration at the Main Menu. After that, the capture buffer will always be on and automatically saved when you exit.

You can read this buffer by using the Scrollback feature or load the buffer file into any text editor where you can also prepare messages to up load when next on-line.

- When you log-on to a new BBS, make sure you read the help screens and bulletins. This will help you get the most from the system. Go through most of the menus and get a files list to download. Off-line, study the menus in the capture buffer – print them off if possible. Use them to prepare what you want to do in further log-ons by writing down the sequence of menu options beforehand. Most systems will let you string these options together in a single input, such as '"q/m/2/3/a" on Turbo boards which avoids all the menus and prompts. Put frequently used sequences on a program macro key.

Write down the names of any files you want so you don't waste time searching for them on-line.

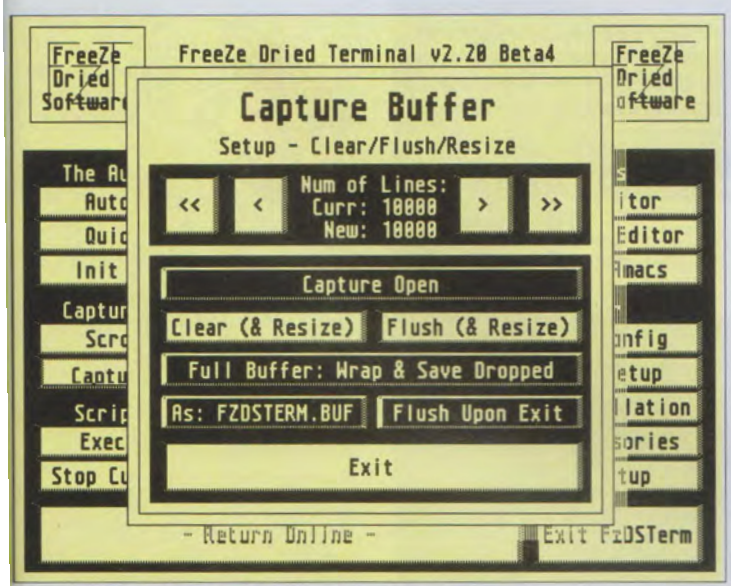
- Absolutely never read messages on-line! Configure the BBS so that you have your regular message areas switched on. Have the Paged Output option switched off and Continuous Scrolling on.

Then with a command like "m/a" you will see all the new messages quickly scroll into your capture buffer to be read off-line.

- Use *Freeze-Dried*'s **Auto-Macros** and the **Auto-Logon** feature, using **Auto Log-On Learn** to teach the system what to do.

If you routinely do the same things then investigate .DO script files. All of these will make most operations automatic, error-free and much faster.

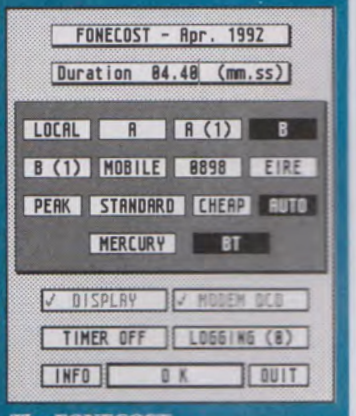
- Only join those conferences you are interested in. Be selective.
- Don't call the SysOp for a chat. If you want to get in touch, leave a message for him/her.
- Use a fast and intelligent file transfer protocol, such as ZModem. Try FModem or YModem-G if you have a fast modem with error correction. If you want to upload and download files in one session then use Jekyll.
- Get to use an Off-Line Reader as fast as you can and find out how to get QWK message files from the BBS. This is the quickest and most convenient way to read and write messages.
- Use a utility to show your call cost, such as *FONECOST*. This way you can see which strategies save money!



Setting up the Freeze-Dried capture buffer.

FONECOST

The *FONECOST* Call Cost Calculator is a versatile accessory that keeps an eye on your modem and logs all calls and the length of them. FONECOST shows the call cost at the top of the screen whilst on-line and logs the details to a file when finished. Written by Richard Gorbutt, it's both BT and Mercury compatible and has a shareware registration fee of just £5.95. You'll find it on most BBSs as FONECOST.LZH; if not, your local PD library will have it. An essential utility for all comms users.



The FONECOST accessory dialogue.

ASK THE EXPERTS

Having problems with your ST? Let our panel of experts help...

SLOW TOS

I have had my TOS 1.00 STFM since its birth in 1986. I am now a university student and rather than buying an unfriendly and very expensive new PC, I use my ST to do reports, essays and project write ups.

Changing from games to doing ordinary boring stuff on the ST has thrown up a few questions:

1. I upgraded to 4Mb using Marpet Xtra-RAM Deluxe and now the computer pauses for several seconds after launching a programme before execution. Why? This is making the boot up a slow process as I install several utilities.

2. I built myself a hard drive with the ICD SCSI host adapter, and a 40Mb SCSI-embedded drive which I have formatted into four partitions. Although it works perfectly, why is it slower than I had expected, being used to PC and Mac hard drives? It is barely faster than a floppy for some file operations!

If, as I expect, the answer to the first two questions is that my operating system is responsible to upgrade my TOS, is there any way that I can upgrade it without any hardware modification? I don't like being without my computer and I am pressed for cash at present. Is there any PD program that will replace or improve TOS? Does *Gemini* help, for instance?

I am using *Microsoft Write* at the moment. How does it fare under *SpeedoGDOS*? How can I translate from its (or any other ST) document format to a standard PC graphics format, again for pretty printing?

Paul Hamer, Birkenhead, Merseyside

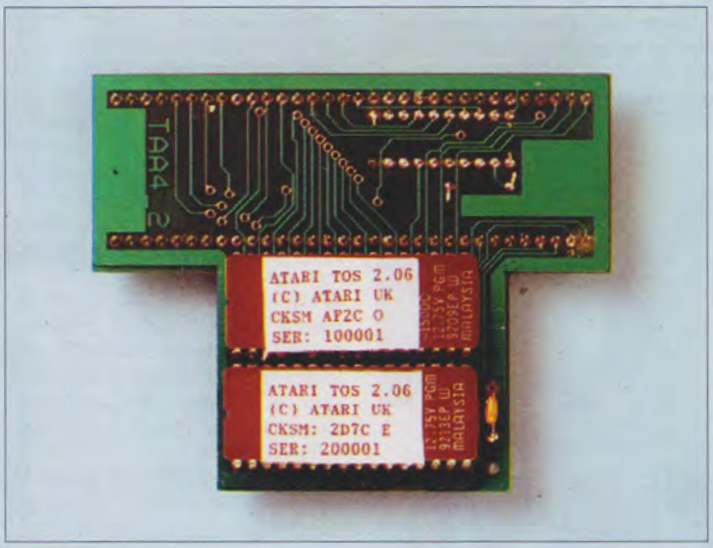
You are quite right to suspect your TOS version to be the source of the slow running of your hard disk. The problem is that when you load any AUTO folder programs, the system clears all of the available memory above the last address before loading each file. The situation is made worse by having four megabytes of RAM. A desktop replacement program like Gemini can only replace the system functions after they have loaded, so it won't help you here.

There is, however, an essential shareware program called Pinhead that is placed in the AUTO folder first (using Autosort or a similar sorting program or by creating a new AUTO folder and copying it first). This will dramatically improve loading times for all files.

The real answer is to upgrade your TOS. A hardware upgrade to TOS 1.04 costs £49.95 from System Solutions (Tel: 081-693 3355) and is a simple matter of swapping the ROM chips. TOS 2.06 has many advantages over any other version available for the standard ST/F/M/E, and is available as an official, solder-in upgrade from Compo (0480 891819) for £69.95.

The only way to transfer files for "pretty printing" from an ST word processor to the PC is to save the text in ASCII form and then reformat it on the PC. Only a few packages actually have transferable files, like Timeworks, which is available for both machines. Write was given away with some early packages of the ST and never sold commercially, so it is now obsolete on the ST and it's unlikely that it will fare very well with SpeedoGDOS. **Tony Kaye**

Upgrading to TOS 2.06 is certainly a worthwhile experience.



PROSPERO MASTERCLASS

Problems setting up Prospero C? Blame the editor...

First of all, let me congratulate you on a very interesting magazine. However, I had a couple of problems with the *Prospero C* program.

The first one was setting the drive path names. I set the dialogue box as instructed on page 10. After doing this I loaded MAXBREAK.C. Then to compile and link I got the message: *Unable to execute C1 OVL. File not found.*

I started the program from the coverdisk and it didn't show this message when I followed the same procedure. Was this something to do with the setup?

Could you please explain how the program finds the files required as is not clear to me, and I'm sure a lot of others do not understand as well. I would be very interested to know as there are other programs that use this type of dialogue box.

The other problem is when I ran the Maxbreak after putting back the .CFG file as original. After doing this I got the message: *Fault at line 11. 1 include <stdio h>.*

P W Ryan, Hayes, Middlesex

You're quite right about the problem being to do with the setup. Due to a minor glitch in the editing of the piece for the magazine (my fault... Ed), the set up instructions were not quite as clear as they might have been. To get it working, take a clean disk and copy onto it all the files from the PROSPERO folder of the cover disk. Keep the cover disk somewhere safe. Your working disk should now look like this:

This is what your disk should look like...

Set the dialogue box up as described in the original article, and all will be well. Of course, if you want to run the compiler from drive B, you'll have to change all A: to B:. **Jon Ellis**

EMULATION IN BLACK AND WHITE

I own an Atari STE (upgraded to 1Mb), and I run it from a colour TV. Recently I have seen a number of disks which are for high resolution only, including *LabelCad* (PD Zone, issue 17) and *JC Calendar* (PD Zone, issue 14).

I have heard of something called a mono emulator that will allow me to run these programs on my TV. Please could you explain what a mono emulator does, how to install one, and if the quality of the print out will be affected by the use of one?

R Hall, Eltham, London

A mono emulator is a small program that allows you to load and run most high resolution programs on a colour screen.

However, the results are not perfect and are of little serious use as neither a television or a colour monitor can really handle the resolution required.
There are a couple of mono emulators available in the public domain but the only commercial emulator is The Monulator, available from Goodman International. They are all loaded by placing them in an AUTO folder on your boot disk and resetting the machine.
To address your last point, the quality of your printout will be totally unaffected as the difference is in the screen display and not the printing side of the ST.
Tony Kaye

WHERE'S FSTPRINT?

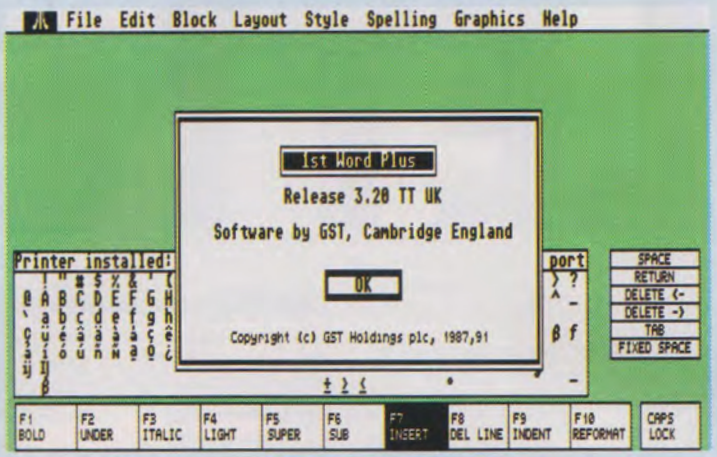
In the March issue of *ST Review*, Andrew Wright referred to the *FSTPRINT* patch utility (page 85).
I can't find it anywhere in any of the catalogues of the major PD houses. Where can I get it from?
Peter Selfinch,
Wokingham, Berks

FSTPRINT is one of those small, very useful utilities that lurks on disks other than those bearing its name. It's such a small program that it usually gets bundled in with other printer utilities.
You can get disk number GD1821 (£2.95) from Goodmans International. Tel: 0782 335650. It has a selection of nine and 24-pin printer utilities to go with the program you want.
Tony Kaye

LAST WORD ON FIRST WORD

I recently telephoned your back issues department enquiring as to whether you had any issue 5s left with the free *1st Word Plus* disks attached. They said that there weren't any left and the issue wouldn't be reprinted.
I am desperately in need of the *1st Word Plus* disk and was wondering if you know of anybody who could give me a copy of the disk and instructions. I would be willing to pay any costs.
Chris Walton, York, Yorkshire

Issue five was very popular and, like a lot of the earlier issues, has completely sold out. This means that both the magazine and cover disks are unavailable. The commercial software on cover disks is not public domain and so continue to be protected by copyright. Once the issue is sold, it is illegal to copy the disks for any reasons other than your own backup purposes.
So the answer to your question, Chris, is no – unless someone is willing to sell you the magazine complete with the original disks. Any offers?
Tony Kaye



1st Word Plus may have been on a cover disk but it's still a commercial program.

MORE MEMORY

I thank your magazine for reconciling me with my ST after a long and unproductive break. Of all the magazines on the shelf, yours has the best "attitude".
I am thinking of buying a two megabyte upgrade for my STE. I currently have four 256K SIMMs rated at 100ns access time. Would I be able to keep two of these installed to get a total of 2.5 megabytes? Also, would the speed of the memory I buy affect the speed of my system using a 16MHz accelerator?
Duncan Walduck,
Hanwell, London

The MMU chip in the STE will not recognise this memory configuration – it is limited to one, two or four megabytes. However, you can use two of your 256K SIMMs, along with a pair of 1Mb ones, and a small Auto folder program that will allow you to get 2.5Mb in total. The programs is called TWOMEG.PRG and is available from the ST Club (0602 410241) on disk TMP.51.
Provided that SIMMs are rated at 120ns or faster, they will work quite happily on the ST.
Vic Lennard

PROBLEMS OF EPIC PROPORTIONS

Could you please help me with a problem that has been causing me a headache for a couple of months?
I joined a computer games club that was advertised within the pages of your magazine, and ordered my three introductory games, one of them being *Epic*. But on loading this game I was confused. The first disk loaded the soundtrack and then prompted me to insert the second disk and press <Return>. But on doing this I waited and waited, but nothing happened. I tried a couple of times, but the result was the same.
Not knowing anything about computers, I sent back the game with a letter explaining why. A couple of weeks later, I got a replacement from the club saying they were sorry that *Epic* was defective. But on receipt of this game, not even the soundtrack would load. Again I sent the game back with a further letter explaining why I was returning it.
But, since then, I have borrowed it from a friend of a friend only to find that this would not load either. My friend has told me that he has played this game on his mate's computer so there is nothing wrong with the game. What is going on? Is it my computer or is it the game? I have an Atari 520 STE which I upgraded to 1Mb. It has TOS. 1.62 and was bought a year ago. I am in desperation to know if I have a faulty machine of not.
Colin Malone, Whiston, Merseyside

I spoke with the programmer of Epic, Russell Payne, who informed me that he actually wrote it on a one megabyte STE and says that you should have no problems running it.
A complete memory check is carried out when first loading and the sound is then loaded into the higher 0.5Mb of memory. If there is a fault with the RAM in your machine, then it could hang up at this point. To check, remove the half megabyte upgrade and try the game without the digitised sound. If it runs, then the problem is either with a fault in your upgrade chips. Alternatively, they may not be properly in place. **Tony Kaye**

DENSE SITUATION

Can you help me. I know this sounds silly, but please explain High Density disks to me? I understand that a double sided disk can hold twice as much as a single sided one, but where is the information stored to double that amount?
Tony Certon, Birmingham, W. Midlands

HD disks are constructed differently from single and double sided ones. The magnetic material particles are finer and the gaps between them are smaller. The disk also spins faster, all resulting in you being able to store double the amount of a double density disk (1.44 megabytes instead of 720 kilobytes).
Because of the differences, it is not recommended to use HD disks for double density storage.
Tony Kaye

GOT A QUESTION?

Can our panel help you? If you have a problem and would like our highly respected panel to solve it for you, write to Ask The Experts, Atari ST Review, Europa House, Adlington Park, Macclesfield, SK10 4NP, stating the nature of your question on the outside of the envelope. Please note that due to the volume of mail we receive, we are unable to guarantee a reply, although we will do our best to answer as many as we can. Please do not enclose a stamped, addressed envelope as we cannot answer personal mail. We are also unable to take telephone enquiries.

Time for an interesting read – if you have a comment to make, drop a line to me, Vic Lennard, and you could find a £25 cheque in the post for your troubles...

LETTERS

GOT SOMETHING TO SAY?

***ST Review* is your magazine and putting pen to paper gives you direct contact with us. As editor, I read every letter that you send and carefully select the ones for publication. If you want to complain, fine – but mindless insults will not find their way into Letters...**

It may simply be that you have a constructive criticism about an article in *ST Review*, or that one of our columnists has inflamed you with his honesty. Whatever the reason, drop a line to me, Vic Lennard, at:

Points Of View,
Atari ST Review,
Europa House,
Adlington Park,
Macclesfield, SK10 4NP.

Please do not send stamped-addressed envelopes as personal replies will not be entered into. All mail received is considered for publication unless otherwise stated and we reserve the right to edit letters where necessary without altering the context.

FALCON FACTS

I am writing to share my experience of a false stigma surrounding the ST Falcon, indeed, all of Atari's 680x0 range of computers. I experienced this when word got around that I intended to purchase a Falcon. After many years of owning an aging STFM, I was confronted with a barrage of people proclaiming that it was foolish to purchase anything but an IBM PC compatible or an Apple Macintosh.

I managed to find out that the reason for this was the lack of serious software for the Atari 680x0 range, and that they have no future! I was infuriated by this. I found that the Atari had an extensive range of all types of software at very reasonable prices. I fought back by sending a fax of the Falcon's impressive specifications to the main offender. She then proceeded to admit that the Falcon was faster and had better graphics and sound capability than any PC or Mac for anything near the price, but amazingly still said that the PC or Mac would be a better buy, proclaiming that speed does not matter!

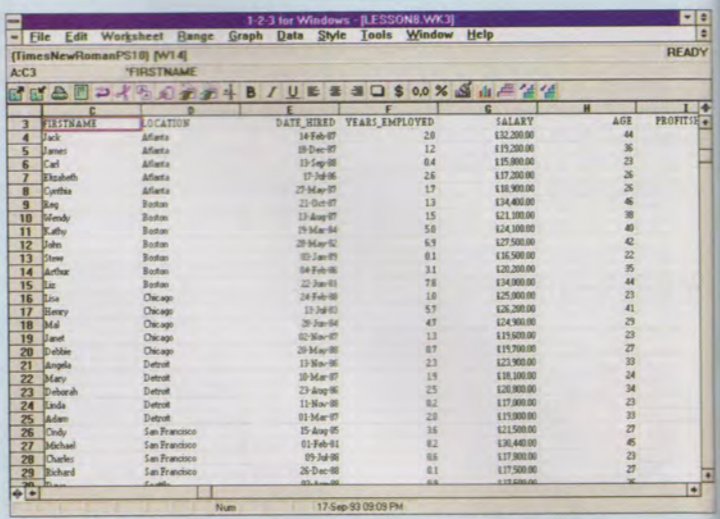
Well if speed doesn't matter, what does? I, of course, have every intention of going ahead with my purchase of a Falcon. It seems that these people seem to buy one of these inferior machines like those famous mindless "Lemmings". We must all fight this stigma and put the Falcon where it belongs – in every home and office in the Western world!

Ian Clarke, Ireland

In many respects, I agree with the sentiments you express. While the incessant arguments concerning PC vs Mac continue, the Falcon never gets the time of day. However, Ian, I cannot agree with your comment about wishing to see a Falcon "in every home and office in the western world" – the professional software necessary for an office environment certainly isn't available for the machine. Where is the database comparable with DBase 4, or a spreadsheet program with the power of Lotus 1-2-3? Further, why should every home have one? The Falcon isn't the computer for the family environment, simply because it's too expensive and will only run a minority of games.

So where does the Falcon fit in beyond the enthusiasts like you and me, who will buy it purely because they love the ST and want a more powerful computer in a similar vein? Atari certainly don't know, hence the lack of positive marketing in the UK to date, although the dealer training days detailed in this issue are certainly a move in the right direction. Even then, why was a company such as 16/32 Systems left out when it distributes 68030-specific programs such as Xenomorph 2?

My personal opinion is that the Falcon's DSP lends itself to two markets; music, with direct-to-disk recording of digital audio, and video, where the DSP can be used for real time effects. No matter how powerful the Falcon is for normal use, it is difficult to see why people are going to pay over £800 for such power unless they can make use of it.



Despite the Falcon's power, software that could compete with the serious PC offerings simply does not exist.

FIZZ-DIZZ AND THE FALCON

I am writing to you concerning your PD Zone on page 68 of the July issue of *ST Review*. Nial Grimes states that "*Freeze Dried Terminal* would feature high on any self-respecting Falcon owner's shopping list but unfortunately seems unable to talk to the new serial hardware".

I own a Falcon and have found a way to use Fizz-Dizz with a Falcon 030 computer. In FZT's documents, it mentioned a fix for the TT computer. Figuring that I had nothing to loose by trying this fix, I was pleasantly surprised when it worked for the Falcon.

It stated that the Carrier Detect line is reversed in the TT and this also appears to hold true for the Falcon. The only thing that seems wrong is that when in Terminal Mode, the status line on the bottom indicates that you are "off-line" when you are really "on-line". However, the rest of the program is quite usable except for about a 30 second delay on dialling out.

I have a multi-sync monitor and run the program in RGB, 80 column mode, with a switch I installed on a VGA adaptor to get the best use out of my monitor. I believe that the program runs in ST medium resolution compatible mode.

Please print this to let other Falcon owners know that the *Freeze Dried Terminal* does indeed work on a Falcon.

Manuel Perez Jnr, Los Angeles, USA

Consider your information passed on. Nice to see letters coming in from our relations across the water...

Fizz-Dizz – Falcon-compatible after all?

PIRACY BACKLASH

I am writing with reference to Mr Bryant's letter from issue 15. The words "shock", "horror" and "disgust" must be applied. How can Mr Bryant possibly try and justify what he calls "innocent copying"? Piracy is theft, a criminal offence and should never be put into practice.

There are many ST users out there who manage to save up their money to buy software without having to resort to "innocent copying". The ST software market needs the support of its users and we may then eventually see a drop in its prices. Support your ST and don't turn a blind eye to software piracy.
D Southworth, West Midlands

I quite agree with your point about widespread piracy Vic. Of the four people in this town I know who have *Cubase*, I'm the only one who has a legal copy – all the other are pirates of version 2. They also have the cheek to ask me for photocopies of the manuals.

My photocopying doesn't come cheap however and so far nobody has taken up my offer to do it for £400 to be forwarded to Steinberg. I can no more afford *Cubase* than anyone else – if you want it, pay for it!

Perhaps only people who write software can see it like this...
Steve Taylor, CIX BBS

In your answer to Mark Bryant's letter about piracy (July, issue15), you answered that "piracy is piracy no matter how you disguise it". Although not wishing to condone piracy or software pirates, there are a number of points I think should be raised that I have never seen expressed before in any of the ST mags.

For instance, let's say that someone is deciding whether to buy an ST or an Amiga. Her ST-owning friend tells her to buy an ST as she can have copies of all the games he has. Good idea she thinks and promptly buys an ST. The point is that the availability of software through friends and contacts is surely one of the most important decisions when choosing which machine to buy.

Is every pirated game really a loss to the software producers? It you have a collection of pirated disks, ask yourselves how many of those you would have actually gone out to the shops and bought? If, of course, you were planning to buy a game, but discovered a friend had a pirated copy of it and promptly went round to their house with a disk copier, then that is a loss to the authors. But in my own experience, if someone had a copy of (say) *Lotus III*, his mate just copies it because he can.

I'm not trying to condone piracy or defend it – after all, I'd hate to see the ST games market vanish. And even though the anti-piracy manual protection in games like *Champion Of The Raj* and *Spirit of Excalibur* irritate me, I think the ST mags seem to have a "holier than thou" attitude towards piracy. It's very easy to criticise users for piracy when you receive jiffy bags full of all the latest software every week...
Anonymous ST Lover, Wolverhampton

I can see why you might think that ST Review has a "holier than thou" attitude towards piracy, but surely you understand why any magazine in the area of disk-based medium must actively fight against piracy. Any other reaction would condone the very people who are responsible for the demise of the ST in certain areas.

At the recent ECTS (European Computer Trade Show), I asked someone from Psygnosis why no more games were being produced for the ST. Expecting a retort along the lines of lack of demand or distribution, I was astounded when the reason was purely one of lost revenue through piracy. My follow up question of "why not use copy protection" failed to solicit a reply.

Anyone can dream up scenarios that appear to question whether pirating software actually causes damage to the software industry. The fact remains that over £300,000,000 was lost in 1992 through piracy; condoning illegal copying in any manner at all ensures that this figure will continue to climb.

NAUGHTY BITS!

After being a frustrated computer owner (520STE with a 1Mb upgrade) for the past 18 months I feel that I have just been relieved of my frustration. How? Because I have just managed to purchase a second-hand printer – an Epson RX-80F/T+. Joy, oh glorious joy!

Being an avid reader of computer mags since first buying the machine, having such packages as *Protext*, *Write On*, *Timeworks*, and not being able to fully use them has been driving me mad. Now of course I am printing everything in sight: Readme files, .DOC files – nothing has escaped me and my new "best friend".

Which brings me to the point of this letter. Whilst printing out page after page of clipart (I told you nothing escapes my buddy) I noticed that on one of the pages there were two pictures of a naked female torso, complete with very large pendulous breasts and a large amount of pubic hair. Not very well drawn I am the first to admit, but there is no question as to what they are. My question is simple: were you aware of these pictures being present on your cover disk? If you were, how can you condone the passing of what amounts to semi-pornographic images to members of the public, some of which I'm sure you are aware are minors. If you were not aware, what sort of check do you carry out on the contents of your coverdisks?
K H Scott, Newcastle-upon-Tyne

I've had to search back through our cover disks to find what you are referring to, and believe this to be one of the sets of clipart that we gave away in the copies of ST Review ensuing the Timeworks cover disk.

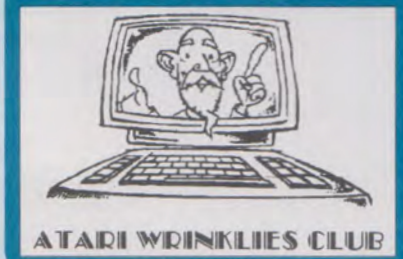
In the middle of a page with some 50 or so miniature drawings, there is a picture of a female torso a little over 1cm high. To say it is badly drawn is an understatement, but it is there – and came courtesy of a reputable PD library!

I can only apologise if this has offended you, and assure you that I check every single item that goes on the cover disk, from the commercial offerings through to the DESKTOP.INF file. Bearing in mind that nobody else has picked up on this, and that some nine months has passed, have you ever considered a job as a magazine proof-reader?

WRINKLIES RULE!

You may remember a couple of months ago I wrote to you about starting a "Wrinklies Club". I am happy to let you know that we are now up and running!

We are only ten members strong at the moment, but I'm hoping that if you publish this letter we may raise up a few more members. Although we call ourselves the Wrinklies, we have members aged 40 to 73, but I find that most of them are North of Watford. Besides myself (and I originate from Manchester), there is only one member from this end of the country. I have noticed as well that we are all males – surely there are females around who would like to join our happy throng?



The Wrinklies have lift off!

The idea behind the club is to introduce members to others who have the same interests. I have just started to put a diskzine out that I am hoping to publish twice a year – or more if I get enough contributions.

There are no subscriptions to pay. Perhaps you could let people know that we now exist. The address is: ATARI WRINKLIES CLUB, 60 Crumpsall Street, Abbey Wood, London SE2 0LR.

All the best to all at *ST Review*. Keep up the good work.
Jim Hornby, Abbey Wood, London

What can I say – ST Review strikes again! Nice logo too; I hope that the printing of your letter, and the £25, helps you to continue to build the Wrinklies. Keep in touch...

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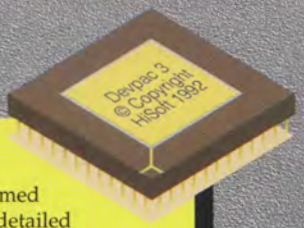

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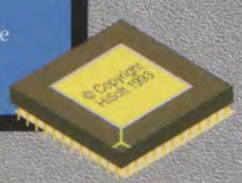

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