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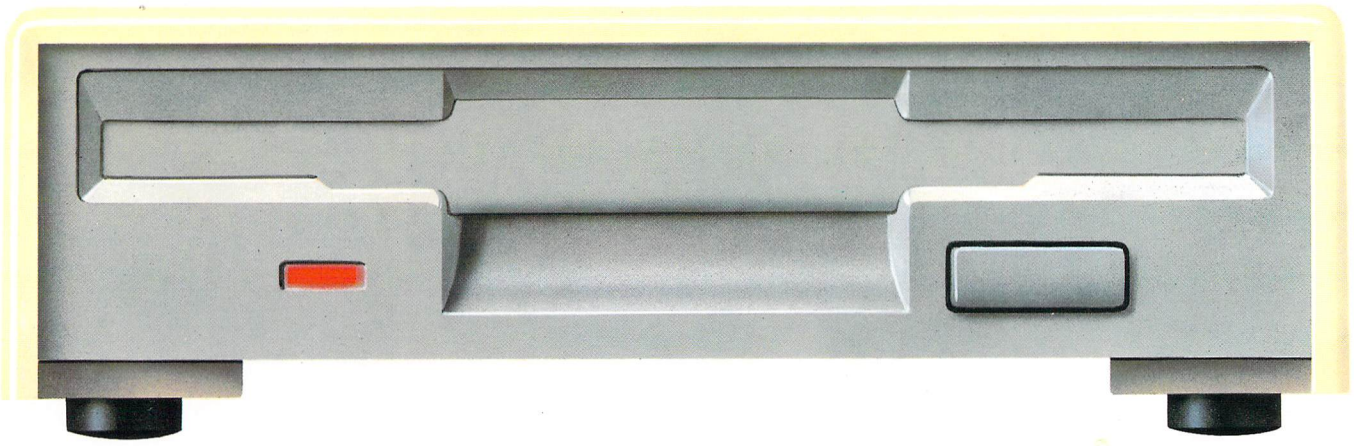
# Where you can stick it.



Viruses, disk swapping, single sided internal drives, disks which won't back up. Is there no end to the whingeing of the Atari user?

At Power, we want to tell you just where you can stick your disks and worries. In fact we will show you. The slot in this picture belongs to our PC720B, the first intelligent disk drive. Insert a disk.

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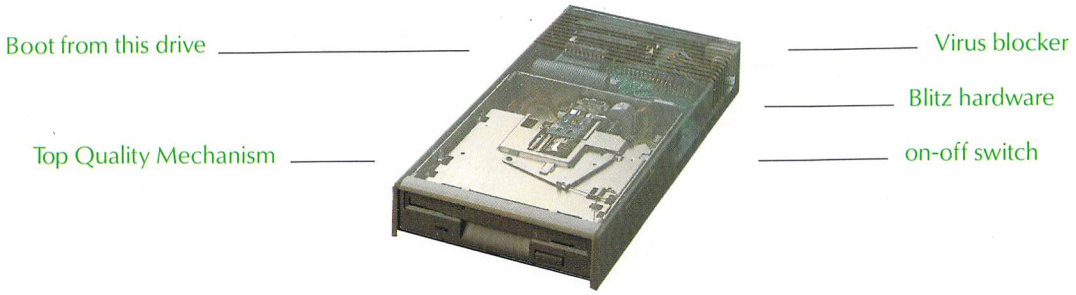


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The PC720B, the only drive to include Blitz Turbo, lets you boot from an external drive and combat viruses, is only available direct from Power, priced at just **£65.**

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*Internal drive is disabled while this feature is in use. Compatible with most models of Atari ST

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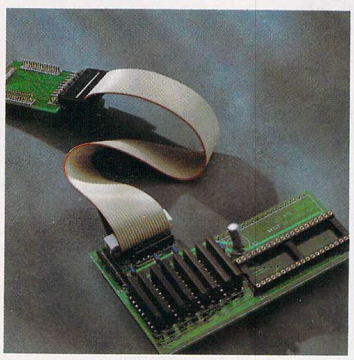

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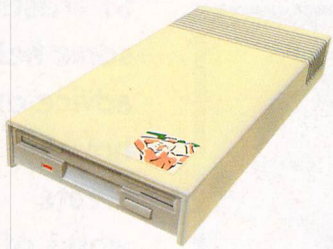

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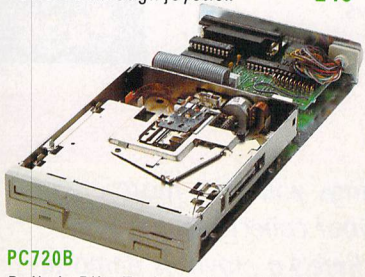

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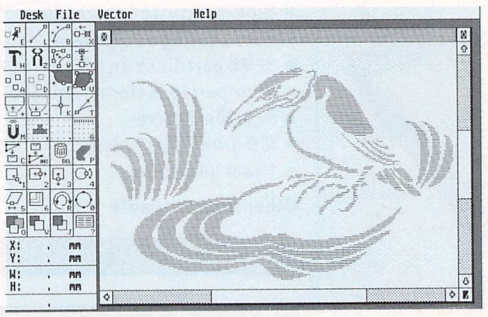


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# All about art

Calling all you budding ST artists! We offer some helpful advice on how to create works of art on your ST. Grab your mouse and join us on


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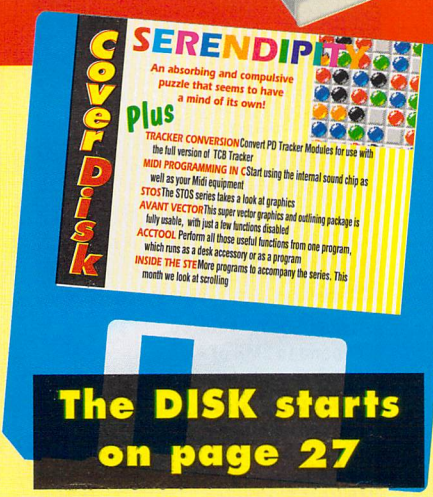
## THE COVERDISK

*The best ST CoverDisk brings you even more great programs and games for your collection.*

*For the games players there's a playable demo of Psygnosis' brand new Obitus, plus Serendipity, the world's most insulting puzzle game!*

*The more serious minded among you can get to grips with such beauties as AccTool, with its many uses, and a TCB Tracker module converter. Plus, a working demo of Avant Vector, so you can see if you agree with our review!*

*All this plus your usual Runtime programs!*





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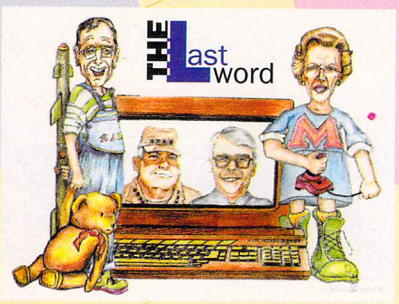



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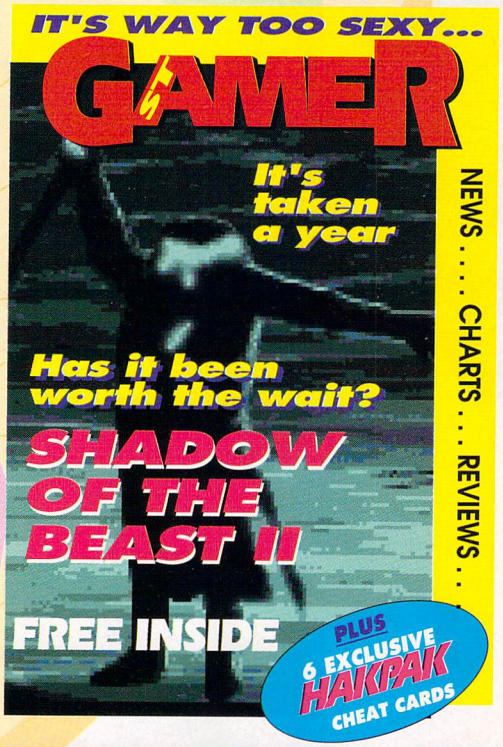



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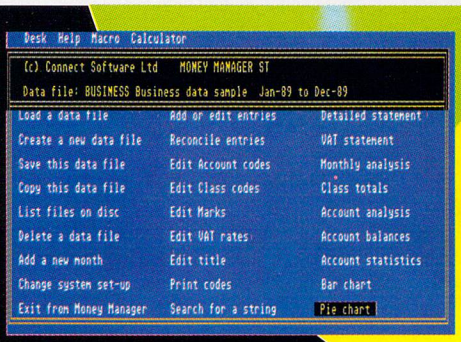


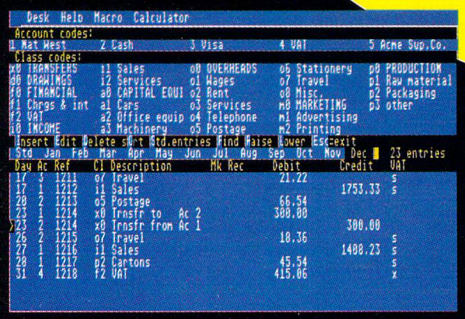


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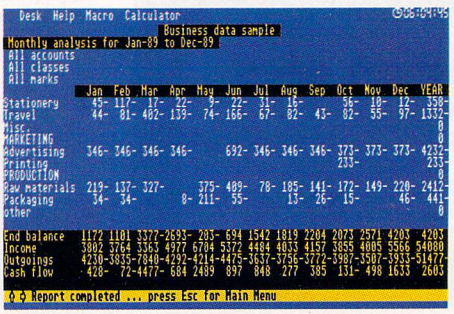


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# Atari give a little Xtra

**By John Butters**

THE entry level ST bundle has been refreshed and Atari are continuing their policy of repositioning the machine as a "serious" computer with the release of eight applications in time for the Christmas peak selling period.

Discovery Xtra will have all its games replaced with up-to-date software, including US Gold's Final Fight which features in the bundle before its official release. The other games are Sim City, 9 Lives and Escape from the Planet of the Robot Monsters.

All the games can be played with the keyboard or mouse, which has enabled Atari to withdraw the free joystick that had been packaged with earlier bundles. It will continue to be based on the half megabyte 520STE and the three starter programs remain unchanged.

During the summer the pack's price jumped by £30 due to poor exchange rates between the pound and dollar and Atari promised to review the situation by September.

At the time of going to press the company would not say whether a price fall back to £299.99 was on the immediate horizon but company boss Bob Gleadow said the firm were regularly looking at the pricing of their products.

Repositioning of the ST is set to continue. Since March Atari have been trying to market the ST as a computer rather than games playing device and as part of their campaign are advertising the new range of eight software modules on the back of Discovery Xtra. Module One is Home Productivity and includes introductory programs taken from the Family Curriculum Pack such as wordprocessor ST Word, database ST Base and ST Calc, a spreadsheet. Sound and Music is covered in Module Two with programs Music Maker Plus and Sampler Master Plus. Accounts packages Personal Finance Manager Plus and Datafax make up Module Three, Personal Finance. The fourth pack selling for £19.99 is Basic programming which includes HiSoft's Power Basic.

The final four modules introduce professional software to ST users. Calligrapher Lite, Superbase Personal, Masterplan and various programming utilities each sell for £24.99. Every pack comes with its own QuickStart tutorial, a guide to take users though the first steps of running and using the software.

"We recognised early the way computers with keyboards are moving away from the games element as games consoles are becoming more powerful – we are helping to push that move," said Atari's Darryl Still.

"To back that up we are launching eight modules of heavily subsidised software to introduce first time users to serious applications.

"The reason for these applications is to encourage users to use the ST to its full capabilities which is very important.

"In turn, we hope, it will encourage development of serious software, extra sales, a growing market and the spiral goes ever upwards," he concluded.

***Atari are shouting about the success of their first non-games bundle, the Family Curriculum Pack, and are continuing to reposition the ST by selling a range of heavily subsidised software packages which are to be advertised on the back of Discovery Xtra***

EXCLUSIVE

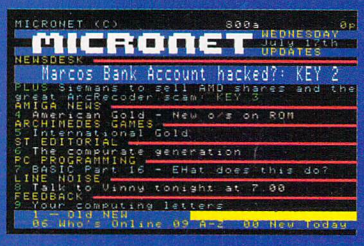
# The 'Net closes

As we go to press, BT have confirmed that they are to close Micronet, their leisure computing database.

The videotex service will cease on Friday October 31 1991, eight years after its inception. BT made the announcement after probing by *Atari ST User's* Editor, Eddie McKendrick. They have stopped signing up new subscribers and existing Micronet members will be offered favourable terms to join the giant CompuServe information service.

Closure marks the end of constant speculation about the future of Micronet. The service has never met anticipated acceptance levels. Despite time charges being dropped this April in a last ditch attempt to keep the service afloat, it will close with just over 11,000 members – well below financially viable targets.

Information about Micronet's closure was given to *Atari ST User* by a concerned BT insider. The rumour was initially dismissed by senior Micronet officials but within hours it was confirmed as accurate. Only when we contacted Micronet writers to inform them of their fate did BT take action. "I am disappointed, but not surprised," confided one Micronet editor after *ST User* revealed his area was closing. "It's typical of a large company like BT that I should find out from a magazine that I am no longer needed."




***The end of an era as the founder of leisure comms services bows out***

Commenting on Micronet's closure, former editor-in-chief Paul Needs simply offered: "It's the end of a dream."

**Are you a Micronet subscriber? If so, contact us on 999900386 with your views. Next month we will publish the complete Micronet story**

# ST enthusiasts flock to Glendale

THE LARGEST Atari exhibition in the US was held recently at Glendale, California and while it seemed like an up market version of the UK's All Formats Fair, most important firms were there. About 50 companies exhibited and during the weekend 3,000 ST enthusiasts visited.

Apart from Atari US, hit of the show was Gadgets By Small who talked about their new 40MHz plus go faster 68000 board for any ST. Fitted alongside Spectre GCR, Gadgets' new device will enable an ST to run faster than any Macintosh. It is not yet shipping.

Number one in the desktop business, Gribniff had many more products than GST seem to be selling. They were also promoting products from German company Shift including Arabesque.

Double Click Software had alternative desktops and a new file compressor for saving hard disk space. Backup software was available from Oregan Research, a small developer whose program is reliable and works at true image backup speeds.

Codehead had their new MultiDesk Deluxe – see news item this month – and packages Avant Vector and ReproStudio which have been translated from German to English by System Solutions and are being distributed in the States as a result of the new deal between the firms.

The only European software house

exhibiting were Compo Software, who were also present at Vancouver earlier this year. US releases of word-processors That's Write and Write ON were being shown and PC Speed and AT-Speed C16 were the best selling emulators at the show.

A new firm in the States is Sudden Incorporated. Their first product is an Ascii file editor which has been described as the "snaziest ever seen on the ST, that manipulates Ascii files almost like Deluxe Paint paints a picture". Sudden Incorporated are at 5081 S. McCarran, Reno, NV 89502, USA.

Other firms making the trip to the Los Angeles suburb included ICD with their ADSpeed and host adaptors and SoftLogik with PageStream 2.

Glendale Show is organised by a user group called HACKS, standing for Hooked on Atari Computer Knowledge Society. "Basically we are just a group of enthusiasts," says the group's president John Tarpinian. "We went to Atari and proposed they help us with an ST show six years ago – they said yes and it's been a success ever since".

"We put a proposal to Atari and they backed us all the way. They help with advertising, they provide machines for developers and they have a major presence at the show".

## Font packs released

SEVEN new font packages for use with any application that accepts Calamus fonts have been released. They have been designed with the aim of providing "smooth, even weight balance of printer matter".

The fonts feature true optical character spacing, a "by hand" approach to spacing that is similar to methods used by long-established type foundries. The new font packs each bundle several fonts, according to function.

Font Pack 7 has Cherry Benjamin Gothic in four faces and is good for body copy and headlines. Pack 8 includes two ornamental fonts: Glissade and Pirates, a striking initial caps font. In number 9 there is Fura, Cherry Font's rendition of Futura.

Packs 10, 11 and 12 each have a script/display combination, five fonts each pack and in number 13 there is Cherry Max which is comparable to Lubalin Graph. Each pack costs CDN$49.95 from Cherry Fonts (010 1 604 944 2923).

*Credit: Atari Explorer magazine*

## Libraries face legal action

PUBLIC domain and shareware libraries have been warned by Atari to withdraw copyrighted material or face further action.

A letter from the firm's software manager, Robert Katz, lists Atari copyrighted software and asks libraries to send written confirmation of products which they have dropped from their catalogues.

The most popular products listed are paint packages NEOchrome and NEOchrome Master and leisure software Joust. Katz adds that distribution of derivative products is also illegal.

He says: "While we wholeheartedly support the notion of public domain software and shareware, it is becoming increasingly apparent that several software libraries are abusing the concept by including copyrighted software in their collections.

"We will monitor software being distributed by PD libraries and will not hesitate in taking further action against individuals or companies found to be illegally distributing software products".

But most libraries are not treating the move with anger. Mike Goodman of Goodman Enterprises said: "They have just made the position clear. A lot of people have been breaching copyright without knowing it."

### DO YOU KNOW SOMETHING WE DON'T?

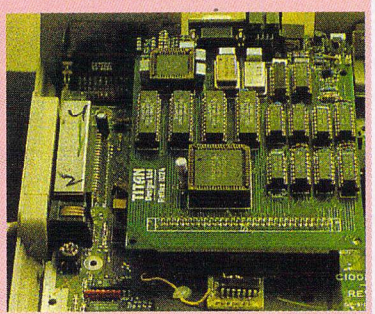
Although *Atari ST User* have scores of contacts in the ST world we need you. If you have some hot news ring John Butters on the news-desk now on 0625 878888. All information supplied will be treated in the strictest of confidence.

## STE doubles resolution

AN adaptor to enable all STE owners to use Titan Design's (021-706 6085) Reflex Graphics Card is now available.

Reflex Graphics Card increases the resolution of the monitor to more than double its normal screen display, making it a cheap option for users who would normally need to buy a large high resolution monitor.

It supports a wide range of monitors such as the Atari SM124 and SM125, Samsung 15-inch, Eizo 5500 17-inch, Eizo 6500 and Hitachi 21-inch. The adaptor is priced at £25 and the card costs £228.85. A fitting service is available.



***The Reflex Graphics Card plugged into a Mega ST. Now all STE owners can get the increased resolution on normal ST monitors***

# DIARY DATES

**11 to 13 October 1991**
*The Computer Market Show*
*Organiser: Rex Centre*
*(021-773 9090)*
*Venue: Rex Centre, Birmingham*
Aimed at all computer users who want to pick up software and hardware bargains.

**3 November 1991**
***All Formats Computer Fair***
*Organiser: Bruce Everiss*
*(0225 868100)*
*Venue: Royal Horticultural Hall, London*

**10 November 1991**
***Venue: National Motorcycle Museum, Solihull***
Brings together a collection of small firms and PD libraries that don't attend the big events.

**1 December 1991**
***All Formats Computer Fair***
*Venue: City Hall, Candleriggs, Glasgow*

**14 December 1991**
*Venue: Royal Horticultural Hall, London*

**15 December 1991**
*Venue: University of Leeds Sports Centre, Leeds*
Plenty of bargains and heaps of public domain software.

**5 to 8 December 1991**
***Computer Shopper Show***
*Organiser: Blenheim Pel*
*(081-868 4466)*
*Venue: Wembley Exhibition Halls*
An opportunity to buy some bargains before Christmas. It's expected to be much larger than last year's show with more than 50,000 visitors.

**7 to 9 February 1991**
***5th International 16-bit Computer Show***
*Organiser: Westminster Exhibitions*
*(081-549 3444)*
*Venue: Novotel Hotel, Hammersmith*
The first post-Christmas show for ST owners.

● ***If your company is organising a show relevant to the Atari ST and it's not listed, let us know so we can include the information in the diary.***

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ST FORMAT GOLD
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June 1991 value 96%

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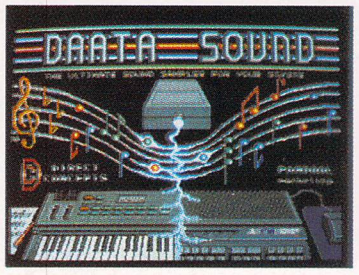


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ST FORMAT Issue 15 October 1991 value 93%

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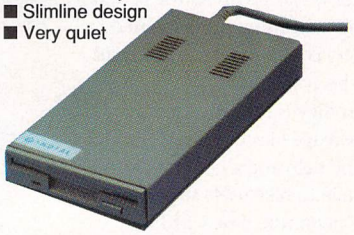

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Evesham Micros
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These units combine excellent performance with quality and high capacity

STU NOV '91

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## Music for Europe

MORE music products are heading to the ST thanks to a new deal between The Digital Muse and De Gale Marketing (081-965 8199), who become European distributors of TDM's range.

The first program will be Virtuoso, a Gem-based sequencer with a scoresheet selling for £305. A junior version with all the parent version's features implemented to "a very competent standard" will also be available.

Prodigy is for people with no knowledge of sequencing and has online help and a comprehensive manual to take users step-by-step to creating music. Price: £135.

The products "are designed by musicians for musicians", says TDM's Tony McGuire.

"Therefore they maximise the musicality of the computer programs. TDM products are cheaper and, feature for feature, outperform competing equivalent products."

Luther De Gale at De Gale Marketing said: "Despite having the most user friendly multi-tasking sequencer which offers excellent value for money, TDM have made little impact retail wise.

"With an array of modules in development, the TDM modular system will allow musicians to build a complete recording studio. Our job is to ensure that TDM receives the retail success its products deserve".

## Avant Vector gets cut

A CUT-DOWN version of monochrome art package Avant Vector is to be released early next year by System Solutions (0753 832212).

It will automatically convert bit images into vector graphics in .CVG format for Calamus, Repro Studio or Genus and .GEM/3 Metafiles for use in other ST desktop publishing packages. Existing clip art or specially scanned images in a wide range of file formats can be used for auto-tracing.

Avant Trace will require at least one megabyte of memory and runs in high resolution on the ST and medium and high resolution on the TT. Priced at £99.50, users will be able to credit the full cost against a later upgrade to Avant Vector.

# Fun School keeps Teddy and Freddie

ONE of the most popular series of education programs is set for its fourth ST release. Fun School 4 retains the popular characters Teddy and Freddie the Frog and adds Sammy the Spy to the line up of educational fun.

Through a series of interactive learning games, the programs in the new software have been developed to conform to the National Curriculum. For under fives, Teddy returns in a pair of Reeboks and a baseball cap, with six educational programs giving games for art, maths, words, karaoke and others.

Freddie the Frog carries his skateboard to the street for 5- to 7-year-olds. He features in games covering sequences, maths, word sorting and typing, to improve a child's keyboard skills.

Eight to eleven-year-olds learn with Sammy the Spy, who by travelling the world teaches geography, maths, general knowledge and timetables. Europress Software can be contacted on 0625 859333.

***Fun School 4 is set for release in the next few weeks. It continues to teach elements of the National Curriculum with characters from earlier versions***

***New joysticks were common at the stands of CES. The most interesting was from Dynamics, with their twin controllers called Pro Manix Twins***

# Atari quiet at CES

ALTHOUGH they had a stand at the recent trade-only Computer Entertainment Show, Atari waited until a press conference the following week to announce details of new software and Discovery Xtra contents.

The main emphasis at CES was on the hand held games console, Lynx, and new leisure titles for the ST. Games software dominated the show – as was always intended – but even this aspect was poorly represented, with several major players choosing to hire rooms at the nearby Gloucester Hotel rather than pay for floor space at Earl's Court II.

Away from leisure software, there were scores of new joysticks at the show. Models came from Power Play, Cheetah and Spectravideo but the only original design was from Dynamics.

Competition Pro Manix Twins are two hand held controllers which operate together. One controls direction using an eight-way switch while the other has three fire buttons and extra control keys for special functions.

The entertainment show was also the launching ground for education software from Ablac (0626 332233). Under the banner Edutainment, the firm will be selling a range of ST education titles covering a range of subjects.

Titles include New Math Blaster Plus!, My Letters, Numbers and Words, Kids Stuff, Memory Lane and 2nd Math. The software covers the age range 2 to 16 years old.

## Codehead come to UK

A DEAL has been struck between System Solutions (0753 832212) and American firm Codehead Software for joint distribution of software.

Under the deal all Codehead Software's products will be sold through System Solutions in the UK.

One of the first programs heading to the UK will be Codehead's new MultiDesk Deluxe, a major upgrade to their desk accessory loader and unloader. It continues to enable resident DAs to be used and now also enables non-resident accessories to be loaded when selected and wiped from memory when closed.

All non-resident DAs share the same memory space, giving access to many more DAs and freeing memory for use by applications. Booting is also faster because only the DAs' names need to be read from disk.

The program's new reserve buffer gives desk accessories the power to be used within programs that try to grab all the computer's memory for themselves. MultiDesk Deluxe works with almost all ST desk accessories which do not require modifications or special coding techniques.

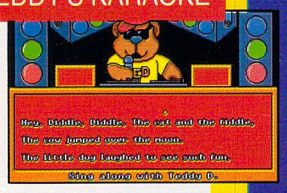
"The main drawbacks to MultiDesk were that it could eat up a lot of memory because all your DAs had to be loaded at once and that you couldn't load or unload DAs while running a program." said its author Charles Johnson, "Well, this new version of MultiDesk transcends both those limitations in one leap."

Selling for £49.95, existing users will be able to upgrade for £20 which will include a copy of the new manual.

# Help your child to a brighter future - with the best in educational software

fun school 4

## TEDDY'S KARAOKE




*Sing along with DJ Ted to popular nursery rhymes.*

## TEDDY'S BOOKS

*Select the correct number of Teddy's bedtime book.*

## TYPING

*Type the correct letters and words and save Freddy from the crocodile.*

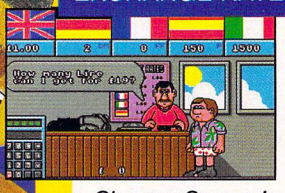
## SHOP KEEEPER

*Shop with Freddy and his friends choosing coins to pay the bill.*

## DESERT DATES

*Study historical events to find the secrets of the pyramids.*

## EXCHANGE RATES




*Change Sammy's money at the international exchange desk.*

"Fun School 4 zooms to the top of the class. Three brand new packages combining the essentials of the National Curriculum with beautiful graphics, cleverly animated rewards and stimulating sound keep your children engrossed while they learn.

Teddy for **under fives,** Freddy the Frog for **five to seven year olds** and Sammy the Spy for **seven to eleven year olds** provide **SIX** original stimulating programs in every pack. Plus, the carefully designed levels for each program encourage your children to have fun and learn at their own pace – and ensure they get the most from Fun School 4 and keep coming back for more."

| FORMAT | Amiga | ST | PC | C64 | | Spectrum | | CPC | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Tape | Disc | Tape | Disc | Tape | Disc |
| PRICE £ | 24.99 | 24.99 | 24.99 | 12.99 | 16.99 | 12.99 | 16.99 | 12.99 | 16.99 |

*Archimedes and PCW versions will follow in early 1992.*
*Spectrum, C64 & CPC available early November.*
*Amiga ST & PC available end of October.*

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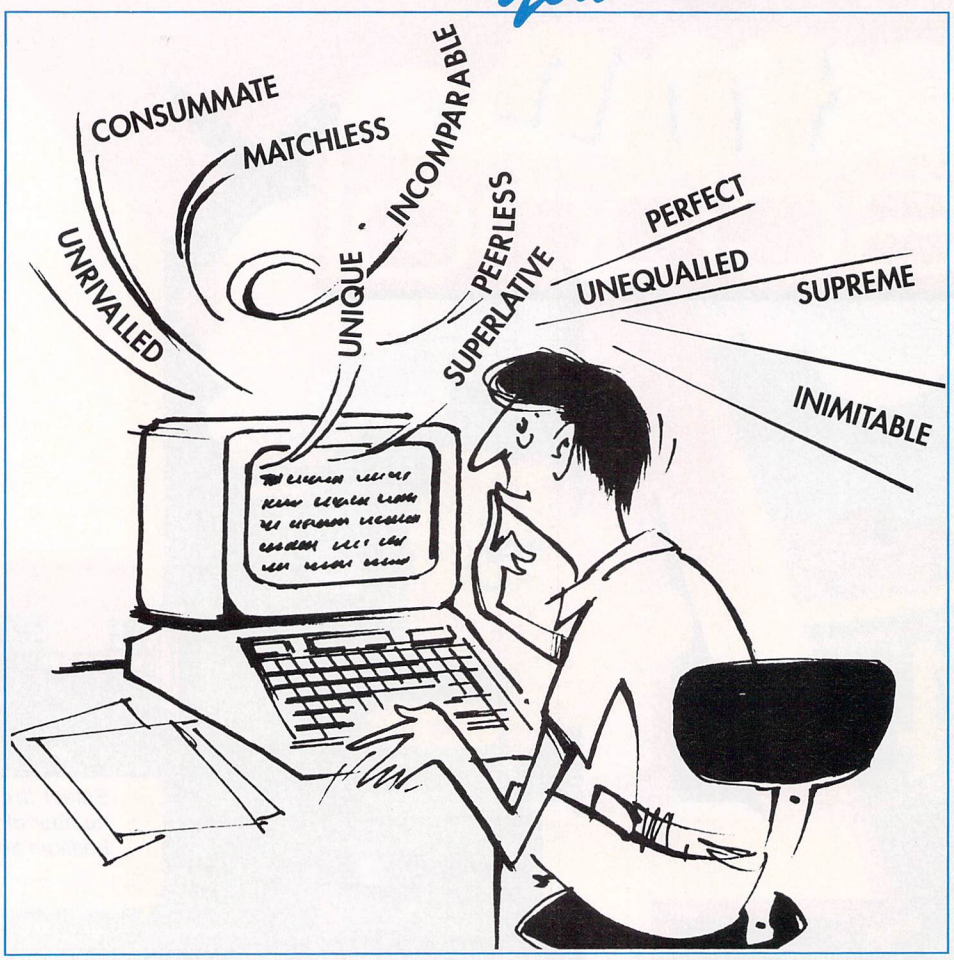
# PROTEXT 5.5

## "You won't be lost for words" . . .




. . . with Protext 5.5 because the pop-up thesaurus will provide you with inspiration whenever you need it. With words provided by Collins the thesaurus has 43,000 main entries and 827,000 responses!

Protext 5.5 introduces enhanced text formatting options. Automatic hyphenation lets you produce a well-spaced page layout without the bother of manually putting in soft hyphens. Protext determines the correct hyphenation points by algorithms and look-up tables. Elimination of widows and orphans is also provided. You will no longer need to worry about those infuriating single lines at the top or bottom of pages. Protext formats the text to avoid these as you edit the text. Extra blank lines at the top of a page can be suppressed.

New document analysis features provide a wealth of information about your text. You can examine a list of all the words used - alphabetically or by the number of occurrences. Other statistics shown include average word length, average sentence length and a table of the number of lines on each page.

### Plus many more improvements . . .

- ☆ Enhanced file selector with different sorting methods, bulk copy and erase.
- ☆ Prodata users - mail merge directly from Prodata files, no need to export.
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- ☆ Spelling checker finds repeated word and missing capital letters.
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- ☆ Full printed documentation of new features.

### Of course Protext still includes . . .

Choice of pull-down menu or keyboard operation, extensive printer font support and proportional formatting while editing, up to 36 files open, split screen editing, characters for 30 languages, index and contents, footnotes, newspaper column printing, file sorting, macros, indent tabs, mail merge programming language, exec files and the fastest search and replace around. Altogether the most comprehensive word processing software for your Amiga or ST.

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*"if you need a professional word processor Protext is perfect"* — **AMIGA COMPUTING**

*"nothing else available comes close"* — **ST APPLICATIONS**

### PRODATA 1.2

**New version of Prodata now with pull-down menus, mouse or keyboard operation, automatic record numbering, merge database, instantaneous filtering, prologue form, edit fields in any order, 2-across label printing. Full details available from Arnor.**

**Price: £85+VAT, upgrade from v1.1 £30+VAT.**

### PRICES (including VAT and delivery)

**For Commodore Amiga, Atari ST or TT.**

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| **Protext 5.5** | **£152.75** |
| **Upgrade from 5.0 to 5.5** | **£30** |
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*Please return your original disks when upgrading*

| | |
|---|---|
| **French or German spelling dictionary** | **£35.25** |

*When upgrading please return any extra spell checking dictionaries for a free update to the revised version.*

☆ **Both Protext 5.5 and Prodata require 1Mb of memory**

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## Children get double keys

YOUNG children are to have their computing life made easier with the release of a keyboard overlay which shows both lower case and upper case letters. Designed to fit most types of keyboards, Keys to Please has been laminated to make it longer lasting.

Thompson Computers proprietor Mr Thompson said: "Children are taught small letters first, so they cannot understand a computer keyboard. This overlay will help them use computers more effectively."

Price: £2.95 from Thompson Computers (0733 331796). Educational users get discounts.

## Top CAD pack gets better

THE leading ST computer aided design package, DynaCADD has been upgraded to v2, which has been given new "state of the art" features.

The 3D maths has been rewritten using consistent and improved algorithms, a new 3D Face/Solid entity type has been added and plotting, printing and PostScript have been improved.

Another new feature is Hidden Line Removal, which removes hidden lines from all selected views and DXF Import has been upgraded to include the layer colour and style information. There have also been enhancements to the DXF In and Out translators and a DXF Out 3D option has been added.

Andy Marsh at distributor Expressworks says: "Existing users were after 3D output – we've given them what they wanted." Upgrades costs £111.63 and for new users the price is £763.75. Expressworks who can be contacted on 0252 726255.

## Two into one goes

A LETTER published in *Atari ST User* complaining about the position of the joystick and mouse ports has led to the manufacturing of Joyplex, an adaptor which plugs into the mouse port to give two easy to access ports.

Both ports are identical and can be used for either a joystick or mouse. Once connected, users gain joystick control by pressing the Fire button or can enable the mouse by pressing the left button.

Price: £20 from Quasar Electronic Designs, 16 Thornhill Road, Sparkhill, Birmingham B11 3LL.

***Pepe is the main character in the latest releases from Prisma Software. The mouse is used to add fun and lasting appeal to the education programs***

## Learn with Pepe

TWO new ST education titles have been released for junior school-aged children, each with five games covering a range of topics.

Aimed at children between four and seven years old, both packages are based on a cartoon character called Pepe who makes the software fun to use while retaining its educational value.

Subjects covered in Pepe's Garden and Pepe's House include maths, science, pre-reading and reading skills and simple logic. Each game is set at a different ability level to enable children to keep enough interest to progress through the software.

Their designer Trude Salisbury commented: "Pepe is such a loveable character. He's already attracted such a great deal of attention and interest that I feel it's the best educational software title available."

Each costs £25.53 from Prisma Software (0244 326244).

## CompuServe gives UK more

COMMUNICATIONS giant CompuServe (0800 289458) have added new services to their system for UK subscribers.

One is the UK Newspaper Library which has articles from the main British broadsheets in its directory of newspapers. They can be searched individually or simultaneously by key words or phrases.

For computer enthusiasts there is a new UK Computing Forum which contains discussion on a range of subjects such as information about hardware and software, computer shows and meets. Most popular shareware programs will be added and UKshare will give the opportunity for subscribers to chat online with program authors.

Financial information plays a major role and this section has been extended with the addition of the European Company Library. It gives information on more than two million European companies and is supplied through top databases.

CompuServe have recently set up a 9,600 bits per second London telephone number. It is available on 071-490 8881.

- *Atari ST User* can be contacted on CompuServe. Mail to 75300,1505.

## Circuit boards get CAD

A VECTOR-oriented program for computer aided design and outputting printed circuit board layouts and circuit diagrams using the ST is almost ready for shipping in the UK.

In conjunction with a plotter or graphics printer, Platon enables camera-ready layouts to be produced and, with an xyz-machine, PCBs can be automatically drilled or tracks and pads cut for prototype production.

Front panels can be milled and with the help of output drivers for Gerber photo plotters and CNC drill equipment, appropriate service industries can manufacture complete PCBs.

Up to six 932mm by 832mm PCBs can be held in memory simultaneously and worked on at resolutions up to a maximum of 1/2000th of an inch. A maximum of eight layers, chosen from a possible 100, can be displayed at the same time offering flexibility over screen views and final layouts. It is controlled by using drop down menus, pop up menus, icons and keyboard commands. The German program is available from Expressworks on 0252 726255. Platon costs £195.

## TT gets Fortran

ONE of the first products designed especially for the TT is a Fortran compiler. Fortran TT is based on Prospero Software's (081-741 8531) ST range of compilers.

It has been redesigned to use the 68030 and 68881/68882 processors to their maximum potential. All mathematical functions are calculated in line without recourse to library routines to give optimum performance.

It includes an integrated editor environment and fully documented support for Gem. Price: £199.75.

## A perfect hotline

A TWELVE HOUR helpline has opened for WordPerfect UK customers needing assistance with the firm's wordprocessor. The line operates between 7am and 7pm on 0932 850555.

## On the move

PRODUCERS of Tunemaker, Rhythm Kit and an education pack for C-Lab Notator, Impac Resources (0751 77456), have moved to Unit 4B, Thornton Industrial Estate, Pickering, North Yorkshire, YO18 7JB.

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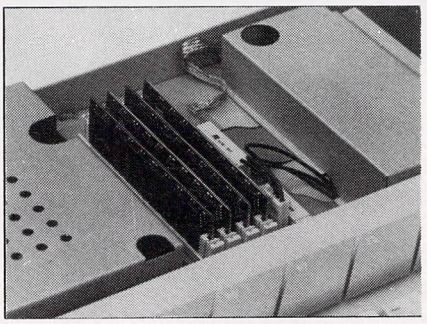

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N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

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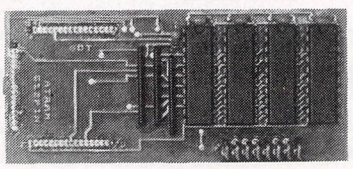

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*Please note: Not suitable for STE machines*

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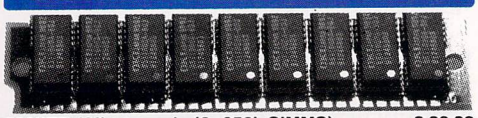
## ATARI STE RAM UPGRADES



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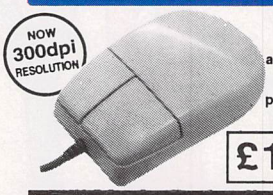


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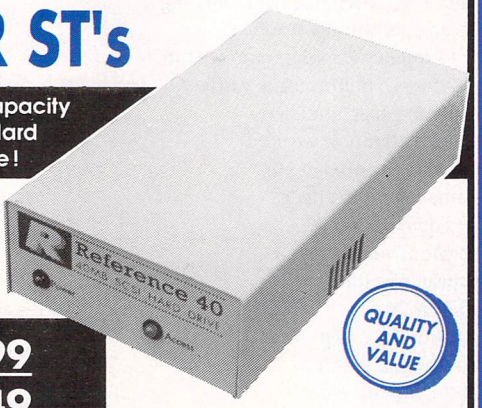


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*The best art package won't make you an artist. Mo Warden offers some practical tips for perfect pictures and looks at a range of art software*

# PAINTING BY

Most software relies on graphics to give it appeal, excitement, explanation, impact and clarity. Computers and images have been living together since high speed number crunching became technically feasible.

Computer graphics was once the province of boffins using vastly expensive machines like Quantel, but now we all have access through our home micros to effects we could once only goggle at when they appeared in films and on TV.

With the exception of games, one of the biggest ranges of software for home machines is in graphics applications. It covers a huge field in itself – animation, CAD, 3D modelling, pure painting, image management... even creeping into "serious" software like DTP and accounts and, of course, games, which would be lost without graphics. The designer produces the bridge between the player and the programmer, the player appreciates the programmer's skill through the images.

## Dimensions

There are two main types of graphics utility – the ones which are purely bit-mapping and those which allow you to construct 3D objects. The difference is quite simple – the former is picking up a colour and drawing pixels onto the screen, the result of which is saved as a bitmap which is two dimensional. The latter relies more on where you place those points in space – they have an extra dimension of depth. The computer can then calculate their relative position to one another and construct an image which has been transformed, producing a sequence which can be chained together to give the illusion of movement.

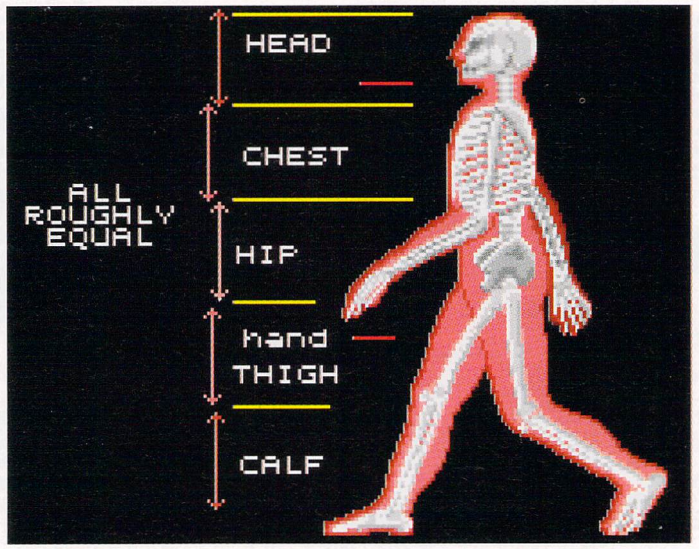
I'll be concentrating here on bitmapping – object editors are a different breed and deserve to be treated separately.

Since the ST first appeared on our shelves in the mid-1980s, a huge number of graphics packages have been written for pure painting, and the choice can be difficult. What I'll try to do here is to describe some of the packages you might choose, and how to make a start with one.

Learning to use a piece of software is the relatively simple part, after all they were written for ease of use. More difficult is knowing what to do with the package once you know its ins and outs. I've met lots of people who can demonstrate the fancy effects contained in their new software, but never manage to produce a screen of their own which they're happy to show off.

It's not surprising that most people would like to able to draw. Computer graphics apart, being able to paint something impressive is generally regarded as an exceptional skill, evidence of a vivid imagination and an ability to place that mental picture onto a medium where it can be scrutinised. A lot of people resign themselves to being armchair critics. It's a little like asking someone if they can sing. Most people say no, but everyone can to a degree. Ask a professional singer and the answer will be a confident "yes", but they will admit that the practice makes the difference. So it is with art.

You don't necessarily need art school training to be able to draw. Some of the best artists are completely self–taught. All you have to do is to learn a few basic rules, find a good package that does what you need without hindering you, be determined to succeed and give it time and patience.




***Roughly showing body proportions. Dem bones first, in line, then pad out***

## Observation

So you're sitting there with the ST on and a package loaded, ready to produce a masterpiece. Wrong. Turn it off. Probably the worst start you can have is a blank screen staring back at you. Get your image sorted out first, commit it to paper, know what you want to do, then load your graphics software.

If there is a "trick" to drawing, it's observation. We all see what goes on around us, but few of us watch. Everyone knows what a tree looks like, so why can't we all draw one? The answer is focus – a particular tree. Narrow the field down within your mind, think of the tree in the garden or street, visualise it. Better still, go out and sketch it, look long and hard at it – it won't object. Ignore the neighbours. Your drawing might not

***The colour wheel showing the "moods" of each colour range. Choice of colours in relation to subject matter is important***

# NUMBERS

be up to much, but it'll be better than the one you would have drawn from imagination. Now try finding a photograph of a tree from a magazine or a book. Draw it again using the picture. The difference is marked. It may feel like cheating, but most artists rely heavily on source material. As long as you're not directly copying someone else's work, you're creating.

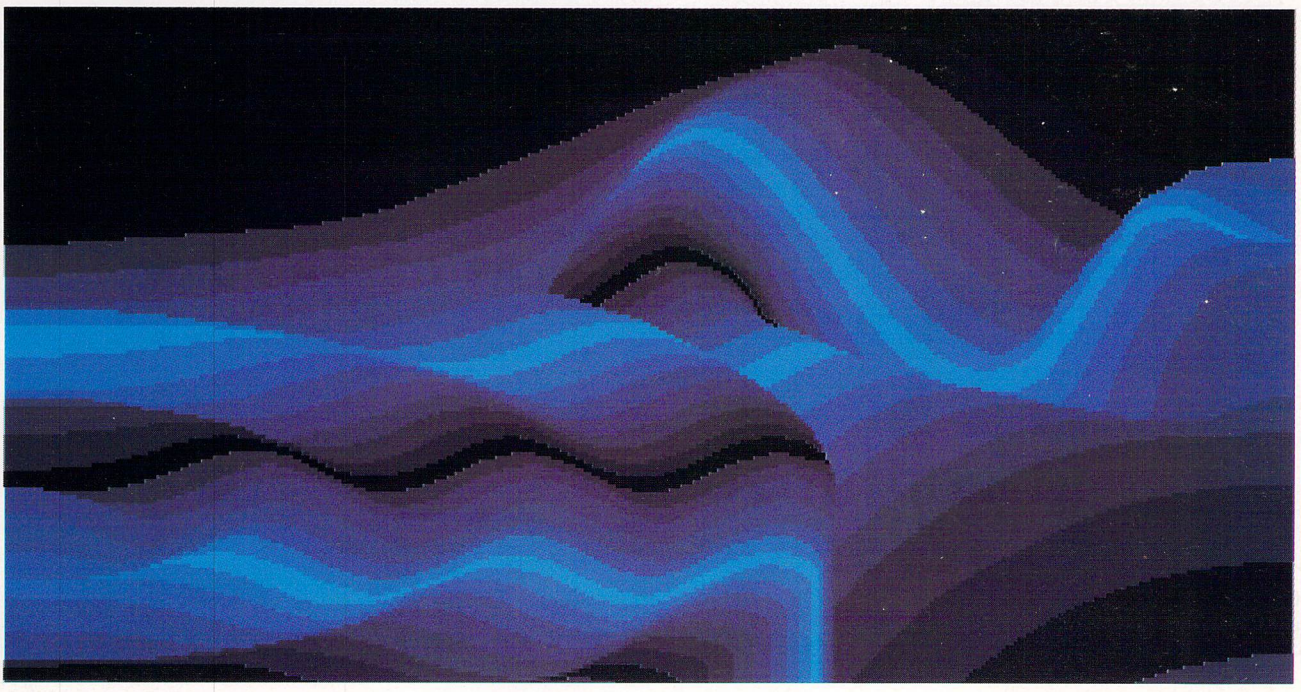
Nature rarely repeats itself. If you can't copy that tree exactly you may be depicting another. You only need to remember the limitations of the object, recall the strange shapes you've seen. If it looks unnatural, exaggerate it – art happily allows abstraction. There are sets of "rules" dominating art. When you learn them – from a library book, from your own observation, from an art tutor – they seem common sense. Proportions of the body, delimiting landscapes, constructing scenes may seem dependent on fixed rules, but these can be easily understood, and when they've been put into practice a few times they become second nature.

Picking a subject to draw can be tricky. Most people tend to choose a picture of a favourite object, which is why there are so many screens of sports cars around! If you're not completely confident that you can achieve a good likeness, pick a subject which will allow some "artistic licence" – a country scene with a cottage, a pretty sunset, something where you can have differences between your image and the original without them being too obvious. Trying to draw a perfect Countach is not something I'd recommend to a beginner. There are lots of places to find good source material. Most homes have magazines and books around which will contain plenty of photographs to choose from. If you're looking for a specific subject, try the local library. A clothes catalogue is a good place to select a figure from. Newsagents will have specialist magazines with a choice of pictures.

## Colours

It's important to bear in mind that your chosen image will have to be executed in sixteen colours. There are a few packages which allow palette splitting, but as a general rule of thumb select something which has a limited number of colours. That woodland scene may look all green and brown with blue sky, but drawing all the trees in the same few greens can look unnatural unless they are all the same species, and even then distance will affect the apparent colour. The composition of an image can make or spoil it. By condensing a picture into its main outlines you should be able to get an idea of whether they detract from or complement the subject. The viewer will be subconsciously led by these lines, if they direct the eye out of the picture then they're working against the effect. They should lead to or surround the focal point to emphasise it.

The focus isn't necessarily central in the scene – it can be virtually anywhere within the frame – but unless the composition draws the eye to it, it will lose strength. Of course, a picture need not have a focal point at all, but unless the lines are balanced and thought out parts of your work may➤



***A fairly quick abstract, designed to utilise palette rotation***

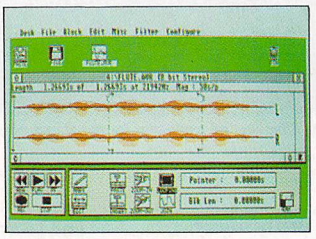
LOOP JOIN ● LOOP CROSS FADE ● REVERSE ● FADE ● VOLUME ● LOOP ● DELETE ● CLEAR ● FILL

CHANNEL SWAP ● CHANNEL COPY ● CHANNEL CROSS FADE ● SAMPLE PAN ● SAMPLE ● PRE-SAMPLE

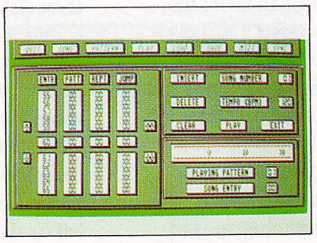
## NEW from MICRODEAL

# STEREO REPLAY

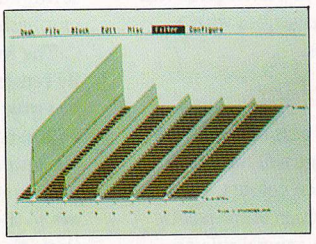
## STEREO SOUND SAMPLING & OUTPUT CARTRIDGE



REPLAY STEREO EDITOR



STEREO BEAT DRUM MACHINE



FAST FOURIER TRANSFORM DISPLAY

microdeal

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Now from Microdeal, the first ever **STEREO** sound sampler for the **ATARI ST** range of computers. With the superb high quality reputation of **ST-REPLAY**, this completely new hardware cartridge contains **DUAL** Analogue to Digital and **DUAL** Digital to Analogue convertors to ensure the **ULTIMATE** in **8 BIT** sample quality. The system can record in high quality **STEREO** from its twin **PHONO** input sockets, taking sounds from any suitable **STEREO** equipment such as Portable Cassette or C.D. players or from any other 'Auxiliary' or 'Line level' source. The twin **PHONO** outputs provide the user of a standard **ST, STF, STFM** or **MEGA** computer, with high quality **STEREO** output. Users of the **STE, MEGA STE** and **TT** machines are not left out either ! The software will allow samples to be played out from the connectors at the rear.

As you have come to expect from **MICRODEAL** and Audio Visual Research, the **SOFTWARE** provided with the system is also packed with new features. **STEREO REPLAY** does not just set the standards by which other samplers are measured, it has **COMPLETELY** re-defined them!

The **STEREO EDITOR** program provides the user with the ultimate in power and sophistication, packed with features which appear for the first time on **ANY** home computer. This fully **DESKTOP** and **WINDOW** styled program allows individual samples to be loaded into the computer and edited separately. However, this is just the beginning. The program will allow the user to load in samples of **8**, **12** or even **16 BIT** resolutions in **MONO** or **STEREO** formats and freely convert between them. It is possible to take a cutting from a **16 BIT MONO** format sample and edit it into a **STEREO 8 BIT** sample without even realising that the two sample files were different, the program manages all of the sample translations quite automatically !

### The ULTIMATE STEREO SOUND SAMPLER

The **STEREO EDITOR** supports many useful editing functions including Mark, Hide, Cut, Paste, Insert, Delete, Clear, Fill, Overlay, Repeat, Gap, Reverse, Fade, Volume, Loop, Loop Join, Loop Cross Fade, Channel Swap, Channel Copy, Channel Cross Fade, Sample Pan, Sample, Pre-Sample, Play, Monitor, Scope Left or Right, Load and Save and more !

As if the list above was not impressive enough, the **STEREO EDITOR** can also perform more advanced forms of editing such as frequency 'Re-Sampling', Sample **FOURIER** analysis, Digital filtering, Digital Hall, Room, Echo, Reverb and Flanging effects, Play up to 10 different samples from an external **MIDI** keyboard or sequencer and **MUCH, MUCH** more.

The '**STEREO BEAT**' program can load **KITS** of up to 15 different samples into memory at once and then play 3 channel (**LEFT, CENTRE** and **RIGHT**) sounds out from the **STEREO PORTS** of the cartridge at the same time. Memory permitting, **KIT** samples can be up to 1 MByte in length **EACH**, permitting the user to record sections of their favourite music and completely **RE-MIX** them using **STEREO BEAT**. Patterns of **BEATS** are arranged on a grid format **PATTERN EDITOR** and can be varied from **4** to **32 BEATS** in length with timing set to 1/8, 1/16 or 1/32 with or without Triplets. **SONGS** are constructed from simple lists of **PATTERNS** with **LOOPS** and **SONG POSITION JUMPS. A SONG** can contain up to 99 separate song entry steps whose tempo can be varied from 40 to 239 B.P.M. STEREO BEAT can act as **EITHER** a **MIDI SLAVE** or **MIDI MASTER** and can both generate or respond to **MIDI START, STOP** and **SYNC** commands.

The **STEREO REPLAY** system is also supplied with routines and examples of code which enable the user to play **8 BIT MONO** or **STEREO** samples recorded and edited with the system from Machine Language or from High level languages such as **HISOFT, GFA** and **STOS BASIC.**

### What more can you possibly need ?

## STEREO REPLAY ORDER FORM

STEREO REPLAY IS £89.95 POST & PACKING £1 (ALL PRICES INC V.A.T)

**BY PHONE WITH CREDIT CARDS**

**(0726) 68020**

Access · American Express · VISA · Diners Club International

**BY POST:** with Cheque · Postal Order · or Credit Card

Name .....

Address .....

..... Post Code .....

Credit Card Type ..... Expiry Date .....

Number .....

**PLEASE ALLOW UP TO 28 DAYS FOR DELIVERY**

**SEND TO: MICRODEAL, PO BOX 68, ST AUSTELL, CORNWALL. PL25 4YB**

➤ not be noticed at all. Choice of colouring and lighting is important too. The effect of distance will be enhanced by careful "greying" of objects further away. This is called tonal perspective. It will also assist with the apparent scale of objects – imagine two hills, one behind the other but both in the same shade of grassy green. They will look close together. If the more distant one is bluer or greyer, it will appear to be much further behind and will also seem to be bigger. Tonal perspective is flattened by bright sunlight, while oblique light gives more interesting shadows and a "mistier" look to the horizon.

Line perspective can be difficult to master but if it's wrong a scene can be ruined. Parallel lines appear to converge at a focal point, which is always on the eye line (horizon). There can be multiple vanishing points in a picture – find them by using a ruler. Linear perspective can work against as well as for you – imagine a landscape with a cottage in the foreground, to one side. If the lines of the wall appear to converge within the frame of the picture, attention will be drawn along them to the rest of the scene. If they lead out or are flat, the effect is lost.

Try to use brush strokes and lines which compliment your subject. Strong, hard lines may spoil a scene of gently rolling hills, while fiddly little lines will take the boldness out of a dramatic face.

## Thirds

Landscape drawing is governed by the "Rule of Thirds". This simply divides the scene into three parts: back-, middle- and foreground. These three areas aren't necessarily an exact third of the picture, neither are they distinct parts – they must blend into one another. If you remember this when you choose your palette it will help with the effect.

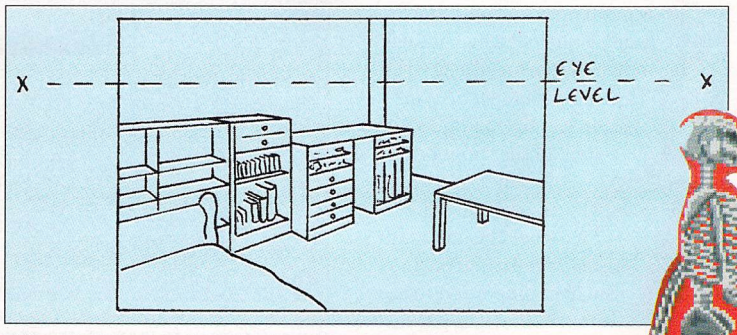
The human form can be a little difficult. There are rules dictating the composition of a body, but observation will provide these anyway. You may be able to visualise the way a man will hold a heavy weight in one hand away from his body, but if you see him do it your drawing will almost certainly be wrong. Even the way an amateur will do it compared to a professional – the muscles will build in a particular way, he'll stand in a certain pose through practice and the facial expression will differ.

Figures are easier to construct if you follow a basic guide to the proportions of the body, but these aren't hard and fast rules. There's a great deal of flexibility within them and as long as you stay within the limitations of reality your figure will look human. For example, your man could have a large head and still seem normal, but if it's too big in comparison with the rest of the body then he will look very wrong. He could have shorter arms or longer legs without looking like an alien, as long as the exaggeration isn't too great.

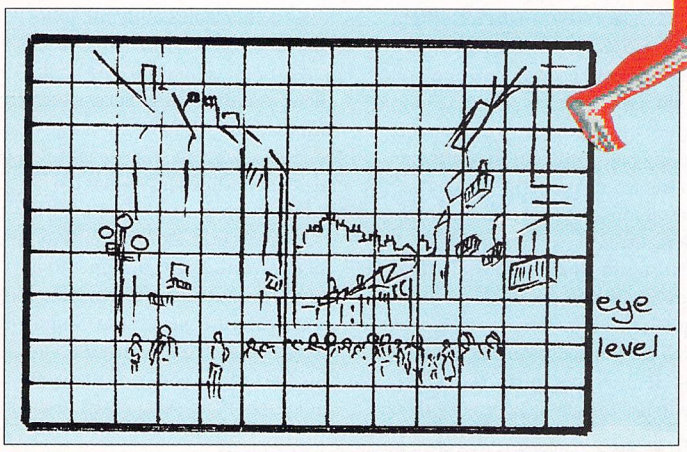
Faces can also be built following certain rules. Again, there's a lot of leeway within them, but if you're trying to depict a convincing face then stay fairly close to it. The head is a basic oval, but this varies a lot: rounder, squarer, thinner. Combine several rounded shapes to give the best result. Put a rectangle round your oval and divide that down the middle (no point in drawing both sides when you have software to copy it for you). Split it horizontally into rough thirds and in half as well and another halfway to the line above it.

Put another horizontal line between the bottom of the rectangle and the lowest of your thirds lines, slightly higher than halfway between them. The line just above the centre line will be the eyes, the top one-third line is the brows, the lower one-third line is the base of the nose and the line between that and the chin is the mouth. Take a look at my diagram (overleaf).

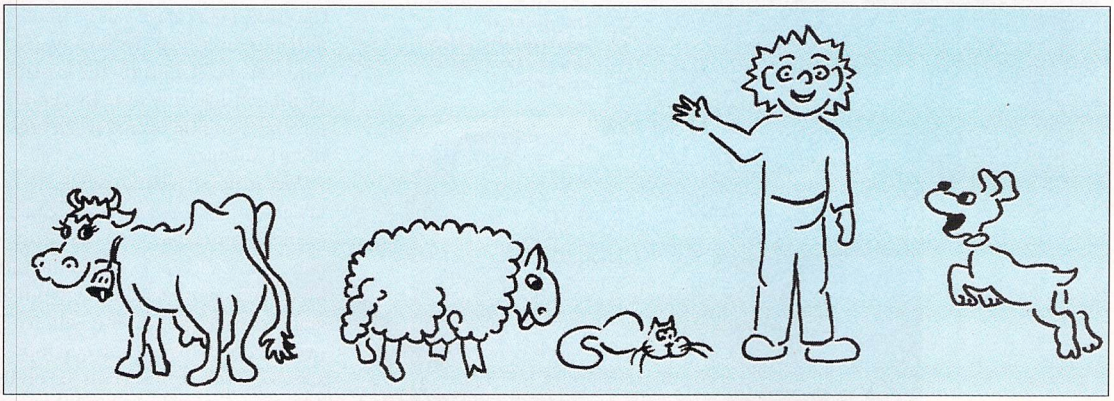
Drawing an animal can be very difficult, but it can be simplified by visualising the skeleton beneath the skin ➤




***This quick sketch of the bedroom has two vanishing points, both outside the frame. Most of the lines except the vertical can be followed back to one of them***




***Once you've drawn your scene, grid it up carefully to match the way you've prepared the screen. It's a lot easier to grid the screen first, then imitate it on paper than the other way round. Most good packages have a variable size grid function***



***"Cartoon" doesn't necessarily mean Garfield. It's much more fun to make up you own, and not difficult. These are still based on the proportion rules, but exaggerated, greated and stylised***

## The software

**Cyber Paint £51.00**
**Electric Distribution 0480 496666**
*Superb package with great animation facility. Part of the famous Cyber suite. Can be used separately but its full potential can be realised when it's used with CyberStudio, loading object files. Imports pictures from other art packages. Effects include spinning and miniaturising, and can define cels as in traditional animators, create fades and cut/paste frames. Very flexible.*

**HyperPaint £24.00**
**Gasteiner Technologies 081 365 1151**
*Colour or mono, STE support, Gem interface. Full IMG graphic file support (from scanners). Very user friendly and capable with Gdos support for different font sets and printing images to various output devices. Can have 10 screens open at once, lots of powerful tools. One of the only packages I know with an algorithm to rotate a block without distorting it. Excellent.*

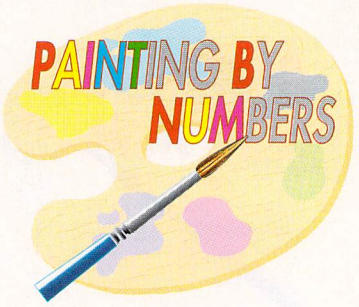
**Quantum Paint Gold v2 £24.95**
**Power Computing 0234 273000**
*Improves on the original Quantum Paint which allowed 4,096 colours on the standard ST low-res display at the same time. Choice of palette here from 128 to 4,096 colours. All the necessary tools are present plus anti-aliasing, blending and animation options. Clever use of Gdos fonts. Very good package but not recommended for beginners – it's a bit awkward to use.*

**Spectrum 512 £24.00**
**Gasteiner Technologies.**
*512 colours onscreen at once on the ST, an excellent range of tools with some special features like anti-aliasing and gradient fills. User interface is a bit daunting to start with but eventually you get the hang of this very powerful – but rather slow – program. Good manual. Not for beginners.*

**Prism Paint£79.00**
**Condor Trading 0734 810066**
*TT compatible, runs in all ST and TT modes and supports a range of graphics boards. Can handle most picture formats except IMG.*

**Flair Paint £24.95**
**Database Software 051-357 2961**
*Can be installed as a desktop accessory. Front end is a bit fussy at first but with practice it's quite good. All the usual tools plus Bezier curves, 12 levels of zoom, powerful fill function, Selective Painting (fix colours so they aren't overwritten) and Desktop Accs including clock, calendar, notepad, mouse speed, print controls. On the negative side, the manual doesn't have an easy intro, no beginner's quick tutorial.*

**Art Scribe £24.95**
**SPL Distribution PO Box 8, Hampton, Middlesex.**
*All the basic tools and up to six screens in memory – if you have it – but without font edit. Simple and adequate.*



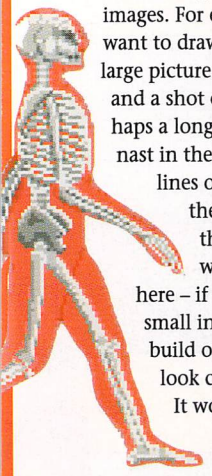

➤ and then the distribution of muscles. This applies to people too. First construct a line drawing of the basic anatomy before filling it out into the shape.

So far I've only talked about realistic artwork. Fantasy work can be much more fun and less frustrating than striving for perfection. Mistakes or shortcomings in technique can be made to work in your favour if the subject matter is stylised. Even so, unless your piece is pure abstraction it will benefit from being based on reality.

## Sythesis

Adapting an existing image is much easier and more successful than trying to hold a mental picture for long enough to get it onto the screen.

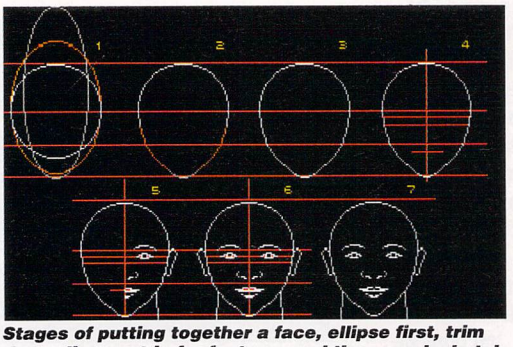
Combining elements from several sources can produce interesting images. For example, if you want to draw an angel, find a large picture of an owl or eagle and a shot of an athlete – perhaps a long jumper or gymnast in the air – and trace the lines of the wings onto the same paper with the person. Scale would be important here – if the wings are too small in proportion to the build of the figure it will look completely wrong. It wouldn't get off the ground!



This technique can be used in lots of ways I often take elements of several pictures and combine them into one tracing to produce a complete image. Take care that any perspective in the parts fit into the whole properly – it may be necessary to adapt parts in order to look realistic.

Pure abstraction can be quick and produce satisfying results. A lot of graphics packages have fancy tools which are perfect for this kind of work. It also gives you the opportunity to use those lovely bright primary colours which realism so often lacks. All sorts of tricks like palette rotation can be used to great effect, and this is one of the few times when doodling straight onto the screen is the best start.

Cartooning is great fun and fairly easy. The ST lends itself well to this type of work because bold, solid colours suit it. These characters tend to look best when they have a black or dark outline, but when you choose your palette remember to leave quite a few colour slots empty for your anti-aliasing shades, as your 'toon's background colour must be lighter than its outline for the best effect. It still helps to put some curvature into the figure with shading, even though the dark outline will flatten it again.




***Stages of putting together a face, ellipse first, trim down, lines put in for features and then rough sketch***

Start with frame lines, simple circles, ovals and rectangles, and then fill them out. Keep your lines to a minimum and avoid too much detail as cartoons are meant to be simple. If you can design a nice little character, remember how you constructed it and use the same shapes to animate it. Animation can seem daunting but if you follow the techniques of professionals you can achieve good results. Start with a basic line drawing of your object and animate it in line, either by copying the block and drawing over it in another colour then removing the original lines before repeating the process, or by using multiple screens and treating them like a "flip pad", skipping backwards and forwards until you have the movement correct.

## Multiple screens

Some packages will even draw the "tweens" – the intermediate stages – for you, and allow you to cut them as brushes but this is generally limited to scaling and rotating if it's a picture cel rather than a moveable object.

Once you have your line drawings, the best way to detail them is with multiple screens, or by cutting a stage into a brush and printing it over it's predecessor, then using "undo" a few times to see the differences. Deluxe Paint and NeoChrome Master will allow you to chain frames together to review an entire sequence.

Now we come to the nitty-gritty, getting your chosen picture onto the screen.

Take your drawing or photograph and put a grid over it, on tracing paper. Cut it into little manageable blocks, and transfer each one carefully onto the screen, which you grid in the same way. Concentrating on a small area is much easier than trying to draw the whole thing straight away and a small drawing or photo can easily be scaled up this way.

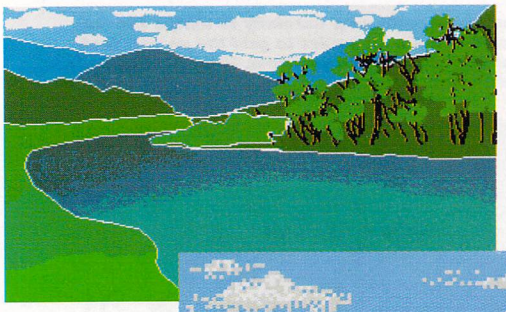
## Copying

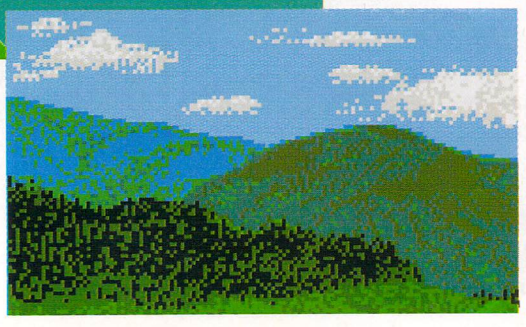
It's also possible to tape a traced drawing over the screen and draw in black on white behind it. There's a handy little gadget available called a Tracey, which is a cross-hair puck you can attach to the side of your mouse. By keeping the mouse straight and following the lines of a drawing with the cross, your image can be transferred to the screen. Those of you who feel you can justify the expense might consider investing in a graphics tablet, and there are several digitisers available.

Silica Shop have the 1st CRP tablet, which is A4 size, for £323.85, or the Cherry tablet – A3 size, with puck – for £646.25. I've used the CRP for a couple of years, although not all graphics packages will run with it – it needs a driver loaded as a desktop accessory, some packages tread on the ACC, some have their own drivers which aren't compatible with the CRP – I find it indispensable for transferring my drawings to screen.

Getting the outlines into the computer is the point where most people fail. If the basic lines are wrong, the piece won't succeed as a whole. If you're not confident in your start, go back and try again.

Now you have the lines drawn, the next step is to choose a rough palette. Using your source material – or your imagination! – divide the colours into groups – reds, browns, whatever, and select about three shades for each one. Try to leave a spare slot or two in your palette because you almost always find that you need extra colours as the work progresses. Test your palette roughly by filling large areas of the drawing with approximate colour, and tweak them until you're happy with the shades. You ➤





***Composition lines are drawn in first and block-filled in solid colour to help with the palette adjustment. Detail the surfaces and anti-alias***

## The software

**Arts 0927 473556/0753 49422**
*The old workhorse. Text-based menu system, multiple screens if you have the memory, lots of useful tools and special features although some are fairly slow by today's standards. Still, a must. The PI* file format virtually became an industry standard. Good clear manual, reliable, excellent value for money.*

**Neochrome v1.0**
**Widely available**
*This package defined the basic range of tools for the ST, and although it uses a split screen format which some users dislike, the good-sized magnification hot–spot makes up for it. No frills or tricks here, just good, easy to use tools. If you don't have a copy already you must have been up a mountain in Tibet for seven years. Essential for beginners.*

**NeoChrome Master**
**Widely available (also see *Atari ST User* June 1991 CoverDisk!)**
*Update of the classic – improved file handling with more formats including IFF, animation which actually works (very well), raster handling to allow 16 colours per screen line, STE support and a powerful rotation tool. Lots of extra features which bring this friendly old package right up to date. One of the best.*

Deluxe Paint £49.99 Electronic Arts
*Lots of work screens and powerful tools make this a winner. Very flexible and friendly front end, either icon or keyboard driven so menu bar and box can be removed. Excellent brush manipulation, STE support, good palette and fill functions, Bezier curves, stencilling to fix colours and a wide range of file formats in disk ops. Sophisticated animation and strong special FX. Highly recommended. Watch out for DPaint 2, coming soon!*

**OCP Advanced Art Studio £19.99**
**Datel Electronics 0782 744707**
*All the usual tools, excellent sprite and animation designer except that blocks are fixed sizes up to 64x64. Good data output for source. Reasonable tools and fairly easy to work with. Clear manual and graphics tablet driver written in (not compatible with CRP 1st tablet).*

**Paintworks £34.95**
**Activision 010 33 1 49 10 9995**
*Old and a bit primitive now, but hiding behind an awkward front end are some powerful tools if you can find them.*

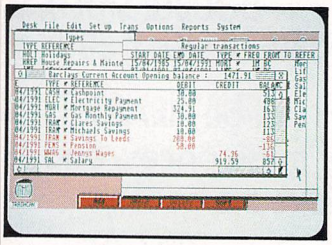
**Canvas £14.95**
**Microdeal 0726 68020**
*Colour or mono. Lots of features and STE support. 3D object creator included, although it's a bit tricky to use.*

# Home Accounts 2

## *the best gets better...*

When Home Accounts was launched four years ago we had just one goal—to create the best home finance program. Over 30,000 of you agreed with us and purchased Home Accounts, not only for use in the home, but also for business, clubs and charities.

It seemed like a good idea to let you tell us exactly what to put into Home Accounts2.®



Which you did.

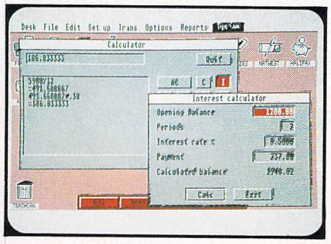
Some of you didn't like the restriction on the number of income accounts, expenditure types, and transactions. So we removed them.

Some of you wanted more graphics so we added pie charts, scatter and line graphs. We thought we'd better smarten up the bar graphs, so we added 3D effects, stacking and overlaying, and we made sure you can print them.

Many of you wanted to calculate mortgage rate changes, loan repayments, retirement planning and so on. So we added a pop-up calculator and interest calculator. There's also an option to take account of inflation.

Since nearly half of you use Home Accounts for small business bookkeeping, we added options for VAT and business style reports.

Then, our technical people added a little . . .

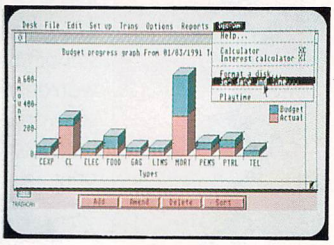


Investment accounts, net worth statement, password, cheque numbering, custom reports, flexible year period. And (to save you disturbing them on our free support hotline), an on-line help system, should you need it.

They also added our innovative *Human Interface Protocol*.™ Which, as you can see, sets a new standard in speed, style and elegance for the desktop. (It also contains a screen saver, *Playtime* games and a few other goodies.)

Commands are logically grouped under a series of pull-down menus, accessible either by the mouse or keyboard.

Home Accounts2 is written in the UK by Digita® Which means you'll be using a program designed for the way British finances work, and you'll know where to come for professional support.

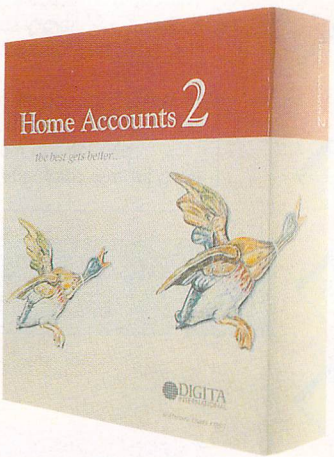


The only way you can really appreciate Home Accounts2 is to use it. Phone 0395 270273 for more information or, write to Digita, FREEPOST, Exmouth EX8 2YZ.

Home Accounts2 costs £54.99, which includes VAT, postage and packing. If you already own a home finance program and purchase Home Accounts2 direct from Digita, you can save £25 by returning your original program disks with your order.

As it turned out, listening to Home Accounts users was a pretty good way to write software. The best just got better.

Machine support
Requires ½ MB of memory
and double-sided disk drive
Supports: Mono and colour
ST. STe, Mega, TT.




DIGITA® INTERNATIONAL

*software thats right*™

Digita International Ltd Black Horse House Exmouth EX8 1JL ENGLAND Tel: 0395 270273 Fax: 0395 268893

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# PUBLIC APOLOGY

M.D. OFFICE SUPPLIES WOULD LIKE TO APOLOGISE TO ALL ITS COMPETITORS IN THIS MAGAZINE, WE SHALL AS EVER BE OFFERING DISKETTES, STORAGE BOXES ETC AT REMARKABLY LOW, LOW PRICES

## SEEING IS BELIEVING LOOK AT THESE **AMAZING PRICES**

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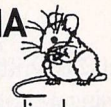

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Access VISA

➤ may find that adjusting a colour slightly will make it useful to another colour group, adding some green to a brown might make it fit with the ground tones for shadow. Adapt them a little if you can.

Many people make the mistake of concentrating on the fine detail in a picture too soon. You may be able to produce a beautiful tree in the foreground only to realise that you need to texture the ground surface and have to spray around it. Work on the scene as a whole for a while before starting on the fiddly bits.

It's useful to keep two screens going at the same time, so the background can be developed on one and objects within the picture on another. When ready you can cut them out and combine them. If you want to do it this way, it's essential to keep flipping backwards and forwards between the two, checking the colouring. You may find yourself carrying the brush of your finished tree onto a background where the colours merge and the outline is lost.

Try to work as much on the background as you do on the detail. A sketchy background with heavily detailed features can look interesting, but on the whole a better balance is achieved if the amount of work is even.

Anti-aliasing – filling in the intermediate shades between an object and its background colours – will make all the difference to the finished appearance.

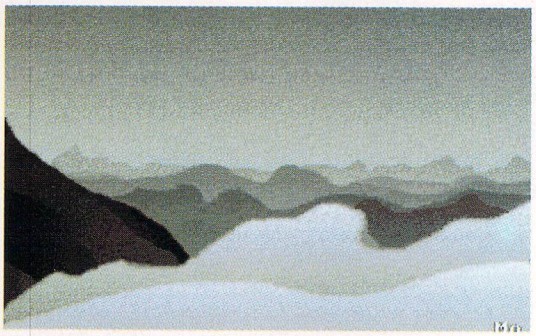
Some packages will perform this function for you, calling it "smooth" or "blend", but I have yet to find a piece of software which can do this as well as I can by hand. It's a time consuming and fiddly business but well worth it.

Varying the textures on the objects in the picture will make it more interesting – only using a single pixel spray to detail everything can look good, but putting short lines in some areas like tree bark or grass will help. Leaving some areas empty of texture – clouds, for example – should look better too.

Take care to keep the lighting consistent throughout your picture. Highlighting an area too brightly may bring it forward, too widely may flatten it out. Careful use of light, shading and shadow will give mass to your objects and emphasise their curvature. An object which is sidelit will have an extra dimension given to it by its shadow – it'll be the shape of its side view.

Obviously it's important to save your work regularly. This is one area where we have a large advantage over most media – we can go back to any stage of the picture if we don't like the way it's progressing and try again, and we can experiment with different effects without spoiling our work. Try doing that with an airbrush! I won't claim to have covered the subject extensively – there's a lot more to say – but I hope this rough guide has been of some help. There are lots of books available which can assist you further, either with general drawing or specific areas of it. You might find Castlesoft's Art Tutor (£19.95) useful too.

It describes many techniques needed to construct pictures on screen or paper with lots of suggested exercises for you to practice with, a library of pictures on disk and some onscreen demonstrations.



***A demonstration of tonal perspective, this took me about half an hour. After I'd chosen a range of bluish-greys from black to almost white, I used a gradient fill (on DPaint) for the sky, sketched in mountain lines and filled them in gradually darker tones from the back, adding a foreground band of snow. Each level of distance was re-filled in two colours using gradient fill again, and the edges anti-aliased in using a single pixel and "smooth" from the FX***

## Finally...

If you really want to be an artist, computer or otherwise, the best tip anyone can give you is: practice! Your first attempts may be disappointing but you'll learn from your failures. Try to work out where you went wrong, persevere with it and eventually you'll succeed. Finally, experiment. All art packages have their strengths and weaknesses, and the quality of the software won't make that much difference to your work. It's up to you to make the best of your talents and abilities.

There are a huge number of graphics applications available at the moment. I've listed as many as I can remember – please excuse the exceptions if you already have a favourite that isn't mentioned. Some of the packages date back to the mid-1980s, so don't be surprised if they're no longer readily available.

I've concentrated on colour painting utilities, not animators, 3D construction, CAD, object editors or mono-only.

Such packages are only listed if they are part of the function of the software but not its main purpose.

Good luck!

## The software

**First Paint £13.25**
**HAT Software 0743 249526**
*Good one for the youngsters to get started with, from the age of about five. Attractively presented, very simple and easy to use. The save and load options aren't quite so straightforward, but with a bit of practice your ankle-biters will be well into this one. Highly recommended for them.*

EZ Art PD
Floppyshop ST 0224 312756
*Good PD package, icon driven, friendly colourful user interface. All the essential tools for drawing and editing such as lines, circles, boxes etc, as well as fills and text printing. Great value.*

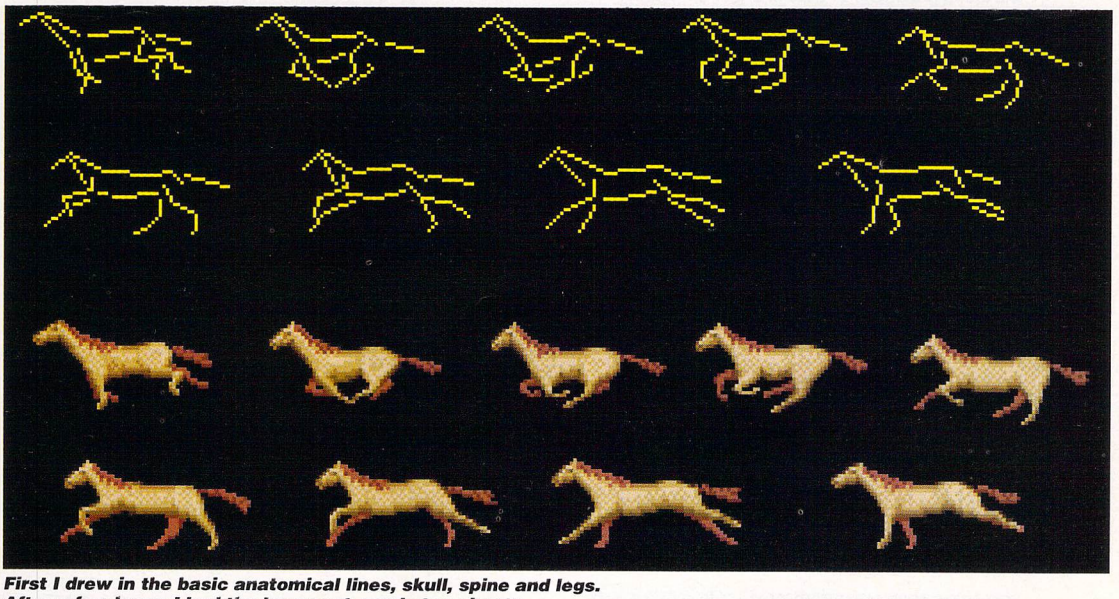
**Artifex £2.95**
**Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent ST3 1SW**
*This is licensed software. A clone of DegElite, it is a very comprehensive piece of software. Switch between screen and menu a la Degas – all the usual tools are there, PI1 format. Worth every penny.*

**STOS Master Paint £14.95**
**Stallion Software 0752 569781**
*Written in STOS Basic, this runs either in the normal way from Desktop or as an accessory in STOS. Three levels of zoom, all the standard tools but brushes and fill patterns aren't user-definable. Some special tools and a separate screen displays all 512 colours. Up to 100 user-definable palettes of 16 colours can be created. 512 colour drawing is provided but it's tricky to use. The manual is a bit weak and there isn't STE support, but a good one for STOS owners.*

**Art Director**
**Discontinued, but try**
**Mindscape 044 486 761**
*Another old package but quite a goody. All the usual tools on a slidable bar but where this scores is in some neat extras held in the drop down menus. Remap, Bend, Bulge, Scrape, Melt, Perspect and Shear amongst others, and excellent brush manipulation.*

*It fails on a few points. The close up hot-spot (not the only zoom) is too small to be useful and the file format is unique and peculiar but a conversion utility was supplied.*

**Public domain**
*Lots of good packages available from most libraries, Sphinx Software does an excellent* **Art Pack for £9.99** *– write to:*
*Erw Fynydd, Carmel, Llanelli, Dyfed SA14 7SG*
***Contacts:***
*CastleSoft, Levenmouth Business Centre, Riverside Rd, Leven, Fife KY8 4LT*
*Tel:0333 21243*
**Tracey, £9.95**
*from Sidewise Ltd, PO Box 4, Totnes, Devon TQ9 7EN*
*Silica Shop, 1-4 The Mews, Hatherley Rd, Sidcup, Kent DA14 4DX 081-309 1111*



***First I drew in the basic anatomical lines, skull, spine and legs. After a few hours I had the lower set, ready to animate***

# THIRD COAST TECHNOLOGIES

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## Atari Hard Drives Specialists

### Third Coast Hard Drives

Third Coast have been well established now for years in the Atari Hard Drive market. Third Coast have been the leading Atari Hard Drive manufacturer over the last eighteen months and we offer full technical support Monday to Friday 9-5 unlike some competitors. We offer a product which has been on the market for years which has been tried and tested and sold worldwide.
The idea of a hard drive without power supply is not new. Indeed! a prototype was built some time ago by Third Coast Technologies. The reason the drive was not released onto the market, was because overloading, of the power supply causes voltage fluctuations, which leads to unreliable data transfer.

### Expandability

With Third Coast's range of Atari hard drives you have the ability to expand by adding a second drive or even a 155mb tape backup device.
The drives also have DMA in & out and also SCSI in & out.

### Software

All Third Coast's Atari hard drives include a free set of software utilities which includes a word processor, database, spreadsheet and loads of other handy utilities. Also included are excellent ICD Hard Disk utilities which include formating, partitioning, auto-booting and a great deal more hard disk related software.

### Features

All Third Coast's hard drives come supplied with a battery backed up clock as standard. The drive is also fully autobooting and has automatic headparking so there is no need to run a program to park the heads. High speed programable caching software is also included with the drive. The unit has an internal 65 watt switching power supply which is capable of powering two hard disk drives.

### STE Compatible

Third Coast's Atari drives are fully compatible with all Atari STE machines. Using the drive on the Atari STE machine will not cause problems such as data transfer errors unlike some competitors drives.

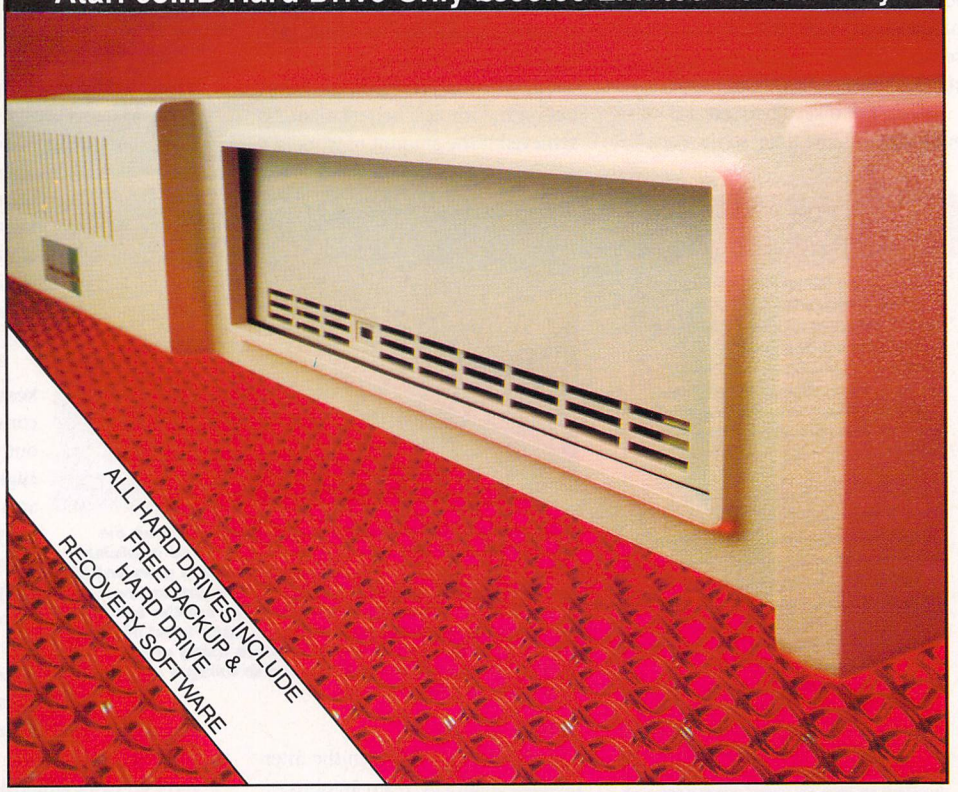
### 155MB Tape Backup

As well as supplying a large range of hard drives we also sell a 155MB tape backup device which can be used with all Atari hard drives. The unit will backup 20megs of data in under 2 minutes. It uses industry standard CT600N cassettes.

For more information call
Third CoastTechnologies.

# AUTUMN MADNESS

## Atari 65MB Hard Drive Only £399.99 Limited Period Only




### DIY Kits

Third Coast also provide kits so you can take advantage of any bare hard drive mechanism you may have. We offer complete cased kits for SCSI drives and also ST506 drives both of which include all cables, software and manuals to get you started.

### DIY Kit Pricing

| | |
|---|---|
| ICD DMA/SCSI Adapter no clock | £74.99 |
| ICD DMA/SCSI Adapter with clock | £99.99 |
| Omti 3527 SCSI/ST506 Controller | £79.99 |
| Complete kit ready for SCSI drive | £179.99 |
| Complete kit ready for ST506 drive | £229.99 |

Drive upgrades available for SH204/5, Megafile 20/30/60 and Supra drives call for prices and details.

### Hard Drive Pricing

| | |
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| 32M/Byte SCSI hard drive 25 milli auto park | £319.99 |
| 52M/Byte SCSI hard drive 10 milli auto park | £399.99 |
| 65M/Byte SCSI hard drive 25 milli auto park | £449.99 |
| 85M/Byte SCSI hard drive 25 milli auto park | £499.99 |
| 106M/Byte SCSI hard drive 10 milli auto park | £529.99 |
| 155M/Byte SCSI Tape Backup Device | £599.99 |
| 155M/Byte Tape Backup and 50MB drive | £899.99 |
| 22M/Byte Supra hard drive | £379.99 |
| 32M/Byte Supra hard drive | £349.99 |
| 50M/Byte Supra hard drive | £429.99 |
| 65M/Byte Supra hard drive | £479.99 |
| 85M/Byte Supra hard drive | £529.99 |
| 106M/Byte Supra hard drive | £599.99 |

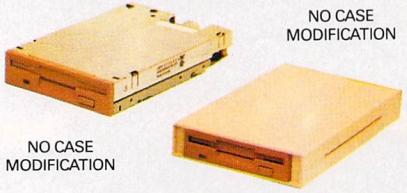
Call for more details on Supra hard drives

**WARRANTY** All hard drives carry a full twelve months warranty and free twelve months telephone support

## Other Products

### Internal & External Floppy Drives

All floppy drives include free software utilities




1MB internal replacement offers extended track count up to 84 tracks fully software compatible slight case modification required supplied with full fitting instructions. External drives have built in PSU.
1MB internal 80 track £49.99 1MB internal 84 track £59.99
1MB external 80 track £54.99 1MB external 84 track £59.99
Add £5 if you wish to receive a virus protector.

All floppy drives include a free extended formater, copier, Ram checker, virus killer, sector editor and drive speed tester!

### GST 40E Genlock

The GST 40E is a high quality genlock and pal coder unit. It offers resolution capacity of 625 lines. The equipment genlocks Atari computers to a reference signal, or a studio blacksignal and keys the computer image into the reference video. By connecting the genlock to computer's video port and to a reference video pal signal or studio colour black, the Atari computer becomes a high performance tool perfect for video titling, animation and graphics. The GST 40E does not produce degradation of the reference video and encodes the Atari video into a composite video output. The GST 40E will allow you to record animation titling over live video. You could use a camera and title a still photo or moving pictures. Alternatively you can record animation or put names, addresses or whatever you want over your favourite video title. The scope and features are endless it's down to your imagination. The GST 40E is fully software compatible with Degas, Neochrome, Cyber and indeed all Atari ST related software. £249.99

E&OE — Advertised prices and specifications may change.

# COVERDISK

**This month the CoverDisk is absolutely crammed full of the very best software: great games, the ultimate utilities and truly devastating demos. Read on!**

## SIDE ONE

### Obitus

If you go down to the woods today, you're in for a big surprise. And we're not talking Teddy bears here!

### Serendipity

**Serendipity** *(se-ren-dip-ity) n.* the faculty of making happy discoveries by accident. You'll become less than serene once the program starts insulting you!

### STOS

All the programs to support our STOS series to save your weary typing finger(s).

### Module Converter

If you've created song modules using the PD version of the TCB Tracker, then this utility is the one for you. It converts between the PD format and the commercial format, as given away on our July CoverDisk.

### Midi Programming in C

The programs supporting this series can be found in full on the disk.

### Avant Vector

A working demo of this superb vector drawing package, with only the Save option disabled.

## SIDE TWO

### AccTool

A multifunction utility which lets you perform almost any function you care to name, and it runs as a desk accessory or a program.

### Inside the STE

If you've got an STE, then this is where to look for the programs accompanying the series..

## Obitus

Configuration: All STs. Low resolution. Colour only.
Filenames:
Folder: OBITUS
OBITUS.TOS - The Demo Program

*Running Obitus*

Running Obitus couldn't be much more simple. Just double click on OBITUS.TOS (You did make sure you were in low resolution, didn't you?) then use the mouse to select the required action from the menu at the bottom of the screen.

Obitus finds you "lost and alone in a world not your own" where "Trolls, dwarves, knights wizards and kings infest the four shires." It all sounds remarkably like the ST

***The sanctuary of the Tower lies beyond the door, while the danger of the forest waits***

## Module File Converter

Configuration: All STs. Mono or colour
Filenames:
Folder: CONVERT.MOD
CONVERT.PRG - The Module Conversion program
CONVERT.TXT - Instructions for using the program
CONVERT.RSC - Resource file for the program.

*Running the TCB Tracker Module Converter*

To run the program, simply double-click on CONVERT.PRG. Follow the onscreen prompts to convert your modules.

The public domain demo of the TCB tracker used a slightly different file format to the commercial version, as given away on our CoverDisk in July. Frustrated Trackers need fret no longer, as this program will convert from the PD file format to the new file format, for both MOD and SNG files.

# Midi Programming in C

Configuration: All STs. Midi equipment required.
Filenames: Folder: MIDIC
CHORDORG.C, INFERNAL.C, STYLOPHO.C - C Source code
CHORDORG.PRG, INFERNAL.PRG, STYLOPHO.PRG - The compiled programs
README.DOC - The article accompanying this month's programs

### *Running Midi Programming in C*

The programs supplied here accompany the Midi Programming in C series. This month's final article is on the disk (README.DOC). If you are going to make any changes to the programs, they should be copied to another disk first.

# Beyond STOS

Configuration: All STs. Colour only
Filenames Folder: STOS PROGRAM.BAS, SUBROUT.BAS - The STOS Programs
PIC.NEO - Example screen required by the programs

### *Running Beyond STOS*

The programs supplied here accompany the Beyond STOS series in the magazine, and can only be used by loading into STOS. If you are going to make any changes to the programs, they should be copied to another disk first.

Full instructions can be found in the Beyond STOS pages of the magazine.

# Inside the STE

Configuration: STEs only, colour only
Filenames: Folder: SIDE2\STE
SCROLL.S, WOBBLE.S - The Assembler source code to accompany the series
SCROLL.PI1, WOBBLE.PI1 - Example screens required by the programs
SCROLL.TOS, WOBBLE.TOS - The assembled version of the programs
STEPAL - Folder containing STE Palette editor desk accessories

### *Running Inside the STE*

The programs supplied here accompany the Inside the STE series in the magazine and can only be run on STE computers. If you are going to make any changes to the programs, they should be copied to another disk first.

Full instructions can be found in the Beyond STOS pages of the magazine.

The Files in the folder STEPAL should be copied to the Root Directory (ie not in a folder) of your boot disk in order to be available. See the file STEPAL.DOC for full information. This can be read by double clicking on it, then selecting Show from the Alert box which appears.

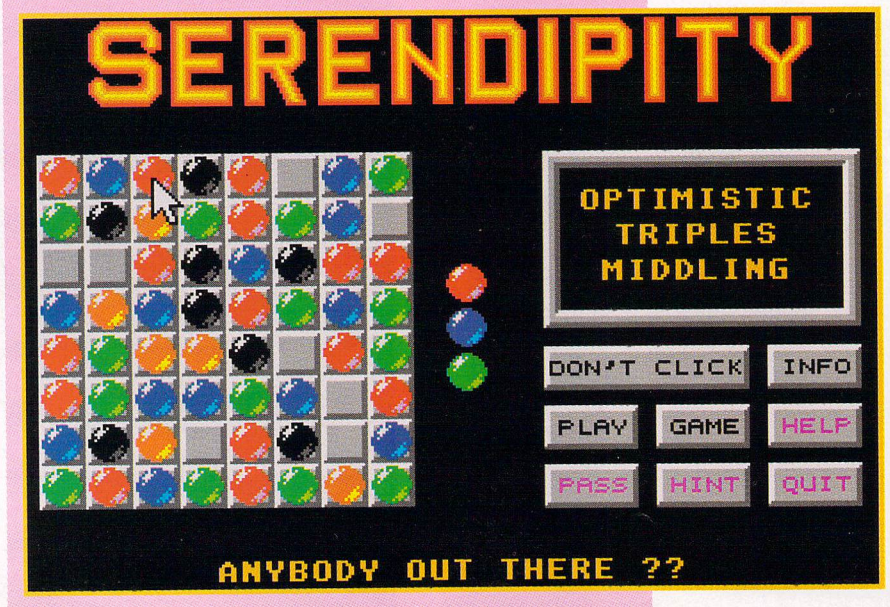
# Serendipity

Configuration: All STs. Low Resolution. Colour only.
Filenames: Folder: SRNDPTY
SRNDPTY.PRG - Program itself
SRNDPTY.SCR, SRNDPTY.SND - Data files required by the program
READ.ME - Program documentation
SOURCE - Folder containing the C source code for the complete game

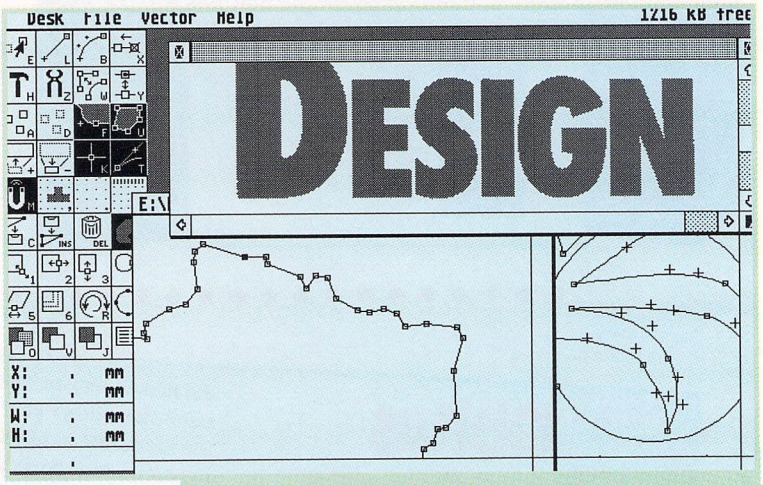
### *Running Serendipity*

Make sure your ST is in low resolution, then double click on SRNDPTY.PRG. Help is available by clicking on the Info and Help buttons.

Full instructions can be found within the program, but do make sure you try every option to get the best response from the program! Oh, and you wouldn't dream of pressing the button labelled "Don't click", would you?




***With Serendipity the computer not only plays a mean game, it also insults you if you take too long or make a mistake***




# Avant Vector

Configuration: All STs. Mono only
Filenames:
Folder: SIDE2\AVANT
AV_HELP.TXT - Information and tutorial for using this demo.
AV_DEMO.PRG - The demo program itself
DESIGN.IMG, FRANCE.CVG
OASIS.CVG - Example graphic files to use in Avant Vector.

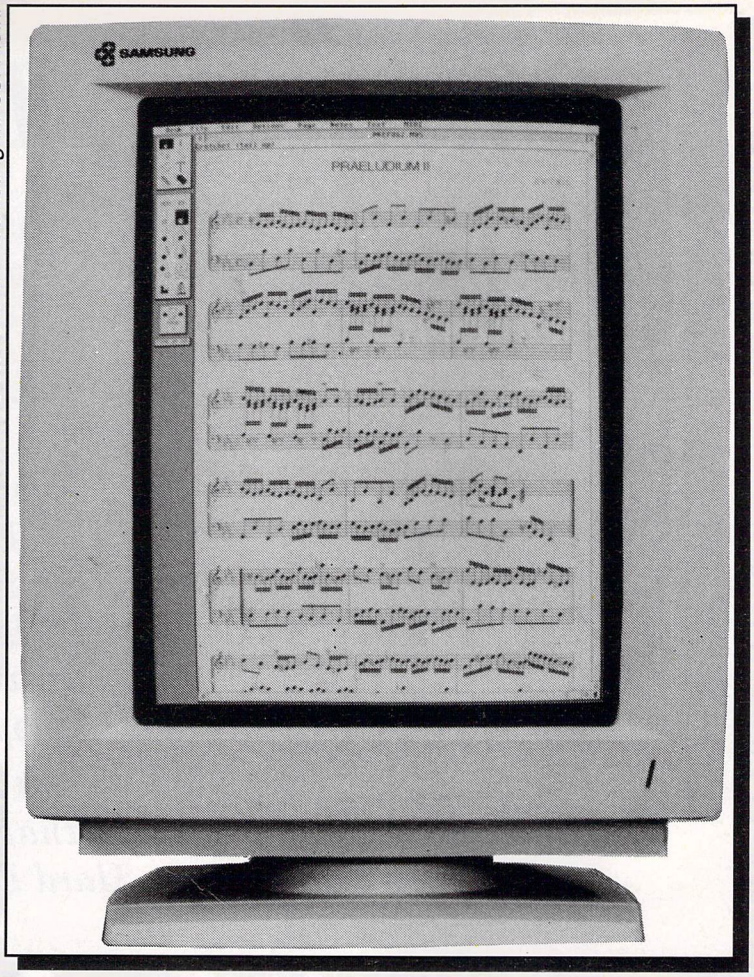
### *Running Avant Vector*

Full documentation on running Avant Vector is the file AV_HELP.TXT. Double click on this file, then select Show from the Alert that appears to read the instructions. For help during the program, right-click on an icon, or point and press the Help key.

Avant Vector allows you not only to manipulate vector graphics, but to create vector graphics automatically from a bit-image graphic. The demo supplied here is fully functional except for the Save and Print options.

# Reflex Graphic System

## ... Now for the Atari STe !!




Monitor shown - Samsung MP5671 15in.

## ❊ Reflex 1024 Card ❊

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  *– Actual screen display without scrolling*
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# Music DTP v2.1

## by

# Take Control

***The Ultimate Notation Program***

***– MUSIC with MIDI –***

## ❊ Music DTP v2.1 ❊

- ♪ *The Ultimate Music Publishing System*
- ♪ *Highest quality print–out available*
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- ♪ *Note entry from MIDI keyboard*
- ♪ *Playback via MIDI or sampled sounds*
- ♪ *Import/Export of MIDI & Graphic files*
- ♪ *Edits scores up to A3 size*
- ♪ *Compatible with standard Atari hi–res and Reflex High–Resolutions (see above)*

## Prices

| | | |
|---|---|---|
| Reflex 1024 Graphic Card | £249 | £1.00 |
| Reflex/e Adaptor for STe | £25.50 | £1.00 |
| Music DTP v2.1 | £260 | £2.00 |
| Music DTP demo disk | £15.00 | £1.00 |
| Samsung 15" A4 Monitor | £399 | £10.00 |
| Eizo 17" Flexscan CAD | £699 | £13.00 |
| Hitachi 21" A3 FST Monitor | £795 | £15.00 |
| Eizo 21" A3 Flexscan | £995 | £16.00 |
| Atari TT Monitor Cable to Eizo | £24.95 | £1.00 |

## Carriage

Atari TT ... Please call for prices

All prices exclude VAT

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VISA

Access

# Full PC AT Power for Your ST

TOS DOS

ST FORMAT GOLD

ST Format Gold 92%
Issue 25 – August '91

*The new SCplus 286 co–computer is not an emulator, it is a full 16 MHz 286 PC AT computer that you attach externally to your Atari ST or TT. This gives you full TOS/DOS multi–tasking power at your fingertips – you can run an animation package on the PC while you desktop publish on the ST!*

*The SCplus 286 has two built in 16 bit PC slots that allow the use of any PC card that you desire – Super VGA, Scanner, Hard Drive, Fax Card, etc.*

*Comes complete with:*

*1Mb Ram (expandable to 2Mb or 4Mb)*

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## Spectacular New Price

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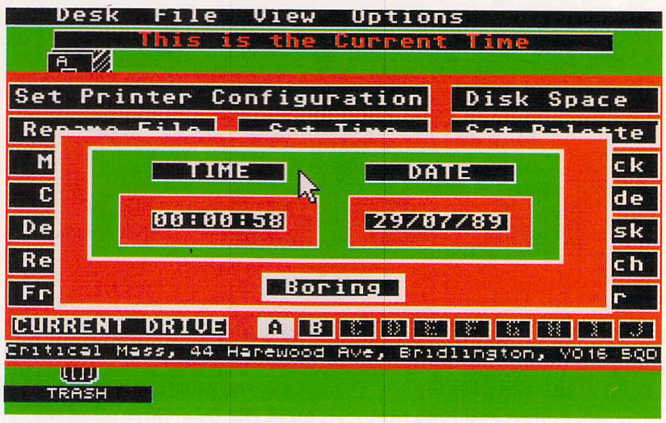



***One of the, erm, less interesting options available from AccTool***

# AccTool

**Configuration: All STs. Colour or mono.**
**Filenames:**
**Folder: SIDE2\ACCTOOL**
**X_ACCTL.TOS - The self extracting archive program**
**READ.ME - Instructions for de-archiving the program.**

### *Running AccTool*

The program and data for AccTool have been archived to fit on the CoverDisk. To de-archive the files, copy X_ACCTL.TOS onto a blank, formatted disk, then double click on it. Full de-archiving instructions are contained in the disk pages. *This program should not be run from the CoverDisk directly.*

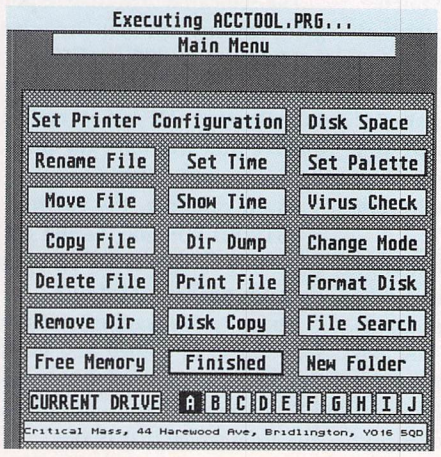
Once de-archived, the following files should be on the disk:
ACCTOOL.ACC - The desk accessory version of the program
ACCTOOL.DOC - The program documentation
READ.ME - A list of the files which should be available
ACCTOOL.PRG - The executable version of the program
ACCHI.RSC - The resource file for high resolution monitors
ACCTOOL.RSC - The resource file for colour monitors
ACCTOOL.TXT - The program documentation

To run AccTool you can either double-click on ACCTOOL.PRG or boot the ST with ACTTOOL.ACC and the relevant Resource file in the Root Directory (ie not in a folder) of the boot disk. The two files ACCTOOL.PRG and ACCTOOL.ACC are, in fact, identical - simply renaming them with .PRG or .ACC will make them act as a program or desk accessory as required.

Full documentation on running AccTool is the file ACCTOOL.TXT. Double click on this file, then select Show from the Alert that appears to read the instructions.

AccTool gives you access to a number of functions, such as setting up your printer, copying files, formatting disks and so on, from a desk accessory. This gives you the freedom to carry out normal housekeeping tasks without leaving your program.

For example, as long as your software allows access to desk accessories, you can create a new folder while in your wordprocessor, or format a disk from you art package.




***The main menu showing AccTools many funtions***

# Fame and Fortune!

(Well, fame and a few quid anyway!)

Have you written a utility you just can't wait to share with everyone? Is your latest program the best of its kind? If so, send it to us. We only include the best software on the Atari ST User CoverDisk.

## TEN TIPS TO COVERDISK STARDOM

1. *Check your program before sending it in. Make sure there are no obvious bugs, and that it works "as advertised".*
2. *Where possible include only one submission per disk.*
3. *If at all possible, include an executable version of the program. If this is not possible, state in which language the program is written.*
4. *Write your name, address, phone number and the program name on the disk label.*
5. *Include a separate piece of paper describing the program and how to run the program. Also tell us what machine(s) the program has been tested on (eg 12k/1Mb memory STFM/STE). If possible also include a printout of any documentation.*
6. *State clearly whether the program is your copyright, or in the public domain or shareware etc. We are unlikely to pay you if the program is already freely available or has been published elsewhere.*
7. *If you want your disk back, enclose a large sae.*
8. *Send your program to Atari ST User CoverDisk Submissions, Europa House, Adlington Park, Macclesfield, SK10 4NP.*
9. *Be patient! Although we will acknowledge receipt of all programs, it takes some time to evaluate and test them on different machines.*
10. *Once the program has been evaluated, we will write and let you know. Even if we do not publishy your masterpiece, we will at least let you know why not!*

## What's in it for me?

Although getting a program accepted for the CoverDisk should be reward enough in itself, we do pay for original submissions. Don't expect to get rich, but programs of sufficient quality may earn you more than you think!

# CoverDisk Queryline

***Got a problem with the CoverDisk? Our Queryline will help you out.***

**Dial 0732 360966**
**Mondays from 3pm to 7pm**

Our Technical Editor will be working overtime every Monday – except Bank Holidays – to keep the Queryline open between 3pm and 7pm, allowing you time to get home after a hard day at the office or classroom.

Before calling the Queryline please check that you have made every attempt to get around the problem yourself.

Read the instructions in the disk pages carefully and check for any instructions on the disk. If possible phone with the disk and ST in front of you. Make sure you know which issue CoverDisk you are having problems with, the name of the program, what model ST you have and exact details of what your problem is.

Take a little time before ringing to write down all the details - it will save your phone bill.

Please be aware that, although we do check the programs before they get onto the disk, we have not programmed them ourselves and so may not know the most intimate workings of all of them

CoverDisk queries received outside the hours of 3pm and 7pm on Mondays will not be answered. Sorry!

# Using the COVERDISK

*Follow these simple instructions to get the most out of your CoverDisk. It's easy when you know how!*

Some of the programs on the CoverDisk have been packed using an archiving program. This is done to ensure that we can fit as much as possible onto your Disk. To make the de-archiving process as painless as possible we have used a self-extracting archive program.

In short, this means that all you have to do is copy one program to a blank disk, then run it and all the archived files for that application will be extracted.

To make the self-extracting programs easier to spot, the filename used will always be of the format X_??????.TOS where ? may be any letter or number (X_RAMDSK.TOS for example may hold archived files for a ram disk).

If you find a file with this type of name, simply format a disk and copy the file to it. Then put the disk containing the program into the drive, and double click on the program. The files will extract themselves.

If you are still not clear on the procedure, follow the numbered instructions below for a step-by-step guide.

For this exercise we will assume the file is called X_PROGNM.TOS:

**1. Put the CoverDisk in drive A, switch on computer, monitor and any external disk drive.**

**2. Make sure you have a blank, formatted disk. This disk should not be write protected.**

**3. Ensure the CoverDisk is write protected and then put the CoverDisk into drive A.**

**4. Double click on the drive A icon on the Desktop to open a window.**

**5. Size the window so that the file is visible within it, and the drive A and drive B icons are visible on the Desktop.**

**6. Point at this file with the mouse pointer, press and hold the left mouse button, and drag the file over to the drive B icon. When the drive B icon is highlighted, release the mouse button.**

**7. If you have an external drive, put the blank, formatted disk in it now. Ensure this disk is not write protected.**

**8. An Alert box will appear, showing one file to be copied. Click on OK.**

**9. If you do not have an external drive: when prompted to insert Disk B in Drive A, put in the blank, formatted disk, ensuring it is not write protected, then click on OK. When prompted to insert DISK A in drive A, insert the CoverDisk and then click on OK. Repeat this as often as requested.**

**10. Put the previously blank disk in drive A.**

**11. Reboot the computer by pressing the reset button.**

**12. Double click on the DRIVE A icon. This will open a window.**

**13. The window should contain just one file, X_PROGNM.TOS. Double click on this.**

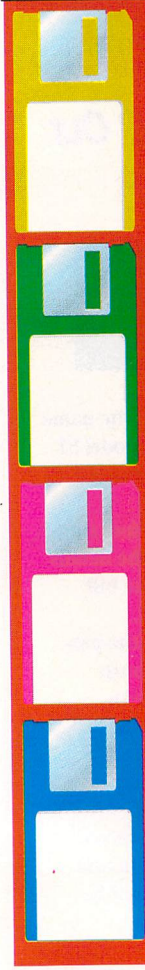
**14. The program will now automatically de-archive all of the files, writing them to the same disk. While it runs, a list of filenames will be displayed on the screen. When finished, the Desktop will return, with the window now containing a number of files as well as the X_PROGNM.TOS file.**

**15. Point the mouse pointer at the file X_PROGNM.TOS, click and hold the left mouse button and drag the icon to the wastebin on the Desktop. When the wastebin is highlighted, release the mouse button.**

**16. You will be prompted that you are about to delete one file. Click on OK to confirm that this is correct.**

**17. The disk in the drive now contains the unarchived files. Depending on the programs concerned, you may be able to run them now, or further files may have to be de-archived first. Consult the instructions on the disk pages.**

## SIDE TWO SERVICE



### IMPORTANT ANNOUNCEMENT

Over the last few months there has been a steady decline in the number of readers who do not have access to a double sided disk drive, and therefore require the Side Two Service.

We need to know how many of our readers do *not* have access to a double sided disk drive, and therefore still require the Side Two Service.

If you need the Side Two Service either now or perhaps in the future, please write to Side Two Service, Atari ST User, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Remember, if you don't write we won't know you're out there. If we don't know you're out there, we may drop the dual format disk altogether. You have been warned!

### AT YOUR SERVICE

If you own a single sided drive, and you're dying to get your hands on the goodies on Side Two of the CoverDisk, don't despair!

Just send a cheque or postal order for £1.50 for each of the two disks required to *Atari ST User* Disk Offer, Europa House, Adlington Park, Macclesfield SK10 4NP. We'll put the programs from Side Two on to a single sided disk and send it out to you.

If you only require the second side of one of our CoverDisks, please be sure to let us know which one! Remember, it is £1.50 per disk.

## ARCHIVING – WHAT IT ALL MEANS

Many programs on the ST are large and use lots of files, such as resource files for a Gem program, data files for a spreadsheet, or tune files for a music program. In order to fit as many programs as possible onto the CoverDisk, complete with all their associated files, the archive program was written.

Although there are a number of different versions of the archiving program they all achieve more or less the same result. A number of files are taken, compressed and merged together to form one large file, which is smaller than the sum of the individual files.

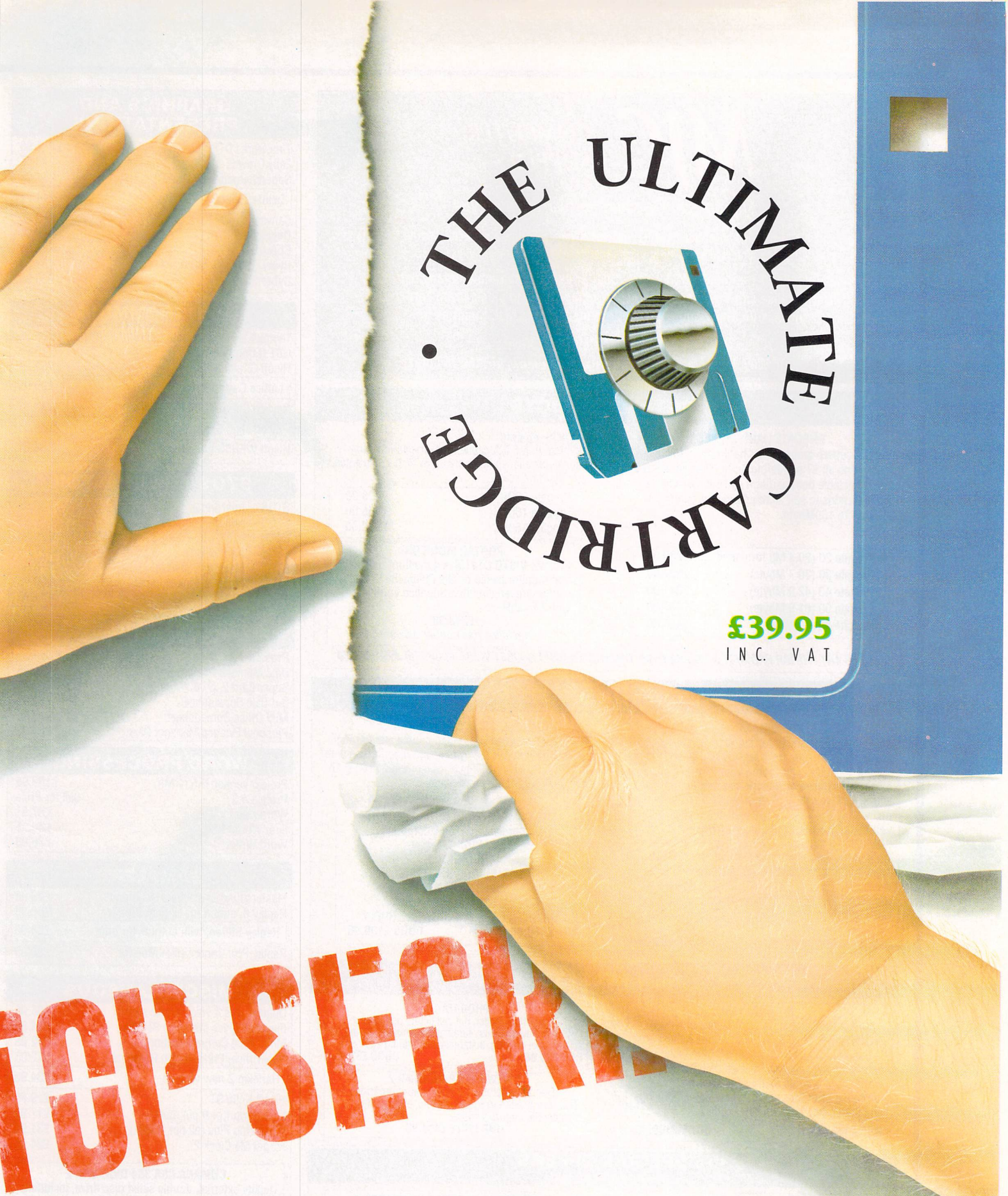
To extract the original files from this archive it's usually necessary to run another program which loads the archive file and writes the uncompressed files back to disk. This method was previously used on the CoverDisk, using the program ARCX.TTP. But to make things simple, we're now using a self-extracting archive.

This is a utility which turns an archive file into a program which, when run, extracts all the files from the archive and writes them to disk. No more ARCX.TTP.

The self-extracting archive program appears just like any other program on the ST, and for this reason we've adopted the following standard. All self-extracting archive files will have the prefix X_ and the suffix .TOS

As an example, the filename X_1STWRD.TOS may be the self-extracting archive of the 1st Word program and associated files.

These self-extracting archive files should be copied to a blank disk before being run because they will attempt to write out to the disk from which they're run.

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| 11587 | 13955 | 18821 | 25194 | 30487 | 32756 | 37768 | 42374 | 47771 | 54505 |
| 11642 | 13987 | 18922 | 25273 | 30554 | 32769 | 37843 | 42445 | 47991 | 54686 |
| 11845 | 14008 | 19233 | 25376 | 30612 | 32864 | 37946 | 42685 | 48133 | 54739 |
| 11857 | 14111 | 19573 | 25487 | 30647 | 32888 | 38018 | 42788 | 48224 | 54876 |
| 11954 | 14156 | 19768 | 25505 | 30699 | 32954 | 38199 | 42873 | 48435 | 55078 |
| 11976 | 14264 | 19946 | 25674 | 30753 | 33004 | 38276 | 42965 | 48550 | 55186 |
| 11988 | 14364 | 20018 | 25732 | 30794 | 33165 | 38367 | 43006 | 48774 | 55298 |
| 12056 | 14485 | 20199 | 25843 | 30800 | 33276 | 38400 | 43076 | 48811 | 55397 |
| 12146 | 14499 | 20286 | 25902 | 30832 | 33387 | 38487 | 43102 | 49458 | 55453 |
| 12295 | 14576 | 20398 | 26176 | 30856 | 33487 | 38586 | 43117 | 50010 | 56494 |
| 12376 | 14663 | 20400 | 26223 | 30911 | 33594 | 38631 | 43213 | 50499 | 56578 |
| 12390 | 14667 | 20631 | 26583 | 30915 | 33643 | 38724 | 43323 | 50655 | 56789 |
| 12454 | 14756 | 20881 | 26642 | 31002 | 33780 | 38787 | 43487 | 50983 | 56880 |
| 12487 | 14769 | 20991 | 26731 | 31065 | 33873 | 38994 | 43578 | 51024 | 56934 |
| 12554 | 14864 | 21076 | 26849 | 31101 | 33995 | 38881 | 43621 | 52349 | 57123 |
| 12612 | 14888 | 21165 | 26932 | 31155 | 34100 | 38991 | 43775 | 52505 | 57145 |
| 12647 | 14954 | 21234 | 27089 | 31185 | 34211 | 38234 | 43876 | 52857 | 57287 |
| 12699 | 15004 | 21456 | 27287 | 31274 | 34265 | 38456 | 43946 | 53002 | 57354 |
| 12753 | 15165 | 21544 | 27374 | 31288 | 34465 | 38785 | 44100 | 53065 | 57498 |
| 12800 | 15276 | 21785 | 27494 | 31310 | 34533 | 39001 | 44287 | 53101 | 57567 |
| 12832 | 15387 | 21974 | 27588 | 31398 | 34753 | 39273 | 44394 | 53155 | 57689 |
| 12856 | 15487 | 22001 | 27622 | 31421 | 34888 | 39387 | 44443 | 53185 | 57702 |
| 12911 | 15489 | 22163 | 27832 | 31425 | 34980 | 39407 | 44586 | 53274 | 57889 |
| 12915 | 15594 | 22273 | 27990 | 31487 | 35010 | 39588 | 44622 | 53288 | 57999 |
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| 13065 | 15780 | 22588 | 28048 | 31588 | 35463 | 39711 | 44865 | 53398 | 58237 |
| 13101 | 15791 | 22711 | 28176 | 31611 | 35524 | 39740 | 45003 | 53421 | 58315 |
| 13155 | 15873 | 22980 | 28284 | 31622 | 35638 | 39765 | 45104 | 53425 | 58487 |
| 13185 | 15995 | 23187 | 28398 | 31682 | 35777 | 39876 | 45286 | 53487 | 58569 |
| 13274 | 16100 | 23294 | 28476 | 31705 | 35839 | 39932 | 45387 | 53523 | 57694 |
| 13288 | 16265 | 23312 | 28543 | 31739 | 35924 | 40153 | 45498 | 53567 | 58898 |
| 13310 | 16309 | 23476 | 28658 | 31783 | 36001 | 40296 | 45553 | 53588 | 58943 |
| 13398 | 16465 | 23576 | 28862 | 31801 | 36123 | 40342 | 45639 | 53611 | 59154 |
| 13421 | 16533 | 23645 | 28993 | 31827 | 36153 | 40494 | 45763 | 53622 | 59214 |
| 13425 | 16650 | 23649 | 29286 | 31856 | 36295 | 40583 | 45843 | 53682 | 59345 |
| 13487 | 16753 | 23765 | 29475 | 31871 | 36299 | 40645 | 45990 | 53705 | 59486 |
| 13523 | 16888 | 23876 | 29498 | 31923 | 36354 | 40888 | 45996 | 53739 | 59564 |
| 13588 | 16980 | 23888 | 29587 | 31936 | 36488 | 41000 | 46187 | 53783 | 59668 |
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| 13622 | 17164 | 24005 | 29845 | 31987 | 36645 | 41236 | 46395 | 53827 | 59824 |
| 13682 | 17265 | 24109 | 29857 | 32008 | 36743 | 41394 | 46494 | 53856 | 59991 |

- If your GRAND GRAB number from *Atari ST User* issue 68 (October 1991) matches any of those listed above, carefully complete your claim form.
- Photocopies of winning GRAND GRAB number panels will not be accepted.
- The first two fully completed GRAND GRAB claim forms to be drawn from the compiled entries on Thursday November 7, 1991 will each win a Golden Image Scanner. A further 80 winners will pick up great software prizes from Gremlin and Kixx.
- All remaining winners will collect various runner-up prizes including software, *Atari ST User* subscriptions and T-shirts.

## The prizes

### Get scanning

Break into image processing with the help of *Atari ST User* and Golden Image. Two lucky readers have won a superb 400dpi hand scanner from Golden Image. Check the number panel on this page and find out if one of them is you!

### Games galore

Thirty lucky winners will collect copies of Gremlin's smash hits HeroQuest and Switchblade 2, with an additional 50 winners collecting some classic games software courtesy of Kixx.

## GRAND GRAB claim form

Name _____

Address _____

_____

Daytime telephone _____

Attach GRAND GRAB winning number panel here:
(Photocopies not accepted)

**Question:**
What is the is the name of *ST Gamer's* News section?

**(a) Upfront** ☐ **(b) Onword** ☐ **(c) Newsbeat** ☐

Send this completed coupon to: GRAND GRAB CLAIMS, *Atari ST User*, Europa House, Adlington Park, Macclesfield, SK10 4NP.
All entries must be received before Thursday November 7, 1991.

1. *Atari ST User* GRAND GRAB is open to all readers with the exception of *Europress Group* employees, agents and advertisers.
2. Each claimant MUST complete the skill question on the GRAND GRAB claim form before their entry becomes valid.
3. The main GRAND GRAB prizes will be awarded to the first three claimants drawn from assembled entries on Thursday November 7, 1991.
4. All remaining claimants will receive unspecified runner-up prizes.
5. *Atari ST User* reserve the right to substitute prizes without notice.
6. The editor's decision is final and no personal correspondence can be entered into as a result of a GRAND GRAB claim.
7. All successful claimants will be listed in future issues of *Atari ST User*.

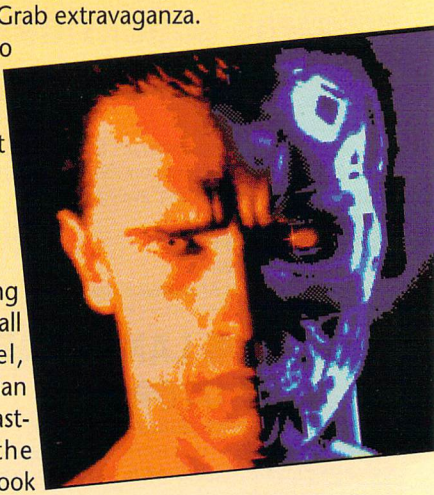
# GRA

# NEXT MONTH'S

## What's up grabs?

## Games galore from Ocean!

The *ST Gamer* team have been busy rounding up the very best prizes for this month's Grand Grab extravaganza. Topping the list we have two smash hit releases from Ocean, one of the beggest names in ST entertainment software.



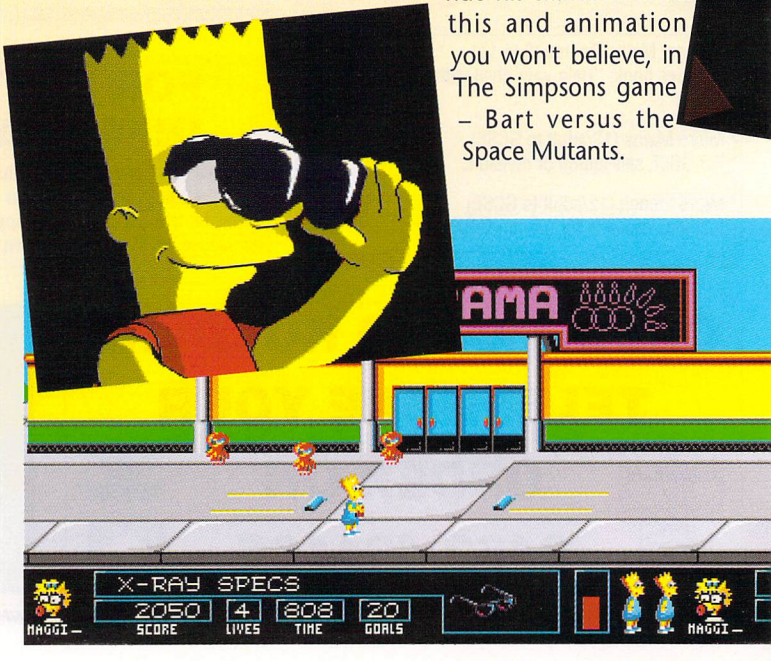
### It's nothing personal

Next month we will be giving away fifteen copies of Arnies all action movie sequel, Terminator 2. Join the Austrian T800 in level after level of blast-'em-up action. It's all in the game of the T-shirt of the book of the movie... and it can be yours totally free.

### Don't have a cow man

Thanks to *Atari ST User* and Ocean, you can join Homer, Marge, Lucy and Maggie and of course Bart in an everyday tale of American cartoon folk.

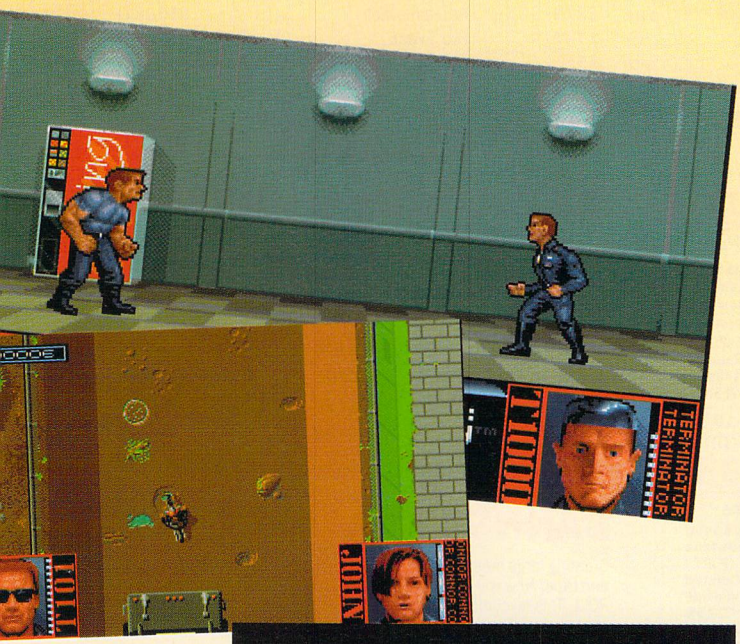
Fifteen lucky GRAND GRAB winners will be able to help Bart save planet earth from evil space mutants and still have time to ride his skateboard. All this and animation you won't believe, in The Simpsons game – Bart versus the Space Mutants.



# ND GRAB

# GRAND GRAB EXTRAVAGANZA

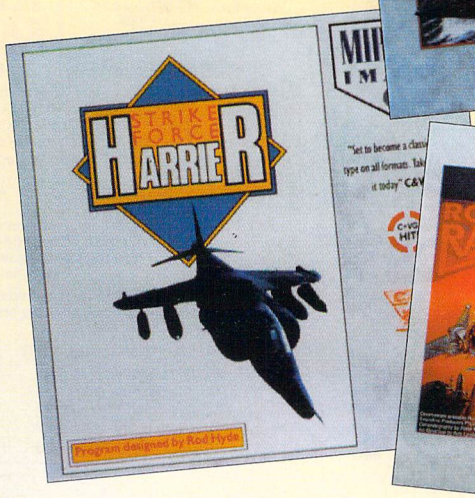
**Thanks to *Atari ST User* you can relax with the very vest in games action with the help of Ocean and Mirror Image**

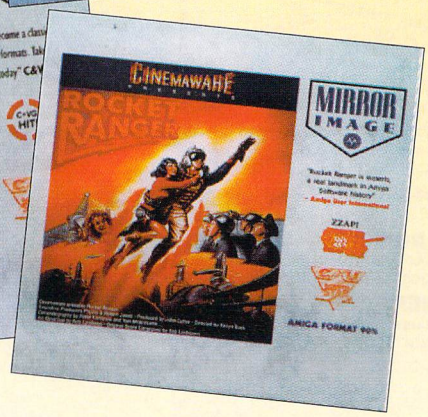


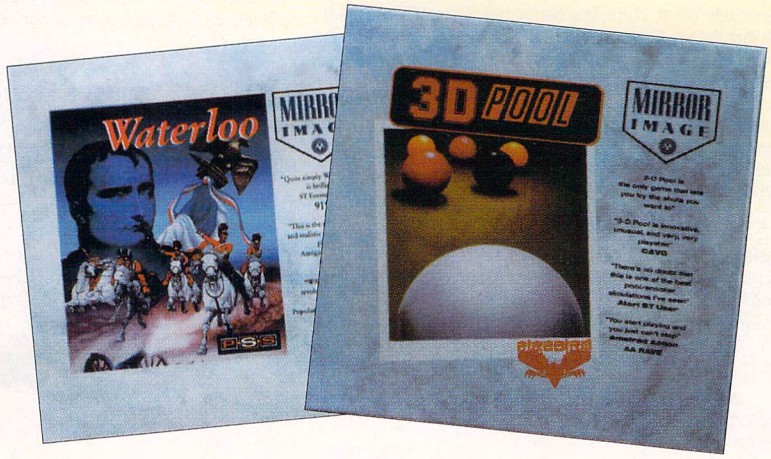
## A games grab bag from Mirror Image

Do you remember ST classics like Carrier Command, 3D Pool, Waterloo and Rocket Ranger? Well those awfully nice people at Mirror Image are giving these excellent games a new lease of life at a very affordable budget price.

We are going one better though! Thats right, next month *Atari ST User* will be giving away fifty Mirror Image classics totally free. All you need to do is keep this copy of *Atari ST User* safe until next month.



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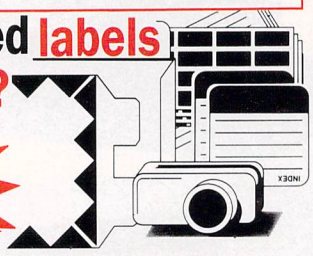


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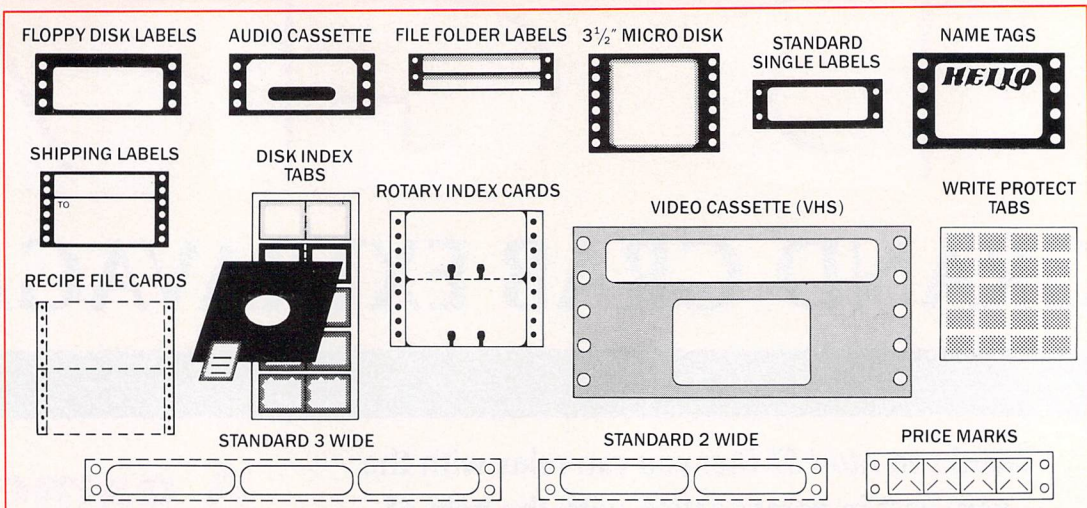


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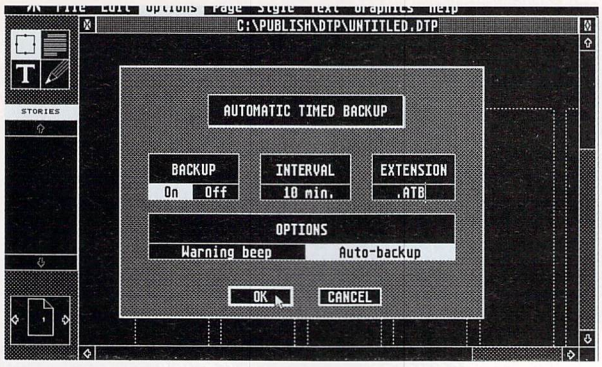
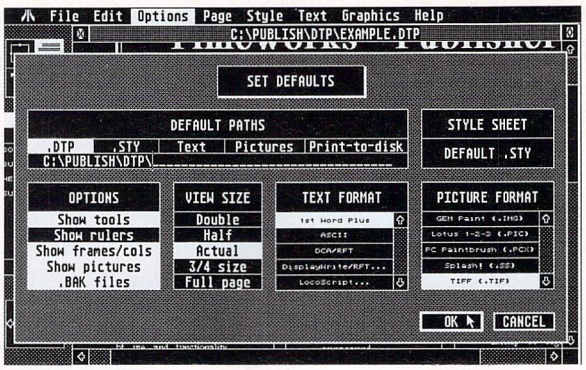



*You can tell Timeworks Publisher to save your current document after a preset interval, or to beep to remind you*




*Defaults can be set paths, import formats, view size and various system options*

Timeworks DTP or Timeworks Publisher ST as it prefers to be called, was first launched in 1987 and has become the staple diet of home publishers and a fair few business users ever since.

This is partly due to the program being the first desktop publisher on the ST and partly due to its reasonable price. It's mainly due, though, to the good smattering of useful layout and typographical controls built into an easy to use application which works at a reasonable speed, even on a single drive 520STFM.

The new package, inspiringly called Timeworks Publisher 2, follows the same basic philosophy and extends itself in several logical and helpful ways. All the features current users know and love are retained, while some of the more irritating shortcomings have been tackled – though not all. The result is a worthy update to the original.

The product reviewed here was a late beta-test sample, complete in nearly all aspects except the installation routine and extra fonts. It came with parts of a photocopied manual in a similar state of readiness. GST says that the finished product will look similar in most respects to the IBM PC version. This is a high quality, professionally finished package. If the sample ST manual pages are anything to go by, it will be an easy to read and comprehensive document in a larger than normal format.

## Pages and frames

Whereas paper sizes were restricted in the first version of the program, a much wider range is available now, including "A" sizes, organiser, fanfold and a custom options, where you can specify any size up to 22.5in square. You still have to specify the size of your paper before you start to lay out the page.

Master pages are handled much the same as before. You can add guides, repeating text and pictures to them, but can't import text, only type it direct from the keyboard. You can save master pages along with the paragraph tags which make up a style sheet, but you can now also save defaults paths for text and image files, and the settings of rulers, frames and view size.

Timeworks Publisher is a frame-based DTP, meaning that text, graphics, even single lines can only be placed on the page within a frame. This philosophy, which is tidy but can force a certain long-windedness, is kept up in version two. Now, though, frames can be grouped together and moved, copied or resized in one go. If you've put together the contents of an advert or coupon and want to shift it from one page to another, grouping can be very useful.

Pages themselves can be added and deleted singly or in ranges. If you want to re-use just the title page of a document, for instance, you can now delete all the other pages in one simple operation... and there can now be up to 999 of them.

The borders of frames are no longer sacrosanct. By selecting a custom border from the Repel Text dialogue you can redefine the left- or right-hand edges of the frame. The technique is rather like creating a string picture, by stretching the frame border around corners defined with the mouse pointer.

The most obvious use for this technique is to wrap text directly around a graphic, rather than just around the graphic frame. As before, when you lay a graphic frame on top of a text frame, the text automatically reflows around the graphics frame. Now, though, the frame needn't be rectangular.

Although manual adjustment is a more laborious technique than having an automatic wrap – particularly since there's no way of editing the custom border – it gives you the option of creating you own special wrapping effects. You can specify the stand-off of the text from the border's edge, too.

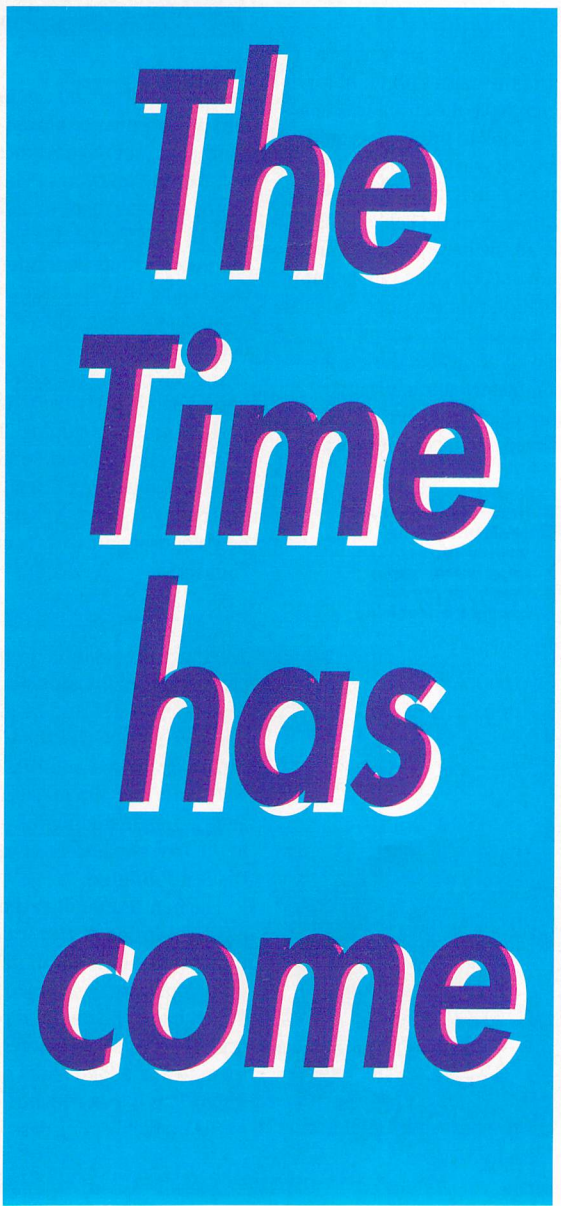
## Font bits

The bitmapped fonts offered with the original Timeworks Publisher are still supplied with version two, though four extra faces are included: Autumn, Brushwood, Diamond and Sage. These display faces are supplied in a reasonable range of sizes, but not in bold or italic styles.

The font capabilities of the program may be the single biggest problem for it, in comparison with the other well known ST DTPs. They are bitmaps, so you can't put together any sizes not supplied with the package. Although GST was keen that the program should continue to run on a basic 520STFM, the need for a good range of fonts is becoming more important as Calamus, Fleet Street and now PageStream all come with scalable outline fonts.

To try and get around this, Timeworks will support FSMGDOS, Atari's own scalable font extension for the ST and TT ranges. Unfortunately, this extension is still unreleased and is unlikely to be ➤

***The first new release of Timeworks Publisher in four years hits the streets this month. Charles Michael rates it highly***



included with Timeworks – you'll have to go to Atari to buy it, and the fonts that go with it. This is not GST's fault, of course, but it would have been good to see a font generator included in the new Timeworks package, so at least you could chose the sizes of your bitmapped fonts.

Text editing is quick and easy and the program has in general lost little of its original speed. It's also one of the best looking programs, if you are set to run on a medium-resolution screen. All the supplied fonts are easy to read, even at small point sizes, and text in the browser and in dialogues uses a highly legible caps-only font.

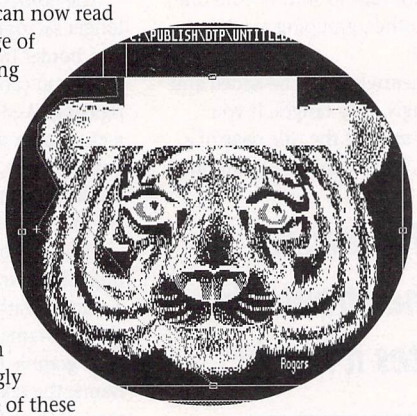
## Bottom line

***FEATURES: The new feature line-up is strong, but is it strong enough?***

***EASE OF USE: Hard to fault, good tutorial, good manual, automatic backup***

## Import and export

Timeworks Publisher 2 can now read from a much wider range of wordprocessors, including WordPerfect, WordStar, Protext, Le RÇdacteur, That's Write and Write On. As you'll notice, several of these are non-ST applications. It makes sense to include formats from other machines, particularly the PC, as text for use in any ST DTP is increasingly likely to come from one of these sources.

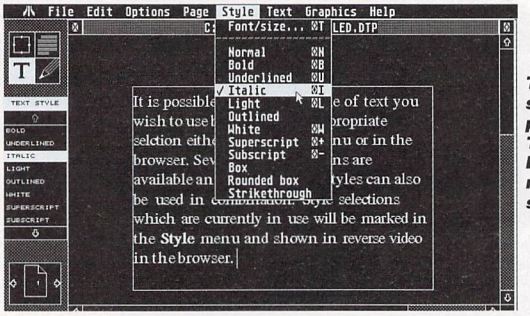



As before, loading text is a simple matter of selecting the file format and locating the file. Now, though, imported text can include information which will automatically select paragraph styles, insert soft hyphens and hard spaces, and include non-keyboard characters from the Gem character set. These extras are known as markup codes; paragraph tags are entered simply as the name of the tag, enclosed in angled brackets.

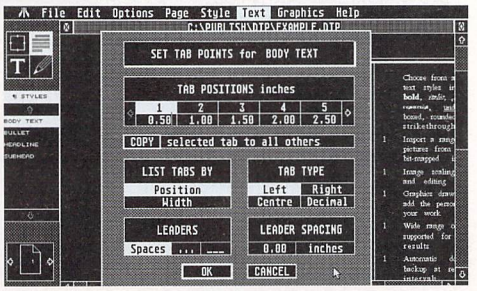
If you're importing text, another useful new feature is the ability to automatically flow text, creating extra pages and frames according to the layout of the master pages. If, for instance, you have the entire text of a chapter of a book to print, you could lay out a pair of master pages and import the text directly into the document, with Timeworks Publisher 2 generating all the new pages. If you have already incorporated typographical information into the imported file, headers, footers and chapter titles would all be created during the import, completely automatically.

Text entered at the keyboard can now be named, so that it shows up in the story browser and can be flowed into other frames or moved easily to another part of the document. Any text within Timeworks Publisher 2 can be exported back to disk, but only in Ascii format. It's a shame there aren't equivalent filters for export, and that new tags aren't saved back as their equivalent markup codes.

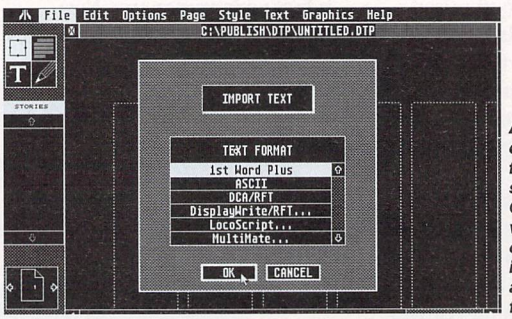
Graphics import has also been improved, with a wider range of supported formats, including PIC, TIF, PCX and encapsulated PostScript (EPS). EPS files don't display onscreen, of course. As before, there's no colour support with Timeworks Publisher.



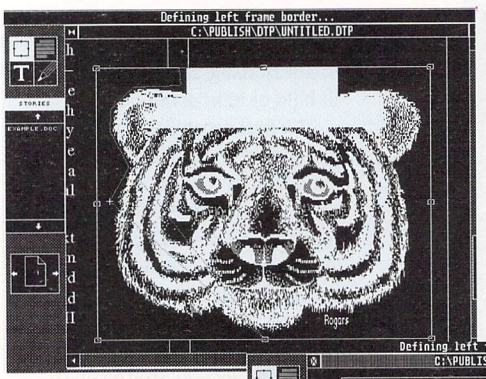

***Three new text styles are provided with Timeworks Publisher 2: box, rounded box and strikethrough***



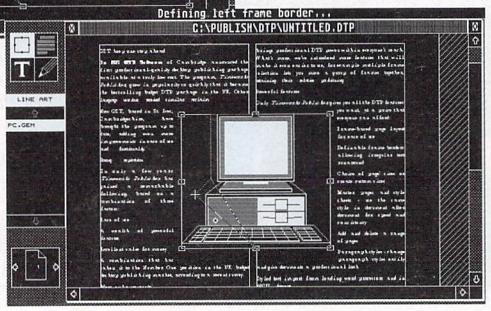

***You can now have up to 14 tabs and set them all to a default. Spaces are specified from one tab to the next***




***A wide range of text import formats are supported. Other wordprocessors can import using a common format***




***Hold down Shift and click on several frames to temporarily group them, for moving, copying or resizing***




***Left- and right-hand borders can be redefined, so text appears to wrap around the graphic itself***

## Inkjet additions

The range of supported printers has been extended. In addition to the Atari lasers and 9- and 24-pin Epson dot matrix machines, there's now support for Epson and HP lasers, the NEC PinWriter and inkjets from HP and Canon, including the popular BJ10E. You can also print to PostScript printers.

The new printer drivers offer better quality printing of grey scale images than before and you can now install up to four printers at any one time. This is handy if you proof pages on a dot matrix or inkjet before sending them to a laser or a PostScript imagesetter. This is a worthwhile upgrade to the market leading desktop publisher. GST has listened to the requests of its many users and has extended the program in ways which will make it a lot more useful.

## Improvements

The import filters give it compatibility with a wider range of wordprocessors and art programs. The increase in document size and autoflow of text makes automation of long documents easier. The grouping of frames and customising of frame borders and page sizes open opportunities for new designs and easier layouts.

Though none of these improvements is earth shattering in itself, they combine to give a program which loses little of its ease of use, while gaining new features. The main doubt remaining is the bitmapped font system. Even with the extra faces, this lags behind the other main contenders in the market - and some straight wordprocessors. FSMGdos may remove this doubt – the asking price of Timeworks Publisher 2 forestalls most other criticisms.

Product: *Timeworks 2*
Supplier: *GST, Meadow Lane, St Ives, Huntingdon, Cambs. PE17 4LG*
Telephone: *0480 496666*
Price:: *£110 plus VAT, £129.25 inc.*
Configuration: *All STs*

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| ST Internal drive upgrade. | £54.99 |

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Please check the configuration of your machine with our staff before ordering any upgrade and have your machine open when you phone. All upgrades/repairs carried out by our service centre carry a 90 days parts and labour guarantee. Our service centre can repair/upgrade any ST, Amiga. Please phone for repair/upgrade charges. Please add £1.50 P&P for upgrades priced under £100.

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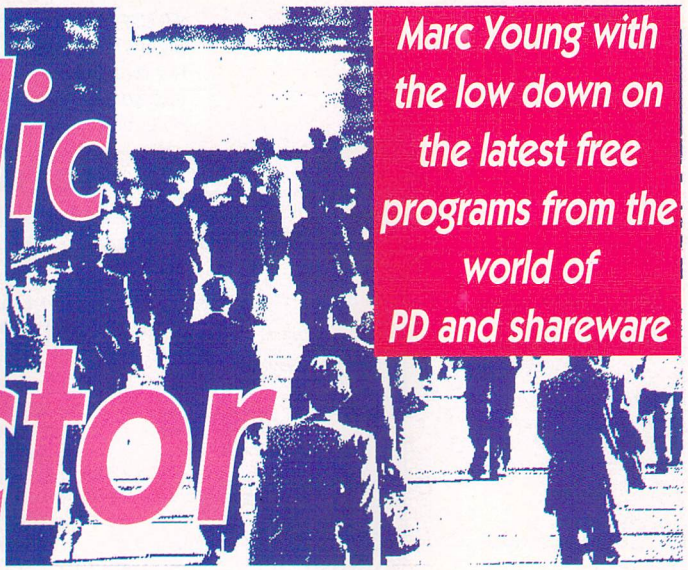
# Public Sector



**Marc Young with the low down on the latest free programs from the world of PD and shareware**

## It's a puzzle to me...

When two or more PD libraries send in the same program for review, you can usually bet it's pretty good. This is certainly the case with Iain MacCallum's Puzzle Creators which is on Goodmans disk GD1245 and Floppyshop disk EDU.44.

The disk contains four programs allowing you to create WordSearch, WordSpiral, Crossword and Multiple-choice puzzles. The first three of these are linked in that the data used by one can be accessed by all. This means that you can create a list of words and clues, then generate all three types of puzzle.

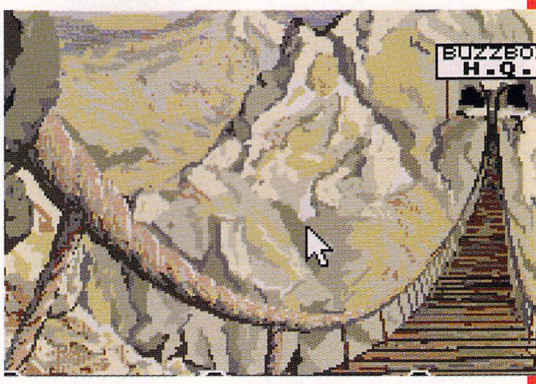
Having created your word list and decided on the size of your puzzle, the program will attempt to fit the words in. As it does so, a list of the number of words successfully achieved, together with the maximum so far is displayed. As it will often be impossible to fit all the words, you can abandon the attempt using the right mouse button.

The word list and puzzles can be saves independently, and each of the puzzles printed. Only Epson compatible print is supported, although it is planned to add Gdos output in the future.

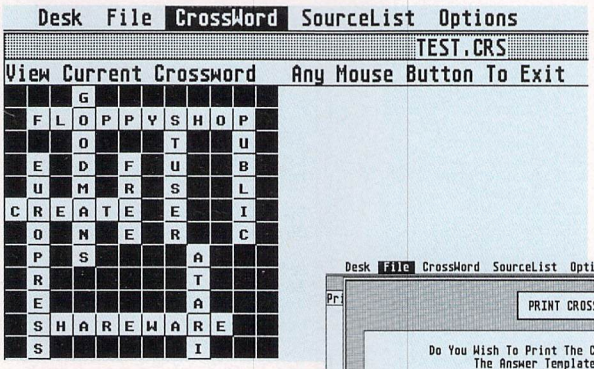
If you enjoy creating puzzles, then this suite of programs will save you a great deal of time and effort. The multiple-choice exam generator is also a very convenient way for teachers to set tests quickly and easily for those dreaded end of term exams!

### Alternatively...

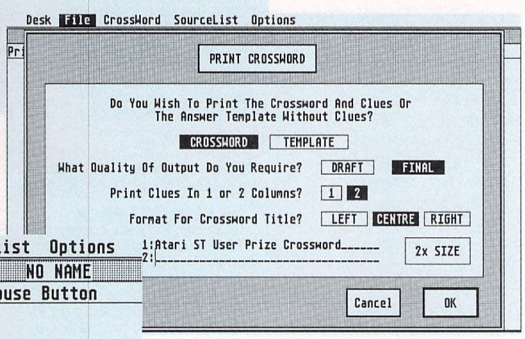
A wordsearch-only generator is available on the South West Software Library's disk No. 1649. Written in Fast Basic, the program looks a little neater than the version reviewed above, but has less options, and cannot import a word list. Two very good puzzles are included, as is the fast Basic source code, so F.B. programmers may like to get their hands on this as a good example of what can be achieved using the language.



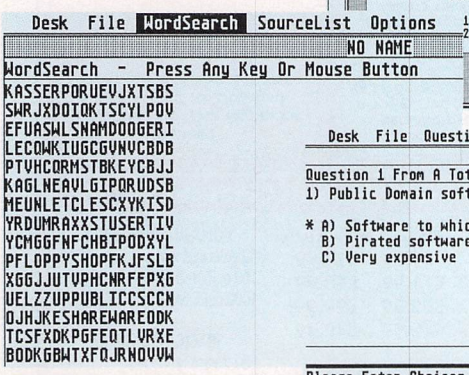

***A Typical Buzzbox loading screen – this one taken from issue 15***



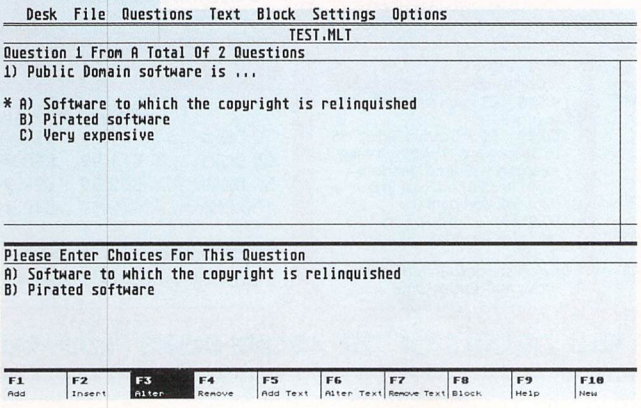

***The generated crossword, showing the solution***




***Comprehensive print options are available for your puzzles, as long as you have an Epson compatible printer***




***The Wordsearch generated on the same word list as the crossword***




***The multiple-choice generator in action. Use it to create simple quizzes or exams for schools***

## Getting a Buzz

Buzzbox Computing have been releasing monthly PD disks for some time – 17 months at the time of writing. What makes these disks excellent value for money is the huge amount packed onto each one. At £2 per issue including postage and packing for upwards of 1.3Mb of files the disks have probably the highest bytes-per-pound ratio of all PD disks.

Each disk also comes with a small newsletter detailing the contents of the disk, any special instructions, news of other products available, and the odd – and I mean odd! – joke. To give an idea of the typical contents, this is what was on Buzzbox 17:

The latest edition of Invoice from Brian Campbell; Game-Low, a Seuk game; Translat, the German-English translator; a usable Pagestream Demo; Guardian, an anti-virus program; Concept, a graphic file handling package; STE Fix to fix the medium resolution STE bug; Cheater, a program giving hints and cheats for many popular games and Make512 / Make1MEG - two programs allowing 1Mb+ owners to make their ST think it's got only 512K ram.

Many of the programs are packed and/or archived, but a very fast de-archiving program is provided. If you want an example of some of the better PD software without spending too much cash then you could do a lot worse than buying a copy of Buzzbox. Buzzbox can be contacted ➤

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# Public Sector

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## Demos galore

We rarely review demos in the PD pages, partly because there are so many it is almost impossible to keep track, and partly because it is rare that something new comes our way. This month however we have received two demo disks, each unique in its own way.

### Ripped Off demo disk

This disk (RIP-101 from Caledonia PDL) contains 14 demos, all apparently created using a commercial package called the Demo Construction Kit. Currently available only in France, this package allows you to create demos with little or no programming knowledge. If the quality of these demos is anything to go by, then this has got to be a package worth investing in.

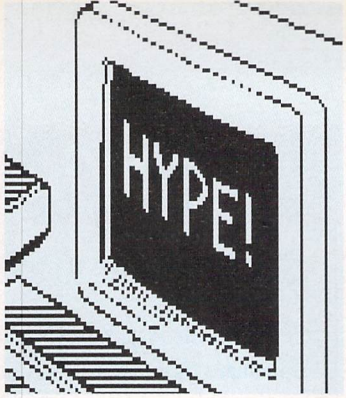
### Tea Party demo disk

DEM.793 from Floppyshop contains the Tea Party Demo, which again contains 14 demos of very high quality. What makes this disk somewhat unique, however, is that the demos were all written using Basic! The version used was Omikron Basic, which is the standard Basic given free with the ST in many European countries.

Many people will dismiss the idea of "proper" demos being written in Basic, as it would be too slow. These demos certainly show that to be a complete misconception – indeed if the scrolling text hadn't told me, I'd have assumed the demos were written in assembler.

## Hype!

If you wanted to write some documentation on disk, you'd normally use your wordprocessor to create a




text file and leave it at that. But wouldn't it be great if you could include diagrams, sound effects etc? Using Hype! you can do this, and more.

Hype! is described as the world's first Hypermedia package for the ST. The PD demo explains what you can do with hypermedia, using hypermedia to explain it! The demo uses a program called View, which is in the Public Domain, to execute a Hype! script. This script contains a number of pages of mixed text and graphics which show the capabilities of Hype!

A picture is, as they say, worth a thousand words. In the three screenshots shown, you can follow the thread of part of the demonstration.

Screenshot one shows a contents screen. This has been set up so that the user may click on any of the four boxes to proceed to the next level. Default, Next and Previous options are also available using function keys or the drop down menus.

Screenshot two shows the result of clicking on the "What is Hypertest?" box. It is not obvious from the screenshot, but at the foot of the screen the user can click on the words Picture, Graph, Text or Map to go to example screens of each of these types.

Screenshot three shows the result of selecting Map from the previous screen. Also that the option of full screen mode has been taken, removing the Gem window.

Not shown here, but available on the demo, the program has the ability to play samples or "chip music" and to execute other programs.

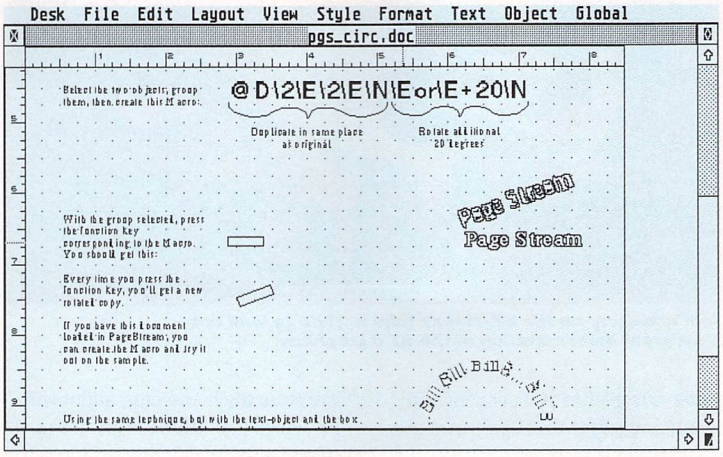
The only real criticism I could have of Hype! is its speed. As every page is held as a separate file, which are loaded from disk one at a time, running from floppy is almost out of the question. ram disk or hard disk speeds up the operation, but it still could not be accused of being speedy.

As well as the demonstration program, a cut-down version of the Hype! program itself is included on the disk. This allows you to create limited Hype! scripts and to get a feel for the program before registering to receive the full version.

Registration is £19.95 which gets you a fully working latest version of Hype! plus the first major upgrade free.

The Hype! v2.0 demo disk is available from your local PD Library or direct from WoolleySoft for £3. Remember to state whether you want the high or medium resolution version.

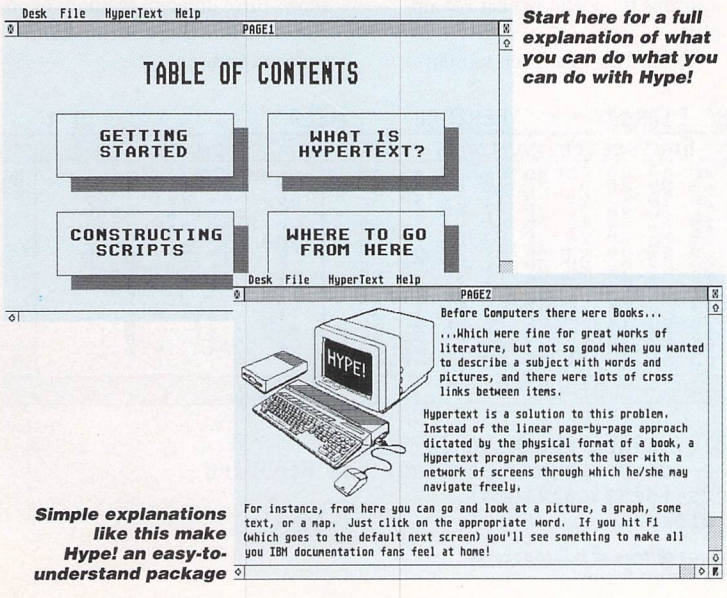
WoolleySoft are at Humblesknowe Cottage, Ramoyle, Dunblane, Perthshire, Scotland, FK15 0BA




***One of the Pagestream documents showing how to achieve text rotation using a simple macro***

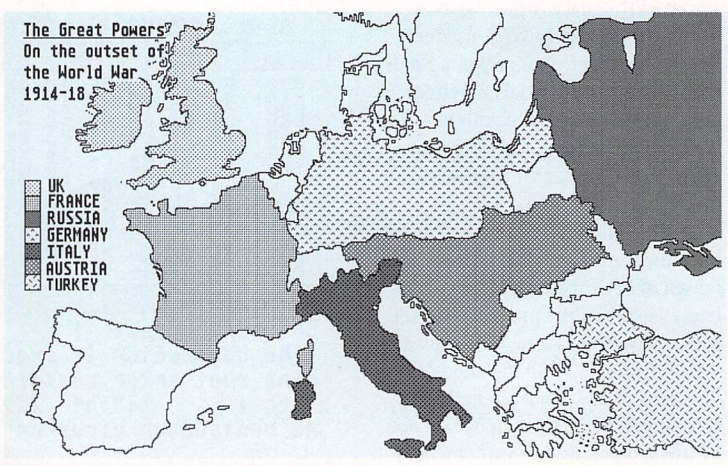
## Pagestream utilities

From the ST Club disk WPR.85 comes a disk of PageStream utilities. A number of different files are available, including some tutorials from SoftLogik themselves, a file of 100 fill ➤



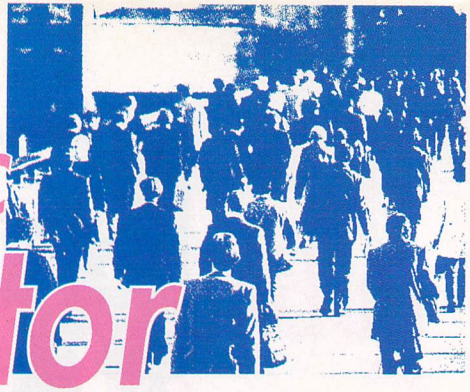

***Start here for a full explanation of what you can do what you can do with Hype!***

***Simple explanations like this make Hype! an easy-to-understand package***




***Want to travel without leaving your ST? Hype! can help***

# Public Sector



***Tom and Jerry on the ST. It may take a while to load but it's a great demonstration of the ST's graphics.***

➤ patterns from 1 to 100 per cent and so on. A must for the PageStream user (PageStream is required to view most of the documents).

## Th th that's all folks!

Disk 1753 from the South West Software library may take a long time to load - 1 minute 15 seconds - but the results are worth waiting for! Animated Tom and Jerry cartoons with sampled sound. It's almost like the real thing! Slightly jerky cuts between frames lets it down a little – definitely not a Fred Quimby production – but in general a fun piece of software. The presence of a number of files suffixed MBK and a program TOMJERRY.BAS makes me suspect that this was written in STOS, which is even more impressive!

## Norwegian virus

Direct from the Atari ST User Group Norway PD Library comes Sagrotan, one of the most popular virus killers on the continent. This program holds hundreds of commercial and virus boot sectors, as well as details of many of the most widely used programs which it uses for checking for link viruses.

This program has been translated from the German by Stein Arne Jensen of STUG Norway. Though the latest version of the program has not been translated, as it no longer uses resource files, it is still included on disk. One of the major strengths of this program is that it can be updated by users. If you find a virus of which the program is not aware, then you can store the bootsector, and it will be detected in future. With this in mind Stein has volunteered himself as "keeper of the bootsector". You can send him any new bootsectors, program information and so on. He will keep all information in an ever expanding library which will be available to allow your system to become more secure.

The program is also available from a number of UK PD libraries, so you will not have to fork out for extra postage to order it from STUG Norway.

## Score drawers

Another popular shareware release is the latest version of the Pools Predictor program from Bay Computers. Both Goodmans and Caledonia PD Libraries sent in version 3.02, on disks GD1312 and AU-0116 respectively. This software is only allowed to be distributed by certain libraries licensed by Bay Computers, and so may not be available from your regular PD supplier.

The software has been substantially rewritten in a mixture of GFA Basic and machine code, and now allows three different methods of prediction to find those all important score drawers.

## Who's who

### Special thanks to the following P.D. Libraries:

*Caledonia PDL, 250 Oldtown Road, Hilton, Inverness, IV2 4PT*

Goodmans International, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent

*ST Club, 49 Stoney Street, Nottingham, NG1 1LX*

STUG Norway, c/o S A Jensen, N-3630 Redberg, Norway

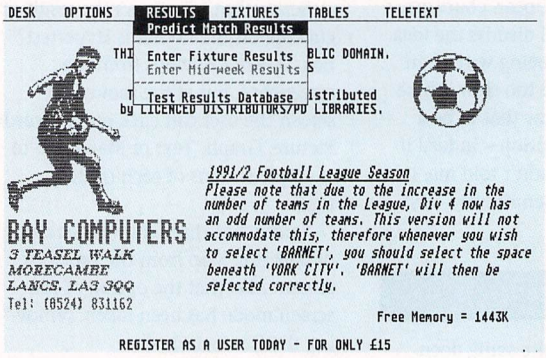
*The South West Software Library, PO Box 562, Wimborne, Dorset, BH21 2YD*

Floppyshop ST, 45 Provost Graham Avenue, Hazlehead, Aberdeen, AB1 8HB

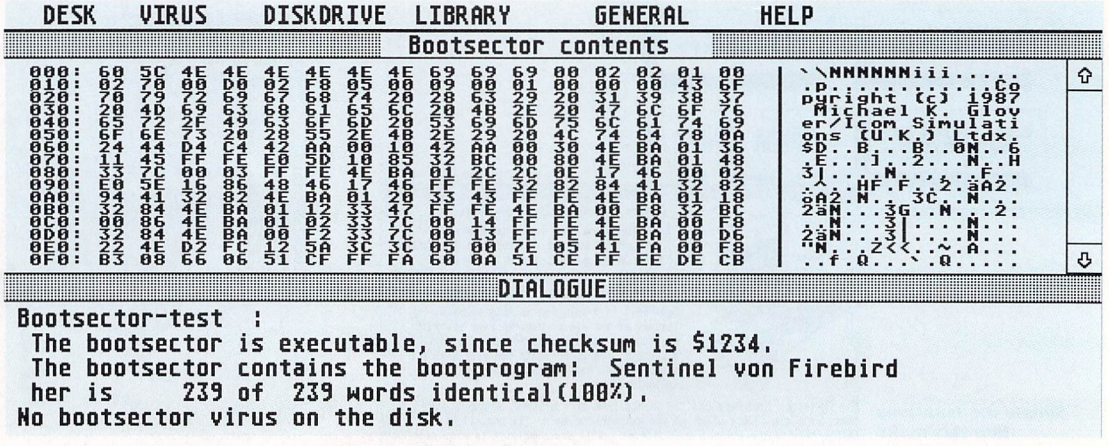
*Buzzbox Computing, 5 Balmoral Road, Moorlands, Lancaster, Lancs, LA1 3BT*

Woolleysoft, Humblesknowe Cottage, Ramoyle, Dunblane, Perthshire, Scotland, FK15 0BA

***Once you have entered the fixtures for forthcoming matches, the results can be input to help the program calculate the results of future games***




***The trouble is, if the program makes the right prediction, how many other readers will I have to share the jackpot with?***




***A great deal of information is available about different bootsectors, though it does take 45 seconds to load it all from floppy!***

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- G97 1MB. NOT STE 1.62. The Star Trek game.
- G103 Pop Eyed a 60's music trivia strip quiz.
- G106 The Name Game.
- G111 Stocks and Bonds a stock market simulation.
- G112 Upstart a shoot the cherries up arcade game. excellent!
- G113 Spaceballer an platform excellent game.
- G114 The Rush is an excellent platform game.
- G115 Bumper Jacky a great platform game.
- G117 Flight Simulator.
- G118 England Team Manager football game.
- G121 Top of the Pops record company simulation.
- G125 Soko ST. A blue and tile game.
- G126 Virus the Game, you must protect your ST against the Melting Screen virus the scene is the circuit board of your ST.
- G127 Slider a great version of the 'There's one missing and you've got to get them in order' games, this game features multi levels and some great graphics. NOT STE.
- G129 Snakes and Ladders the game.
- G131 1MB. Anagrams, you enter a word and it will show all the possible anagrams.
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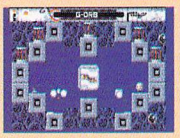
## ARCADE PACK 4

Mixture: Another excellent pack with shoot 'em ups, platforms and more shoot 'em ups includes G-orb, Colony, Castle Frankenstein and Avena Blue. Order Code GPS7.



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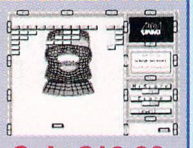

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## PROGRAMMING

L1 - 68000 Assembler, Xlisp, STLogo, Tiny basic.

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L5 - PD C v2.0 C compiler.

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L8 - Forth from Bradley Firmware.

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L15 - Sozobon C compiler.

## PROGRAMS

MP1: Starter Utility Pack: this pack was compiled with the new ST user in mind, a file compresser, RAM disk, Printer Spooler, BIG colour emulator, Monochrome emulator, Virus Killer 2,picture converters, disk formatters, time and date setters, clocks, RAM free, autoGEM and lots more. Plus STWriter Elite the word processor, Data Handler the database and Sheet the spreadsheet. Only £8.50!

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MP21 - TeX the document processor and typesetting system. £20.00.

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A138 - Double Sentry v0.00 small business accounts.

A15 - STSWitcher will spilt an STs memory into 2 seperate parts allowing you to use 2 programs at once.

A31 - 1ST Word printer driver files.

A40/A52/A172 - Hard Disk Utilities: Includes The Vault backup and much more. £9.00.

A41 - Monochrome Monitor Emulator v5.

A88 - DCFormat v3.03 THE ST disk formatter includes MSDOS.

A90 - Superboot v6.0 THE ST custom boot program. ScreenDump24 v2.0 Alt/Help screen dump to Epson LQ800 or compatible.

A91 - VirusKiller v2.01. Filespy v1.0 file displayer.

STW 41 - FSelect v3/1989 excellent alternative file selector.

A111 - Headstart v1.1 auto boot GEM programs. Manual Maker v2.0 requires GDOS.

A120 - Copiers: copy beef, super copy, copy v2, copy track, diskcopy, tribbler and others.

A128 - Recover allows you to recover lost data. Bootinfo allows you to put any text on screen at boot up.

A134 - Boot Drive Select allows you to select a drive to boot from when you reset your ST. Graf Tool and Chartmaker are 2 good graph creators.

A157 - Custom Formatter allows you specify how much storage space you require.

A158 - The Complete Amateur Astronomy Guide.

A163 - Gemini desktop replacement. Excellent replacement Desktop similar to NEOdesk.

A167 - BIG Colour Emulator colour screen emulator for monochrome monitors.

BP8 - Music Cassette Label Printer. £4.00.

A173 - ARC v6.02 the file compressor, ARC shell v1.98, LHarc v0.5b and v1.13,Turboarc, ARCit auto arcs and unarcs entire disks.

A181 - Interprint2 the ultimate printer controller. Printplus v1.1 prints 1ST Word documents.

A182 - Expander expands a single sided disk to a double sided. MedRES STE a fix to the medium res boot up bug on STEs. Turbo ST speeds up your ST.

A186 - FCopy 3 the excellent disk copier.

A191 - Video Manager v4.0 allows you to catalogue your videos.

W1 - Type It! The brilliant touch type tutor.

BP20 - Video Master. Design Video scrolling sequences with fades, timings, scroll speeds, graphic imports, backgrounds, text etc £4.00.

A202 - Grundplot is a mathematical plotting program for potentials, exponentials, logs, trigonometry, arc, hyperbolic, area, singum, integrals, and entier functions. Mono. Planimet is for surface calculation. Mathcalc lets you define variables and functions.

A204/205 - HP Deskjet disks - Loads of utilities and drivers for the DeskJet printer. Telephone for details. £6.00.

A206 - Resource File Analyzer allows you to load resource files and print out complete break down of the contents. Mono.

A207 - Grabber, this program allows you to store any 4 programs in RAM and execute them from within other programs.

A208 - Astro22 v1.0 calculates the position of the planets, cusps and zodiac positions to within 30 seconds of arc.

A209 - Pools Coupon Perm Checker and Tone Fone

## GRAPHICS

MP4 - Graphics Pack 1: ANI ST the excellent animation package allows you to create your own animations! Pearle the ray tracing package with full examples, Mini Paint the excellent fully featured painting package, NEOMaster the excellent painting program, and picture convertors. £8.50!

MP5 - Graphics Pack 2: Master Painter the excellent fully featured paint package that includes multipy screens, ColourBurst II the 800/3200 shades on screen at once paint package, Fine Line the drawing program, Fractal Zoom the most comprehensive fractal generator on the ST, the Atari IMageProcessor (1MB), MegaBlit the paint package, Studio and VanGogo2 excellent paint packages. £8.50!

GR1 - NEOchrome Master v2.1 excellent graphic package.

GR6 - Degas disk - 155 fills, 10 brushes, 7 fonts, printer driverfiles.

GR14 - Public Painter v0.1. Requires a Mono Monitor.

GR17 - Picture Convertors. Print Master, Degas, Neo, Tiny, IFF, Spec512, IMG, AIM, Postscript.

GR19 - Fractal Zoom v3.1 the most comprehensive fractal generation program available.

GR20 - .IMG picture file utilities: Convert2IMG v0.9 converts any Degas, Tiny, NEO, Macpaint, Spectrum picture to .IMG format. Plus an .IMG slide show and viewer.

GR21 - ANI ST the fully featured animation package.

GR24 - Pearle the 3-D ray tracing package.

## EDUCATION

MP16 - Education Pack 1: Many excellent programs full of colour and music for under 8's covering the following subjetcs: Shapes, Puzzles, Songs, Create Stories, Drawing, ABC, Mr Potatoe Face, KidDTP, Graphs, Grids, Music, Notes, Piano and Spelling. £8.50.

MP17 - Education Pack 2: Many excellent programs for the over 8's covering the following subjects: Understanding Algebra, Geometry, Ratios, Trigonometry. Ship Wreck an adventure scenario to teach maths. World a quiz about countries and their capitals, Chemical Structure Interpretor, Chemistry Element Periodic Table, Maths Test, Numerical Go Round, and two study aids - Quizz and Study. £8.50.

BP17 - Splash is an art package for young users aged 3 to 10. £4.00.

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## COMMS

A44 - StarNet BBS. Setup your own Bulletin Board System.

A48 - Uniterm v2.0c. Features: Xmodem, Ymodem, Kermit, VT100, 102 and VT200 and much more.

A166 - Vanterm v3.71. Features: Xmodem, Ymodem, CompuserveB, Auto Dial and much more.

A119 - Flying Start v1.04 1200/75 comms program for Prestel.

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Your Second Manual To The Atari ST. Having got your computer and read the manual that came with it, you are probably still in the dark about the ins and out of using the ST. The book Your Second Manual goes indepth in an easy to understand way about every aspect of using your ST. If you are a new ST user then this is the book for you. £8.00. Order code Y2M.

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# Music, Maestro

***In professional studios, magnetic tape is already being superceded by a new generation of digital systems. Roger Derry investigates an affordable option, based around the Atari...***

After years of using magnetic tape, the recording and broadcasting industries are beginning to adopt computer techniques for editing sound. Based on large capacity hard disks, these machines use the same techniques to turn sound into numbers as the compact disc. They usually cost anything from over £250,000 to about £30,000.

However one enterprising company, Audio & Design of Reading, has developed a device that costs about £5,000 including the computer – an Atari, of course. With this you can edit a digital master for a compact disc.

The SoundMaestro digital audio editor uses the Atari's cartridge port. Because it is cased in a 19in professional rack, it is possibly the largest "cartridge" for the ST available. I asked myself whether it was a case of plugging the cartridge into the Atari or the Atari into the cartridge!

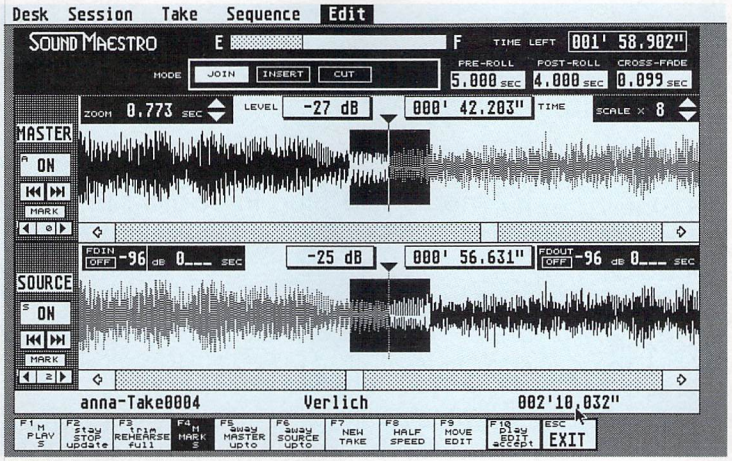
You can buy a system to use with an ST4 or TT if you already own one, but usually Audio & Design case the Mega 4 into a 19in rack–mounting unit and the system becomes indistinguishable from the other audio equipment in a studio. Indeed when I entered Jeff Addiss's Recording Associates studio my first reaction was: "Where's the Atari?".

## Hidden

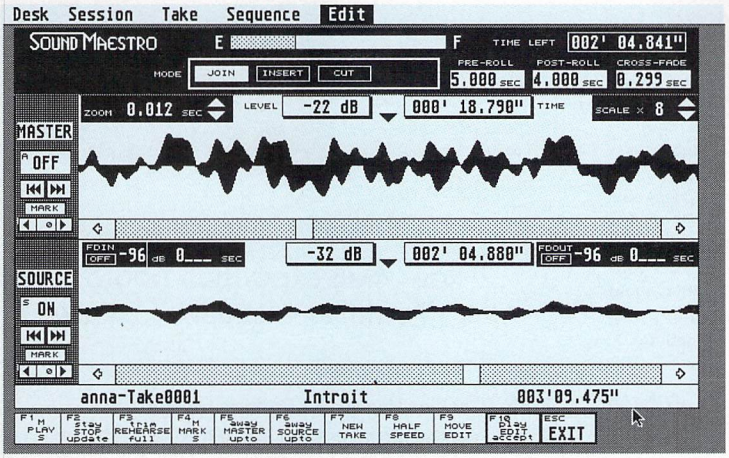
Sitting beside the studio mixing desk was the familiar SM124 monitor and Mega keyboard, but there was no sign of the Mega processor box itself. It seems that it normally lives in a cupboard with the hard disks so that the noise from the choir of fans does not pollute the sound studio.

For my demonstration they had been brought in to the studio and sat at the back behind heavy black metal panels, on 19in rack mounting. Audio and Design have found that the keyboard output can be extended to about 25ft along with the feed to the monitor. They fit a reset button neatly at the back of the keyboard. Now why can't Atari do that?

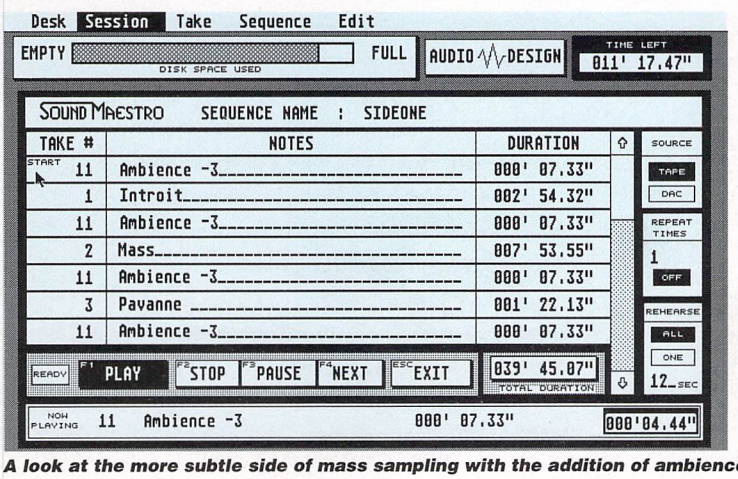
SoundMaestro uses software developed by York University. When they started in 1986 they chose the Atari – then brand new – as being the most powerful, affordable machine around. Until recently systems were based on an unadulterated MegaST4 running at its standard speed of eight megahertz. This is the version I was shown by Mike Beville of Audio & Design.




***Not just a song, but an entire song in one huge sample. Amazing***




***Example of the system's power as we zoom in on a split second of the song***




***A look at the more subtle side of mass sampling with the addition of ambience***

Nowadays systems are fitted with Hypercache to give the extra speed of 16MHz operation much of the time. Mike eagerly told me of reports he had received of the SoundMaestro running on the TT. The overall four times speed increase was not unexpected but parts of the program were running 25 times faster! The program has just been rewritten "from the bottom up" to take advantage of developments over the last five years and to add more facilities.

Digital audio uses an immense amount of data. If you thought A4 300dpi image files were bad enough then you should try audio. Normal Atari add–on sound samplers rarely have the detail and resolution required for professional use. The compact disc has a capacity of about 500Mb or more, giving an hour or so of playing time per disc. I am not being inconsistent with my spelling, by the way – my broadcast background means that I deal with radio and television programmes using LP and compact discs which sometimes involves me with computer programs using floppy or hard disks.

## Powerful

For any digital audio device to be considered by professional audio people it must be capable of recording two channels of audio using 16 bit resolution samples at up to 48,000 times a second. This means that 48,000 x 2 x 16 bits per second are needed. This is 1,536,000 bits per second (192,000 bytes per second) plus any overhead for error correction and synchronisation.

SoundMaestro handles the three standard rates of 32,000, 44,100 and 48,000 16-bit samples a second. It can handle 90 minutes of stereo as normally sold, requiring a large capacity 750Mb hard disk. It can handle up to seven of these.

When you switch on the Atari the desktop shows you disk C in the normal way using a standard size partition. The rest of the hard disk or disks are recorded using a proprietary system that doesn't use Gem files, which are restricted as to how long they can be. Another problem using standard file handling is that Gem, MSdos and most other filing systems often fragment large files when they are ➤

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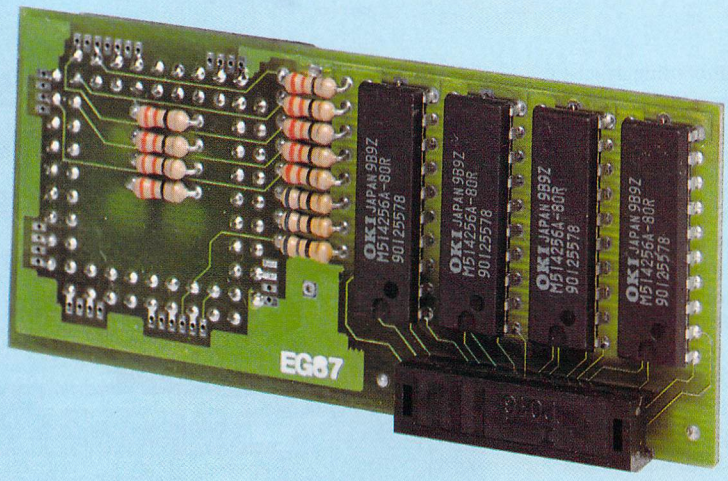
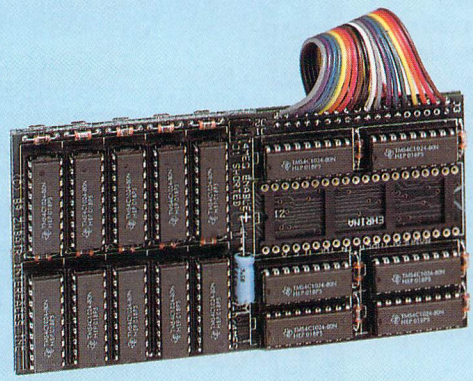



1/2 megabyte plug in board Atari ST User September 1990
"Features–Excellent Ease Of Use–Good"



Z-Ram 4MB expansion board Atari ST User July 1990
"Features–Excellent Ease Of Use–Good "

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changed. This leads to extra time taken while the head checks the directory and then skitters over to the next cluster in the list.

As well as analogue inputs, you can transfer recordings made with digital recorders directly to the hard disks. Editing and control uses our old friend the mouse with Gem sliders and buttons. Like many a simple sound sampler, the screen can show the wave–form of the audio.

SoundMaestro has the option of zooming in so that about 12/1000th of a second fills the edit window. This means that edits to one sample resolution are possible. This is rather better than the mere 1/120th of a second that traditional razor–blade tape splicing can achieve.

## Background noise

In practice an instantaneous, "hard" cut would usually not work, even if you cut at a point where both "out" and "in" samples were zero. This is because subtle variations in acoustic background noise can produce a click or plop. To prevent this, each edit consists of a mix of the two parts of the recording, with one fading out as the other fades in. This can be adjusted to take anything from 3mS to 6.5 seconds.

SoundMaestro performs the cross-fades in ram, so when you play an edit you hear the output straight from the hard disk up to the edit. This is followed by the crossfade played from ram. Finally you hear the direct output from the section of hard disk containing the new material. The machine I was being shown was occupied with music destined for two compact discs. The Mega's function keys are loaded with pre–programmed commands to ease editing and to mark cue points. Mike said that most producers would listen to the material as it was being copied to SoundMaestro and enter cue marks at points where they expected to make edits "on the fly".

This allows them to find the right point extremely quickly – no spooling of tapes. As well as going straight to cue marks you can "spool" through the recording by moving the Gem slider to arrive almost instantaneously where you want to go.

## Hard disk blues

I asked Mike for his view of the Atari and he told me that they had never had any problems with it. It had always been the hard disk units that had failed, particularly after they had been running for about a year, and not the computer. After experimenting with different manufacturers, they standardised on Hewlett–Packard units which from the outside look bomb–proof. They are well engineered inside as well.

Mike did admit to referring to the computer as "The ST" rather than risk calling it an Atari because, despite its heavy use with professional Midi sequencers and so forth, it is a machine that most people fid an unexpected choice in this IBM dominated world. Yet, of course, it is only in the last couple of years that the IBM really has been capable of this sort of thing – at a price.

This is symptomatic of the problem that Atari have. Because of the machine's association with games, it is difficult to get business and engineering to take it seriously. Yet when there is an application that does make use of its power there is a reluctance to shout out its use for fear of frightening the horses.

*Roger Derry is an Audio and Broadcast Consultant*

## Digital audio: The low-down

*For professional purposes audio is measured using 16–bit words, usually called samples in the audio field. The range of human hearing is up to 20,000 Hertz – the correct terms for cycles per second in honour of Heinrich Hertz who did much of the fundamental work on electro-magnetic waves.*

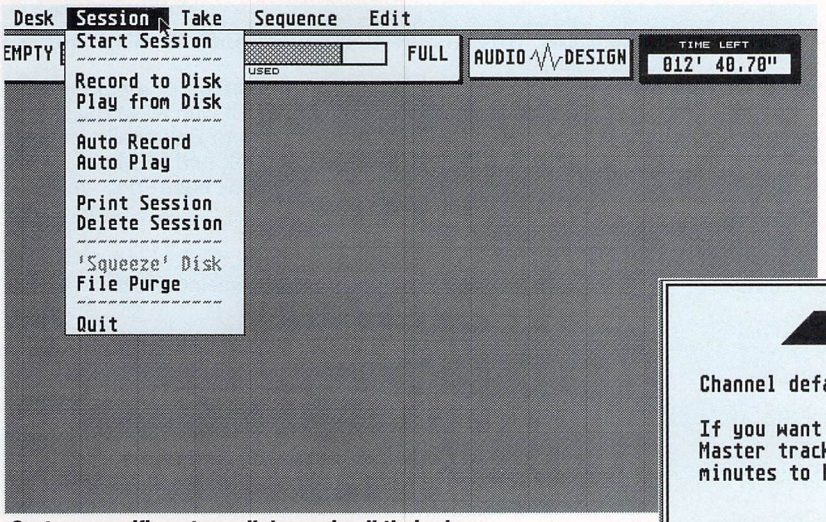
*Sound is created by something vibrating. That produces variations in air pressure which cause the diaphragm of a microphone to vibrate and generate a voltage, which varies analogously with the air pressure waves. It can be recorded by using the voltage to wiggle a cutter on a lacquer–coated disc or by variations of magnetism on a tape or disc.*

*If the highest vibration speed we want to handle is 20,000 times a second then we must sample the wave–form often enough so that at the very least two samples occur in 1/20,000th of a second, to define the positive and negative excursion of the original air pressure wave.*

*This principle of sampling at twice the frequency of the highest frequency you wish to handle is called the Nyquist limit after Harry Nyquist of Bell Telephone Laboratories who first defined this. In a practical system, 2.2 time the highest frequency is a better rule of thumb.*

*This leads one to a reasonable value of 44,000 samples a second. When CDs were first developed, the only machines able to record at this rate were video machines and, for technical reasons to do with video, this led to CDs using a sampling rate of 44,100 per second. More modern systems including RDAT and the new Philips Digital Compact Cassette have standardised on 48,000.*

*Broadcasters have traditionally restricted their frequency range to 15KHz because of the limitations of the FM stereo transmission system. The BBC, for example uses 32,000 samples a second to distribute its Radio and TV networks' sound feeds around the country. A special coding technique called NICAM is used to reduce the sample size to 10 bits.*

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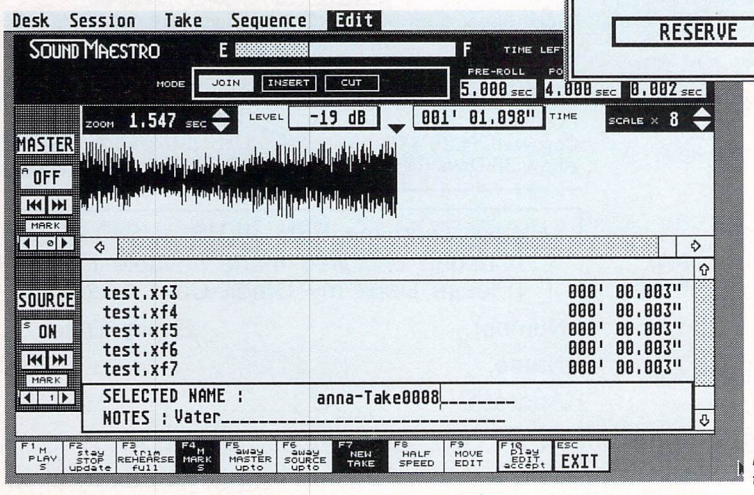


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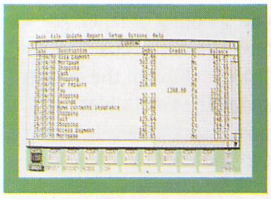
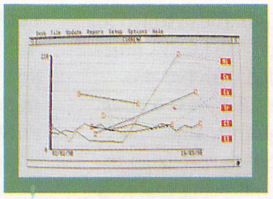
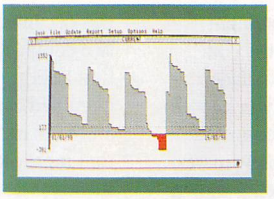


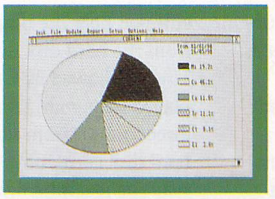
MAIN ACCOUNT SCREEN



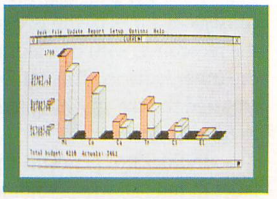
TREND GRAPH



BALANCE PLOT GRAPH



BUDGET PIE CHART



BUDGET COMPARISION BAR GRAPH

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**Selectable Columns**
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**Multiple Views**
Up to 5 views of any one window can be displayed at the same time. This allows different parts of the account to be visible through independent scrolling, or copies of graphs to be displayed covering different time periods. A total of 67 windows are defined.

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**GEM**
Full GEM interface operating in medium resolution colour and high resolution monochrome.

**Auto Balance**
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**Upgrading from PFM**
PFM Plus includes a utility to convert original PFM files to the new format, so you need not lose valuable data by upgrading

**Printouts**
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**Printer Formatting**
Extensive control over the format of printing statements allowing alternative character pitches, bold underlined and italics printing. Printer control codes defined in separate configuration file.

**User Options**
Many configuration options can be controlled by the user. Examples include entry defaults, display column order, initial path and data file names. All options including desktop icon positions may be saved to disk.

**Desktop**
PFM Plus uses its own desktop from which accounts may be selected. The desktop also includes an analog clock and a four function calculator. The calculator can be used even if it is not in the top window. Desktop icons can be re-arranged as required.

**Graphs**
Four different types of graph plot are available. A balance plot, a pie chart showing selected budget categories, a budget comparison bar chart and a trend graph. The trend graph can be used to show long term increases or decreases in your bills. All graphs auto-scale to fit window size.

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**Key Short-Cuts**
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On-line help dialogs cover a range of key topics.

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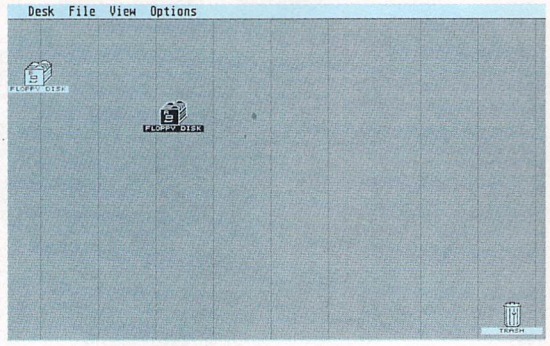
Beginners

# Calling the outside world

*The slots and sockets on your ST aren't just for dropping crumbs, coins and other small objects into. Andrew Baker explains all, and continues his Desktop guide*




**Ok, it's not crowded, but it's easy to understand**

The word "interfaces" is the techy term for the various holes that lie scattered around the edges of the ST. Into these holes go many extras to increase the versatility of the computer. Interfaces are the physical link between the computer and these extras.

The ST, you'll be glad to know, has more interfaces as standard than any other home computer. Extras, by the way, isn't quite the right term. In the wonderful world of computer jargon, extras – like mice, televisions, monitors and printers – are called peripherals.

Before starting, I ought to point out that exactly what interfaces you have depends upon which ST you own. I've assumed that you have the latest 520 or 1040 STEs. For owners of other models, I'll mention the differences but not go into detail.

We'll start with the bottom edge, the underworld. On the right–hand side, we find the home of the mouse and the joystick. These two interfaces are both shaped like rotated letter Ds – the one on the left is for the mouse, and the one on the right for the joystick.

## The underworld

We covered the mouse last time, so we won't go into any further detail. The joystick is a device used to allow easier control of games. You may well have got one with the ST, and it essentially replaces the mouse – when playing games. Both the mouse and joystick can be plugged into the others' interfaces without harm, but they will not operate correctly, if at all.

Moving from the underworld, across to the right, up and back a bit, we come to a narrow slot. This is the disk drive. It's not really an interface, but a peripheral. Unlike most peripherals, it's built into the ST, the slot being the only part showing.

During use, your work/information is held in a storage area inside the computer – known as memory, or more technically, ram. When you turn off the computer this memory is lost, and you will therefore need to transfer this information to a more permanent form of storage. Cue the disk drive.

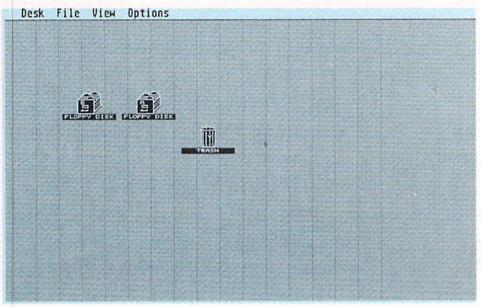
The small, square, blue pieces of plastic – you should have got several with the ST – are the permanent storage area. They are called floppy disks, and are the storage medium. Digressing for a minute, you may be wondering why they are called floppy disks as they are fairly rigid squares. The answer can be found in the annals of computing history – along with the definition of most other words used to describe various parts of today's computers.

In this case, computer floppy disks used to be thin squares, made of cardboard, and roughly five and quarter inches in size. They were anything but rigid – hence floppy. Inside the card was a plastic disk, similar to a record – hence the second part of the name.

Most computers now use stronger square disks, but there are a lot of the older, floppy disks still around and the name persists.

Getting back to where we left off, the disks should be inserted with the metal piece facing towards the computer, and the label facing up. To remove the disk, press the small button just below the slot. The disk will then pop out letting you remove it.

It may seem obvious, but do not insert any other objects into the drive slot. Inside are some very sensitive parts that can easily be damaged. If for any reason the disk when "ejected" sticks and will not come free easily, do not force it. Call your dealer or the Atari Helpline (081-309 7770) for assistance.




**Stick those icons anywhere you like**

Moving round the corner to the rear side of the ST, we come to a large collection of interfaces. In order of left to right these are: power input, two audio sockets, monitor then television interface, floppy disk followed by "DMA" connectors, and then the printer and modem ports.

The audio sockets allow connection to a sound system, letting you hear the full glory of the ST's sound through your stereo.

An interface we looked at briefly in the last issue was the monitor interface. This is very simple and should be fairly obvious. From here, like the TV interface, the ST sends out the information needed by the monitor to display the picture.

The ST's biggest rival and most hated enemy, the Commodore Amiga, doesn't have a built–in TV interface, but a rather clumsy external box. It does, however, have a monitor interface, and systems can use the same types of monitor.

## Mysterious

When the ST was first released, there was a facility on the monitor port to take sound in, as well as send it out. Quite what Atari's plans were for this have never been publicly announced – perhaps some form of voice control? Anyway, nothing ever happened and in later generations it disappeared.

The floppy disk interface allows additional floppy disk drives to be attached.

The DMA (Direct Memory Addressing) interface allows custom designed Atari peripherals to be plugged in. These include hard disks, which are like floppy disk drives only very much faster and capable of storing much more data, and laser printers. Memory is transferred directly from the ST's memory to the peripheral attached without any processing (for other devices the data is usually changed slightly first) and as a result it is much faster.

The last two interfaces are the most ➤

# Beginners L

complicated. They are the printer (parallel) port and the modem (serial) port. These two are similar in many respects beside their shape – elongated, rotated 'D' shapes.

Both are used to communicate with dedicated computer peripherals – printers, modems and sometimes other computers. The printer port – also called the parallel or Centronics port – allows a device called a printer to be attached.

## In parallel

Printers, as the name suggests, produce a printed copy of the information in the computer. The words parallel and Centronics come from the method of transfer and manufacturer of the interface. The interface works by sending eight pieces of information to the printer at once, or in "parallel", while the word Centronics is the name of the original designer and manufacturers of the interface - Centronics Incorporated.

There are various interfaces used in printers, the most common one being the Centronics interface. Another type is the serial RS232 interface. The modem port is of this type and you can, if you have the right type of printer, attach a printer via the modem port as well.

The serial interface only has the ability to transfer one piece of information at time, and is thus slower. As a result the Centronics port is more popular as an interface for printers.

The serial port, or in ST lingo, the modem port is used primarily to talk to other computers. By plugging in a peripheral called a modem, you can connect the ST to the telephone. Once on the telephone you can talk to other computers. Go ahead, look up Atari ST in the yellow pages – there are hundreds of them out there.

OK, I lied! It isn't quite that simple, but you can "talk" to other computers via the phone. This opens a whole sub–world of computer usage, and one that is really too big to go in to here. Suffice to say that an awful lot of computer buffs get turned on by talking to each other, using telephones.

Nothing wrong with that you say, but these people love typing their conversations on a computer rather than just talking! What's worse, it's slower and thus more expensive. And you thought train spotters were odd!

Finally we come to the last side, the left–hand edge. Here we have five interfaces. The first two are Midi ports. This stands for Musical Instrument Digital Interface and allows...yes, musical instruments, to be attached.

Many of today's electronic keyboards and other musical instruments also have such an interface. By connecting such instruments to the ST, you can control them from the computer. You may be asking yourself why anyone in their right mind would want to play a synth (for instance) from a computer keyboard when they've got a perfectly good keyboard on the synth in the first place. The answer is simple. How many musicians are in their right mind? Seriously, with electronic instruments sounds are held as data.

## Remote control

Through the Midi ports, this data can read, manipulated and sent back by the computer. Being able to rearrange sounds, add and remove bits and save them for later use, obviously makes creating music a lot easier. And because when finished the data will actually be played by the synth, there is no loss in sound quality – a perfect environment.

The ST, with its built–in Midi interfaces, doesn't need the masses of external cables that other computers, without built–in Midi ports, do. As a result it is the most popular computer in the music industry - particularly among pop groups. You will often see an Atari ST being used on Top of the Pops.

After the Midi ports is a narrow slot. This is called the cartridge port, and was originally designed to allow purpose built peripherals for the ST to be plugged in. Technically this is very possible, but due to a design limitation, there is very little that hardware developers can do that is of any real use. As a result there are few uses for this port.

## Elite joysticks

Towards the front of the ST, but still on the left–hand side, are two more interfaces (only STE models will have these). The two circular holes are more modern joystick ports and allow, given the correct cables, up to four joysticks to be plugged in. The older joystick port can only support one joystick.

Atari, was the very first developer of home games computers and developed some of the first joysticks. As a result, the vast majority of today's computers all use Atari's original design for joystick interfacing. However, since this design – used in the joystick port next to the mouse – was getting fairly old, Atari designed a new standard.

These two interfaces are the first commercial use of this new design. Given time it will probably work its way in to other computers.

Now briefly, for this issue at least, we'll start the main tour of the Desktop. This month we'll add a couple of new mouse movements to the repertoire we built up last month.

To start with, turn the computer on – without a disk in the drive – and wait until the green Desktop appears. Move the mouse pointer over a picture – or icon – and press the left mouse button, holding it down. The icon that you're over should have turned black.

Still holding the mouse button down, move the mouse. As you move it, the icon should turn to an outline and move with you. This process is used to move objects on the Desktop around.

The process of selecting something, holding the mouse button down and moving the mouse is called "dragging".

When something is turned black and ready for further activity, it is "highlighted" – so you've just highlighted the icon. While you hold the mouse button down, the icon will move with you. Releasing the mouse button will "drop" the icon.

Dragging's most common use is moving or copying icons, and the objects they represent. To throw something away, for instance, you'd "drag" the file or whatever to the trash can.

For practice, try dragging the various icons on the Desktop around, picking them up and dropping them in different places. If you move the mouse pointer away from an icon and try dragging you will notice the outline of a box appear.

As you move the mouse pointer, this outline grows or shrinks in size. By "dragging a box" around several icons and then releasing the mouse button you can highlight multiple items for selection.

Once highlighted you can move them at all at once. This is done by moving the mouse pointer over any of them, and dragging. Now, instead of just one icon moving, they all do.

And that, sweethearts, is it for another issue. We've looked at the interfaces of the ST, and briefly moved on to the Desktop. Next issue we'll start to look at the desktop in detail – see ya around.

# CITIZEN

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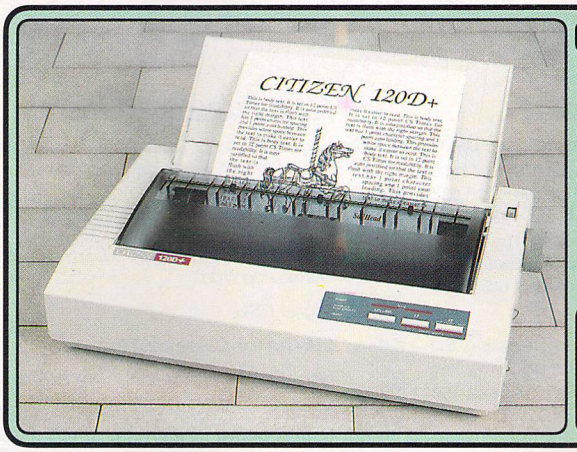


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- *Epson and IBM Emulation*
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*SILICA PRICE:* £129

The 120D is supplied with a parallel interface. If you require a serial interface instead, please state when placing your order.

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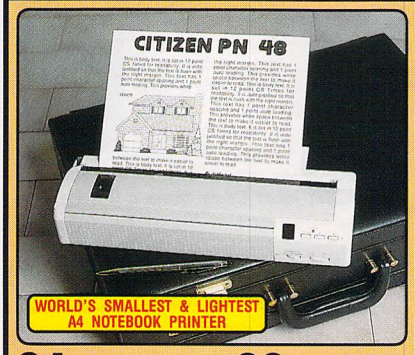
## NOTEBOOK PRINTER




**64** CPS **80** COLUMN

- *Citizen PN48 Notebook Printer*
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- *LASER QUALITY - 64cps*
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- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
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RRP: ..... £325
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*SILICA PRICE:* £249

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- *Epson and IBM Emulation*
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- *FREE Silica Printer Starter Kit*

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STARTER KIT ..... £25
*TOTAL RRP:* £302
*SAVING:* £113
*SILICA PRICE:* £189

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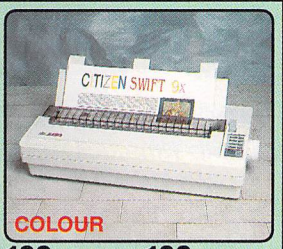


**192** CPS **136** COLUMN

- *Citizen Swift 9x - 9 pin - 136 column*
- *192cps Draft, 48cps NLQ*
- *8K Printer Buffer + 3 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 240×240dpi*
- *Epson and IBM Emulation*
- *A3 landscape printing - FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: ..... £329
COLOUR KIT ..... £41
STARTER KIT ..... £25
*TOTAL RRP:* £395
*SAVING:* £146
*SILICA PRICE:* £249

**£249**
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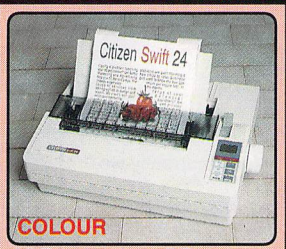
## 24 PIN PRINTERS




**192** CPS **80** COLUMN

- *Citizen Swift 24 - 24 pin - 80 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
- *FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: ..... £365
COLOUR KIT ..... £38
STARTER KIT ..... £25
*TOTAL RRP:* £428
*SAVING:* £169
*SILICA PRICE:* £259

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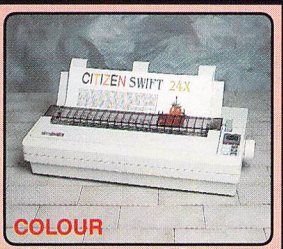


**192** CPS **136** COLUMN

- *Citizen Swift 24x - 24 pin - 136 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson, IBM and NEC P6 Emulation*
- *A3 landscape printing - FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: ..... £489
COLOUR KIT ..... £41
STARTER KIT ..... £25
*TOTAL RRP:* £555
*SAVING:* £206
*SILICA PRICE:* £349

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## 24 PIN PRINTER

**24-PIN PRINTER ONLY £169!**

**144** CPS **80** COLUMN

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- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
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RRP: ..... £249
CUT SHEET FEEDER ..... £40
STARTER KIT ..... £25
*TOTAL RRP:* £314
*SAVING:* £145
*SILICA PRICE:* £169

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## PRINTER ACCESSORIES

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PRA1215 124D/Swift 9/24 ..... £88.70
PRA1228 124D/Swift 9/24 ..... £42.00

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PRA1209 Swift 9/124D ..... £32.25
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**32K MEMORY EXPN**
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**PRINTER STAND**
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RIB 3949 Swift 9x Black ..... £7.15
RIB 3924 124D/Swift 24 Black . £4.70
RIB 3936 Swift 9/24 Colour ... £15.63
RIB 3248 PN48 Single Strike .... £4.11
RIB 3348 PN48 Multi Strike .... £4.11

**COLOUR KITS**
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PRA 1155 PN48 Cable Extn .... £ TBC
PRA 1162 PN48 Car Adaptor ... £ TBC

All prices **include** VAT and Free delivery.

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Every Citizen printer from Silica comes with the Printer Starter Kit, everything you need to get up and running with your new printer, FREE OF CHARGE!

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WORTH: £25 +VAT = £29.38

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Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for over 12 years and, with our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Systems Service".

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SILICA SYSTEMS

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| Order Lines Open: | Mon-Sat 9.00am-6.00pm | No Late Night Opening | Fax No: 081-308 0608 |
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| Opening Hours: | Mon-Sat 9.30am-6.00pm | No Late Night Opening | Fax No: 071-323 4737 |
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| Opening Hours: | Mon-Sat 9.30am-6.00pm | Late Night: Thursday until 8pm | Extension: 3914 |
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| Opening Hours: | Mon-Sat 9.00am-5.30pm | Late Night: Friday until 7pm | Fax No: 081-309 0017 |

To: Silica Systems, Dept ATSTR-1191-55, 1-4 The Mews, Hatherley Rd, Sidcup, Kent DA14 4DX

## PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

.....

..... Postcode: .....

Tel (Home): ..... Tel (Work): .....

Company Name (if applicable): .....

Which computer(s), if any, do you own? ..... 55B

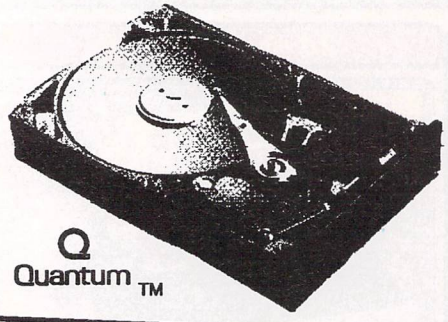
E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

# Data Pulse Hard Drives

## Quantum Mechanics

The cached Quantum Mechanisms used in the Data-Pulse range of Hard Drives are made to very high American Military standard and are covered by a 2 year manufacturers warranty (from date of manufacture). They are all 3.5" mechanisms with a height of just 1 inch and integrated SCSI controllers. They have an average access time of 11ms utilising a 64K look ahead disk cache.

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




## Data Pulse Hard Drives

*The Data Pulse range of drives come in a variety of capacities and include the following.*

- *Full Metal case providing good shielding and can be used as a monitor stand.*
- *On/Off switch and DMA device selector mounted on front.*
- *Integral PSU.*
- *DMA Out for Daisy chaining.*
- *Space for second mechanism internally.*
- *Choice of controller boards (prices differ): GE-Soft board or ICD board(with clock).*

*Both boards have a data transfer rate in excess of 1Mb per second. Both come with formatting and partitioning software.*

- *All drives come with a range of PD utilities and Turtle Backup software, plus demo's of Midistudio and Midistudio Master.*

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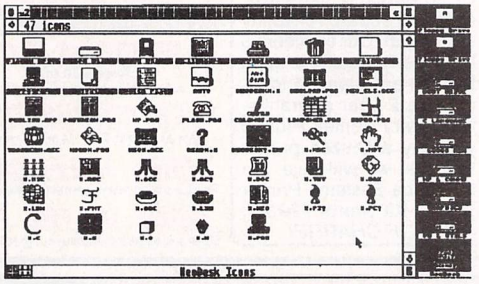
| *52Mb 11ms (GE-Soft)* | *£ 409.99* |
| *52Mb 11ms (ICD+clock)* | *£ 429.99* |
| *105Mb 11ms (GE-Soft)* | *£ 519.99* |
| *105Mb 11ms (ICD+clock)* | *£ 539.99* |

*All prices include VAT & Delivery. Dealer enquiries welcome.*

## Special Offer




## NEO Desk 3 Special Offer

Due to the popularity of our hard drives and bulk purchasing power, We can now offer NEO Desk 3, the replacement desktop which was voted "Software utility of the year" for 1990 by ST Format readers, to buyers of our hard drives for just an extra £24.99. We can also offer this perfect hard drive companion to all existing Ladbroke Computing Hard Drive owners (Phone for details).

NEO DESK 3 TM

*"Neodesk 3 is truly invaluable for the ST owner."*
*-ST Format-*

# Ladbroke Computing International

33 Ormskirk Road
Preston, Lancashire
PR1 2QP
Tel: (0772) 203166
Fax: (0772) 561071

## Aries Memory Upgrades

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

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

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

The board comes in two configurations, 2Mb (upgradeable at a later date to 4Mb) and 4Mb.

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

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

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

### New Low Prices

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

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

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| *4 or 16 chip STF(M) only* | *£29.99* |

### Aries Upgrades STE

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| *512K SIMM's upgrade* | *£24.99* |
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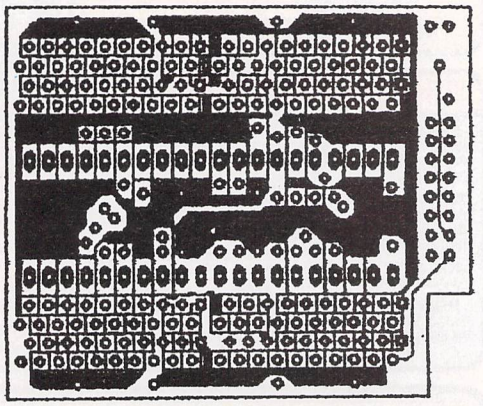
All the above prices include VAT. Delivery is free on orders over £100. Please check configuration of your machine with our staff before ordering chip or SIMM's upgrades.

*Dealer Enquiries Welcome.*



*New 2Mb / 4Mb Upgrade board for Any ST.*

*(Shown actual size)*

# Aries Upgrades

Ladbroke Computing International is a trading name of Ladbroke Computing Ltd. All trade marks recognised. All prices correct at copy date 16/09/91. Phone for latest prices

## Arcade classics

I have recently purchased a second-hand Atari ST and I would like to know where I can buy the "old fashioned" Pacman and Space Invaders. I know these are rather boring compared to the latest games but I still would like to buy them. Can you help?

Also what is all this double clicking about. I seem to be able to enter everything on one click. My system doesn't respond to two clicks.

*Lisa Lowery, Southall*

**Great versions of games like Pacman and Space Invaders are available as public domain on the ST. If you want a more up to date version of the greenie-blasting classic Space Invaders watch out for Super Space Invaders, coming soon from Domark.**

**As for your mouse problem – what's a click between friends?**

## Satisfied customer

With the help of your magazine, I would like to thank two English firms, Microprose and HiSoft, for their good after sales service. The first sent me completely free of charge a game of my choice to substitute the game Kennedy Approach, that I used with my ST till I changed to an STE (that program is not compatible with my STE).

The latter sent me a complete new manual, free of charge for the game Proflight – my manual had several pages not printed. All this and the games weren't even bought from them or in the UK.

This kind of service is extremely difficult to find in Italy from the dealers, so it is very important for people like me, living in the deep south of Europe. Thank you.

*Antonio Aureli, Tivoli, Italy*

**It's good to hear you are getting good service from UK firms. It makes a nice change to hear customers taking the trouble to praise software houses.**

## STE stunner

I've just come across a game which actually makes use of the STE's stereo sound capabilities and blitter chip.

The game is Thailon's Wings of Death, a vertically scrolling shoot-'em-up, best described as Xenon II for the STE. The game can be switched between different modes to emulate older STs if desired.

Please could you tell me if there are any other games available, or in development, which make use of the STE's superior capabilities?

*Tony Ross, Liverpool*

**At last! Software is filtering through that makes the most of the STEs extra features.**

**The future is bright for the STE if what was demonstrated at September's European Computer Entertainment Show is anything to go by. Keep an eye on *ST Gamer* for some exciting developments already in the pipeline.**

## Packing them in

With reference to the over-crowding at the 16-Bit Computer Show held at the Novotel, I too was greatly disturbed. I was there at 11.30am on the Friday. I had hoped it would be quieter then with kids at school, but I think truancy records must have been set that day. If there had been a fire or some other emergency I shudder to think what could of happened. It took me long enough to find my way out as it was.

I did not stay to look around properly and I for one will never again attend a show at the Novotel unless the organisers state that they have solved the dangerous overcrowding problem.

*D Lavington, Ealing, London*

**I was at the show for the full three days, so I can sympathise with your comments on how busy the show was.**

**I think you have to expect a good few people at a consumer show of 16-bit's size, but it would have been nice if the air-conditioning was a little more effective. As far as we can tell, the next show in February will be at the Novotel, so it looks as if you will miss it.**

So, what do you think of the show so far?

Do you like the all new Atari ST User?

Do you think it could be improved?

Write now! to:

Eddie McKendrick,
Atari ST User,
Europa House,
Adlington Park,
Macclesfield,
SK10 4NP.

## STE support

I was disappointed to read your reply to R E Riches' suggestion of more information on software for the STE (ST User 67).

You stated that there were "relatively too few STE owners" to make his proposals workable. It may be true that STFM owners outnumber us STE owners, but then again, I am sure there are a great number of readers who do not possess Midi equipment, use educational software, and so on. Surely these are catering for minority interests, so why is the STE so ➤

## The new user

How much I applaud your decision to change the current magazine format to one more alike the "old" ST World whilst also promising two cover disks. This I consider to be a very wise move, particularly in view of the current trend in ST specific magazines.

It would appear that your editorial staff are finally becoming more mature in both their outlook and appraisal of ST users' needs and requirements - certainly I was not alone in mourning the passing of ST World. It was a most interesting and rewarding publication.

At the same time, I am also sure that the dropping of the in-magazine games reviews is also a shrewd move.

I had often thought, on purchasing the many dedicated ST magazines, that there was never enough "original" copy to justify the continual games reviews – often, as they were, appearing in all major ST mags in the same month.

I suppose, in the halcyon days of the ST, everyone was jumping on the bandwagon while the average ST reader was perceived as a youngish game player perhaps more interested in "piracy" and "cracking" than in innovative programming.

Now, however, I imagine that you consider the average readers, the faithful subscribers, and the regular newsagent copy shifters, have grown more mature in computing tastes, and subsequently require a more serious journal to satisfy their growing intellectual needs.

When one thinks of all that an ST is really capable of, and yet, basically, how little used its untapped potential is, it never ceases to amaze me. It just goes to show the power of leisure/gaming software over having thorough command of both machine and programming skills.

So, keep up the good work. Always remain aware of not just what your current readers want, but also what your potential readers may require. Keep a close eye on continental attitude, and support the dedicated Atari-ist, and your magazine may survive where many others have fallen, or are about to fall, as is, I am sure, your wish.

I must admit that, at one time, in a straight comparison with Format, I thought you were losing it! Maybe you had the same thought too. Anyway, good luck with the "new" ST User.

Finally, your layout - hopefully this will improve too Do you really think that overlaying text on a screendump of Cybercon III (pages 46-47, Sep '91) makes for easy reading? Choice of font, background pattern and contrast should always render an easy read for the consumer, no matter how avant-garde the publisher may wish to be!

*A. C. Rendell, Swansea*

**£10 PRIZE letter**

**Well, since writing that letter you will have actually received the first of our new look issues. I hope it compares well with your expectations.**

**We are not de-emphasising games coverage, nor serious content.**

**It simply makes sense to recognise that these are two diverse interests and covered each in-depth, but separately.**

**You will see that the design of the magazine has changed quite substantially. Watch out for more innovation in the months ahead.**

unpalatable a topic? When I upgraded from an STFM to an STE, I did so for a number of reasons, but one of these was the promised support for the machine.

Admittedly, many new art packages use the extra colours, and some music programs take advantage of the stereo sound and so on, but its capabilities remain largely ignored by the mainstream software companies.

If your magazine were to publish details of new software that actually used the STE's facilities then an aura of expectation would be created, not only from the public but within software houses. As this develops, and the proportion of STE to STFM owners narrows, the demand for software that not only runs on the STE but uses it will grow ever stronger.

Perhaps software companies believe the added expense of paying programmers to include additional routines for STE owners is not financially viable. Yet I for one am much more likely to buy a piece of software that supports the STE.

I hope you will reconsider including information for STE owners. I think you'll find there are more than you think.

*Douglas Male, Weybridge*

**We do actually cater for STE owners and we will continue to do so over the coming months.**

**The STE has been given an important boost by Atari. Now that it is the entry level machine more software is bound to be produced for it.**

**Take a look at our STE coverage on the Runtime pages of this issue. I think you will agree we do more for STE owners than most other magazines.**

## Let's go...

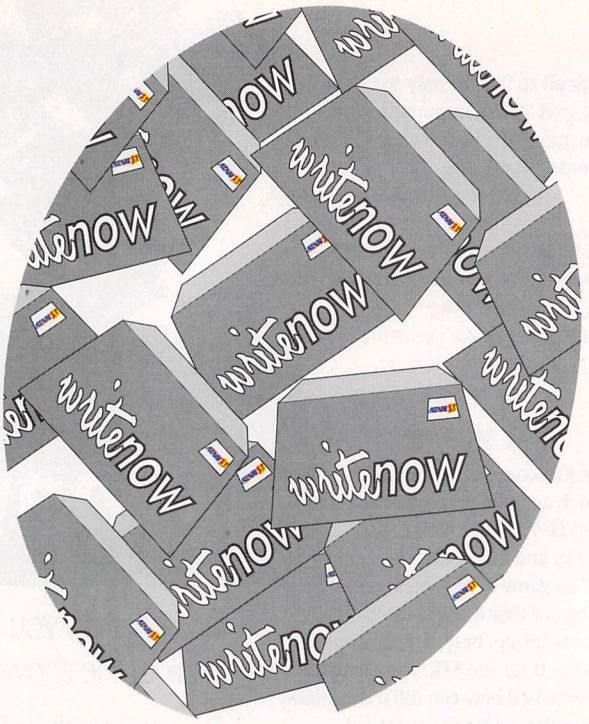
I recently bought a copy of Lemmings which I am very happy with. However I thought the sound effects and music could definitely be improved.

About two weeks later I went to the house of an Amiga owning friend. After playing lots of games we eventually got round to playing Lemmings. I was shocked to discover that the Amiga version had much better sound effects than the ST version. This made the game even better than it already is.

This annoyed me because I know that the ST is more than capable of producing these sound effects. I am sure that Lemmings is not the only example of games where the Amiga version is better but both versions could be exactly the same. In some cases the ST version could even be better.

If this sort of thing is stopped then the myth that the Amiga is better than the ST will finally be shown to be a lie thought up by an Amiga user who spent £100 more than he needed to on a new computer.

*James Naftalin, London*




**Capable or not, you are right in saying that the ST version of Lemmings, although brilliant, is not quite as good as the Amiga version.**

**You are also right to say that the ST is a better computer. In fact, it is a tact that Atari are using in their current advertising push. All current promotional material carries the slogan "Seriously, it's the better computer".**

**Note the use of the word "seriously". Atari are now pushing the ST range of machine as capable of much more than just games.**

**It would have been interesting to see an STE version of Lemmings. I am sure that would have been every bit as good as the Amiga version. Unfortunately the basic ST just can't match the Amiga's DMA sound and high capacity disk drive. Look on the bright side though – the ST has the best high res mono mode available anywhere!**

## Live long and prosper

I am writing to you to tell you about our fan club. The club is called Treknet Kent and is for fans of Star Trek and Star Trek: The Next Generation.

The newsletter is a quarterly publication of some 40 or more pages and is produced entirely on an Atari ST. Our second newsletter is just about to be sent out and we are very proud of it.

The membership of the club is 50 at present and gradually rising. We have regular meetings in which we screen videos of our favourite shows, films and we also have gaming evenings in which we play the Star Trek board game and role-playing game.

If you are planning to do a feature on newsletters produced on the ST or anything along these lines, would you consider us for a mention as we do need all the publicity we can get.

We would be happy to supply you with a copy of the next newsletter when it comes out for you to judge for yourselves. I feel I must mention that we are totally non profit making and everybody contributes to make the club what it is and what we hope it to be in the future.

*Captain A.Jarrett, Kent*

**We covered how to produce a newsletter in last month's issue, so you have missed the boat on that one I'm afraid.**

**I would be very interested to see your newsletter though. Who knows, we might give it a mention in our regular DTP column.**

## Publicity plea!

The reason why I'm writing is to plea to all ST Users in Australia to drop a postcard to the main Atari place in Oz, (Sydney I think) and ask for publicity for the ST – not just as a games machine either.

I'm sure if enough people do their bit and write we will get some. Please write today and everyone else anywhere if you care.

*R J Birks, Queensland, Australia*

**I'm not sure Atari will thank you for sack after sack of letters, but it will certainly prove that users are supporting the ST.**

## ATARI ST USER online!

We can be contacted on a whole host of bulletin boards and conferencing systems. If you have anything to say, why not get it off your chest online?

Speak to Eddie McKendrick on the following services:

Micronet.....999900386

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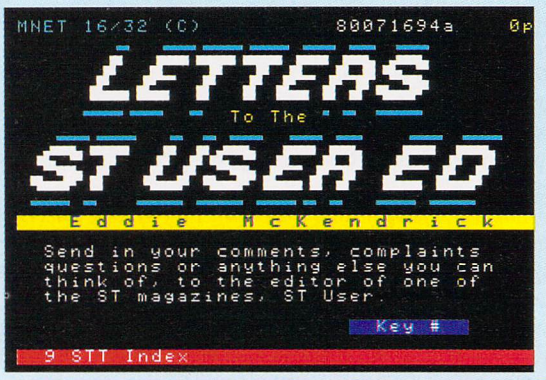
Micronet also features a weekly ST User live letters service. key *STT



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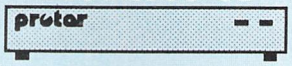


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ST User explains why "pirates" is too good a word

# Knaves and Thieves

Only if you follow the writings of the German philosopher Leibnitz, who believed God had created "the best of all possible worlds", could you summon enough optimism to assume that the thieves of this world would allow a profitable opportunity to pass them by. Most of us see things through slightly less rose-tinted spectacles.

In the early 'eighties, however, and for reasons best known to themselves, the computer press decided to slap the label of "piracy" on to the type of theft peculiar to microcomputers – software theft. The label was a throw back to the days of "pirate" radio stations, such as Radio Caroline, so called because they were based on ships out to sea, and in a short space of time it became accepted by all.

It is a complete misnomer. Software thieves aren't to be found climbing the rigging with swords in their teeth, or dashing their way through brave and romantic adventures, thus thoroughly deserving their rich booty for having entertained us all so well in the movies. They are just thieves.

Have you ever, at school or in work, had a real brainwave and found it impossible not to share it with a friend or colleague, only to find out the next day that they've presented it to your teacher or boss and passed it off as their own idea? You have? Then you too have been a victim of intellectual theft.

Imagine that your living depends on such original ideas and you find yourself in the position of a software author. Imagine again that your mortgage repayments depend on the development and packaging of the fruits of that idea, and you put yourself in the position of almost everyone else in the leisure software industry.

Not a nice feeling, is it? I mean, if you caught someone with his or her hand in your wallet, would you call that person a pirate, or would your exclamation be rather less printable?

## Flip a coin

If we may put on another hat, what about the punters, those whose expenditure on leisure software *constitutes* the software companies' profits? From their point of view, the piracy issue is less clearly defined.

Bombarded from all sides by peer pressures, extremely well thought out and cunningly pitched advertising, the reviews and recommendations of dozens of computer magazines, and the soaring price of games software, many of our readers may be thinking to themselves "what about us?".

Since the release of Kick Off 2 in 1989, the consumer has watched the average price of a top game soar from £20 to £30 and nudge upwards towards the £35 mark. In that time, we are led to believe, piracy has, if anything, dropped off as the industry fights back through the Federation Against Software Theft (FAST) and the European Leisure Software Publishers' ➤

## The FAST answer

***The Federation Against Software Theft (FAST), in existence since 1984, is the computer software industry's answer to the threat of piracy.***

***We spoke to FAST's chief executive, Bob Hay, and asked him to summarise the state of play on today's software high seas. What, we asked, is the most alarming aspect about piracy today?***

***"There's an international aspect to piracy in this country," Bob told us, 'in that many so-called cracking crews are in contact with groups in Europe and the USA on a network of dozens or even hundreds of pirate bulletin boards."***

***And is this your biggest headache?***

***"Not just that. Distribution is an extremely difficult problem. Swapping and passing programs around is one thing, but unless money changes hands we can find it difficult to bring action."***

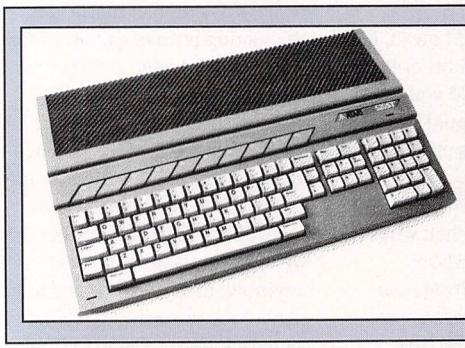
***You mean the sort of swapping carried out by schoolboys?***

***"Yes, but youngsters who swap illegal software are more of an educational awareness problem. We're not in the business of busting kids. It's not an answer to criminalise them."***

***Who, then, are FAST's main targets?***

***"My target is the professional pirate who is in it for a profit, but FAST isn't just about prosecutions. Our three aims have always been to prosecute where necessary, but also to launch education and awareness initiatives, and to push for legal initiatives."***

# SOFTMACHINE



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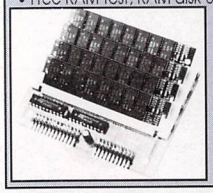

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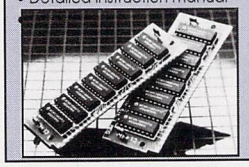
- Detailed instruction manual



- 0.5Mb populated £35.99
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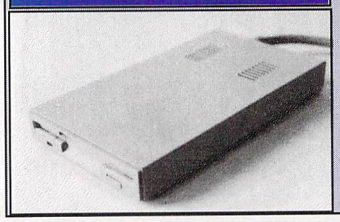
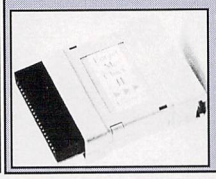
## Roctec 3.5" Floppy Disk Drive



- Citizen drive mechanism
- Capacity: 720k (formatted)
- Access time: 3ms track to track
- Compatible with all ST's
- On/Off switch at rear
- 28.5mm high
- Very quiet **£57.99**

## Forget-Me-Clock II

- Clock cartridge with full pass through port
- Sets system & keyboard clocks every time you turn on or reset your ST



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## Contriver Euromouse

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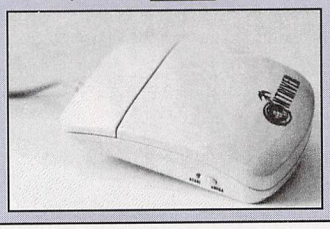

## Contriver Trackball

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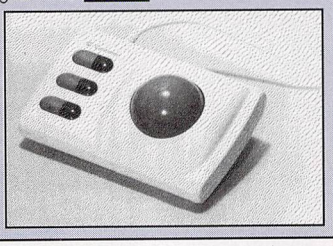
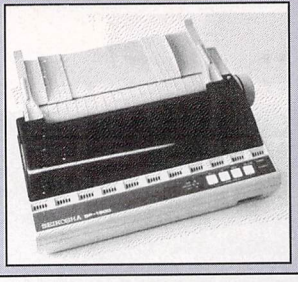


## Seikosha SP-1900AI Printer



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- Auto paper load and eject
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- Supplied complete with cables

- Optional tilt/swivel base available
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| Tempus 2 | £28.95 |
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| Wordflair | £59.95 |
| Word Perfect | £178.95 |
| Word Writer | £36.95 |
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| Timeworks Publisher 2 | £89.95 |

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| FTL Modula 2 Developer | £69.95 |
| GFA Basic Compiler | £23.95 |
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| Hisoft C Interpreter | £41.95 |
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| Citizen Swift 24 | £284.99 |
| Swift 9/24 Colour Kit | £34.99 |
| Star LC-20 | £154.99 |
| Star LC24-10 | £199.99 |
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Access

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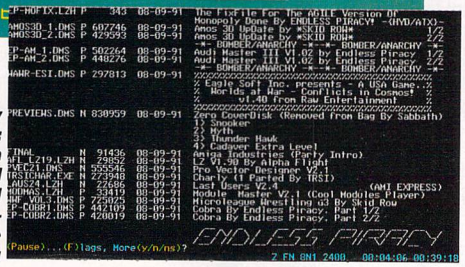
association (ELSPA). Why the discrepancy?

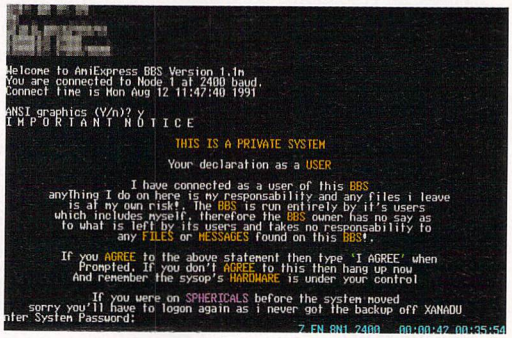
"We live", we were told by ELSPA's Roger Bennett, "in a capitalist society, and a product has to pay for itself." In other words, the software companies have increased the prices of their products to keep up with inflation and the rising costs of developing and marketing a successful game.

The market economy argument, however, could be couched in another way. If the industry is responding to the push and pull of a supply and demand system, then the very success of professional piracy operations is a clear indication of a ground swell of demand for cheaper games. Why shouldn't software houses reduce their prices, thereby reducing the demand for illegal software?

***Stunt Car Racer complete with cracking crew's message. The disk, supplied anonymously, is an example of how protected games software can turn up in an entirely copyable guide***




***The piracy inner circle: a London BBS packed with illegal software – yours for the taking***




***The sysop of this board thinks that this disclaimer is enough to admonish him from the crime of theft***

## Complex

If only life were so simple! There is no doubt an irrefutable aspect to this argument, but in the main it can be combated with another piece of simple capitalist deduction.

No matter how cheap a piece of software becomes, it will always be possible for someone to rip it off and sell it cheaper, because the thief has no overheads and no development costs.

You can still argue, of course, that low priced professional products will win out over dodgy pirate versions, but in the software industry a disk is a disk is a disk. Unlike in the video industry where many pirate tapes are of a dubious quality, when you pirate a game it is every bit as playable as the original. Faced with thieves who can often produce copies not only of the disks, but credible duplications of the manuals and even the packaging, software companies are in a position where they cannot compete with pirates. In any case, the opinion of many industry pundits is that to try to compete would be self–defeating, lending an air of legitimacy to the pirates, and smacking therefore of moral submission.

Where does this leave the end user, who might spend up to £100 per month on legitimate software? The ST owner with a wallet like a Tardis will be able to continue matching the software companies' rising prices, but for the rest of us there comes a time when the temptations of illegal but more affordable software can be too much to resist.

At this point, in a perfect world, the ST owner will tighten his or her entertainment belt and settle for fewer games. In the real world, however, this is a difficult exercise.

## Difficult

What of the parent with an ST–crazy child who brings home an obviously pirated game, or clamours for some of the dodgy looking but cheap software on offer at some market stalls? The only suggestion we can offer to people in this position is to report the software thief either to ELSPA or to FAST. Cold comfort, perhaps, but the only comfort we can give.

In the end, it is only through action on the part of the responsible ST–owning community that piracy will be tamed in our section of the market. Assuming that there will always be a demand for cheaper software, the only realistic way to break ➤

## The industry speaks

Though FAST, after a series of spectacular successes, have received more attention in recent months, it was ELSPA who first lit the fire that was to become the blazing piracy debate. Their advertisements in the computer press, inviting computer users to "shop" friends or colleagues involved in software theft, and offering a reward of £1000 for information leading to a conviction, brought new life to a tired old argument.

Stirring up controversy, the advertisements were shamelessly provocative, and did as much as anything else to bring piracy to the fore. Some readers found the ads a bit too much but only one, showing a teacher being shopped by his pupils, was withdrawn because it was thought to be too sweeping a brush with which to tar the nation's teachers.

ELSPA "aims at the top half of the [piracy] iceberg", as Roger Bennett, ELSPA's chief executive told us. So does ELSPA have no time for small time pirates?

"We receive over 100 calls a week, and they're all stored on answerphone. We will respond to all instances where the caller has hard evidence and leaves a name and address. This information is obviously totally confidential."

Hard evidence?

"Yes. We don't have the resources to follow up what could be a wild goose chase. If we're sent a piece of pirated software with a receipt from the shop or trader who sold it, we can act immediately."

We asked Roger if the level of piracy has decreased over the past year.

"There has been a drop in piracy... there's no doubt our campaign has had a substantial impact. This time last year a number one hit would be selling to no more than 10 per cent of the user base instead of the 50 per cent or so you might expect. Piracy was to blame for much of the lost sales, but the situation has improved."

So why have game prices continued to soar? We asked him if there was any risk of the software market becoming a sort of "cartel" where games houses set their prices at the level everyone else was settling on. Surely this is as much a factor in the pricing of games as piracy?

"I've often criticised the software industry for being sheep–like and following each other's lead," he explained, "but I'd refute any cartel view of the industry. It's a competitive market, and if a game is duff it won't sell. Magazines have a responsibility to point out the duff ones."

Do you think there could be a general drop in prices with your and FAST's successes?

"I see a drop in prices as a probability rather than a possibility, but the residual effects of last year's high levels of piracy are still being felt. It will take time for price cuts to filter through once games start selling to a larger proportion of the user base."

***Fairlight repackage an Ocean hit with some commercial flair***

➤ the vicious circle of spiralling prices is to cut out the illegal supply side of the market equation.

As more and more pirates are put out of business, the software industry will *have* to listen to the demands of its consumers and cut prices. Once companies know that they can compete again in a market virtually free of illegal and totally unfair competitors, they will have no excuse for continually hiking their prices, and that's when we'll see whether they really mean what they say about piracy.

Is it a threat to free competition or a convenient excuse? The only people in a position to force the issue are you, our readers, so get on those phones and shop the thieves to FAST or ELSPA. If you don't, you've only yourselves and the pirates to blame.

## Legal steps

FAST came into being initially through the impending amendment to the 1956 Copyright Act. While the software industry had been pushing for the sealing of loopholes in copyright law and the provision of full protection for magnetic media–based original material, the Home Office was reluctant to act if it meant placing more of a burden on existing law enforcement resources.

When the Home Office insisted that the software industry make some attempt to self–regulate, FAST was conceived as the body to fill the gap. A year after its formation in 1984, the Copyright (Computer Software) Amendment 1985 received its royal assent and computer piracy officially became a crime.

With legal backing, FAST went into action. Prosecutions were slow in coming in the early days, as the judicial system adjusted its thinking to take computer crime on board, but the number of "busts" has risen considerably since then, and Bob told us he now sees at least one successful prosecution a month. Do FAST always get their man?

"We've only lost one case that went to court. However, many cases are settled out of court."

FAST is in a position where it can negotiate on behalf of a member company to secure compensation from companies or organisations in an out of court settlement. This is often the most satisfactory way to deal with cases where there was no malice or profiteering intended, such as in a large company whose single wordprocessor package finds its way onto dozens of machines.

The recent much publicised case of The Yorkshire Evening Press, whose offices were raided on July 12 this year, shows how FAST will settle out of court when its members' interests can best be served in that way. After a settlement which Bob Hay described as "amicable", the software companies whose copyright had been infringed received suitable compensation.

However, the first leisure software pirate sent to jail after a FAST prosecution, Andrew Jayes of Nottingham, will have plenty of time to reflect on the error of his ways during his three month stretch behind bars. The prosecution follows a year in which FAST seized £2 million of illegal software and made 12 successful prosecutions.

The message to prospective pirates could hardly be written in clearer terms.

## The budget debate

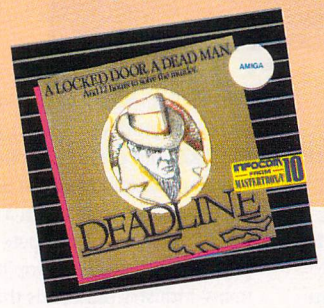
When challenged, a great many computer users will use the high price of leisure software to justify their Jolly Roger software collection. The argument goes that if software publishers want to wipe out piracy, they should remove the stimulus which leads most ordinary users to copy games. Bringing down the price of new games to £10 or less would, they claim, lead to many more people buying the original games.

While this argument has at first a certain amount of persuasive force, it takes only a little more examination to show just how specious it is as an explanation for piracy. As Andrew Wright from Virgin Mastertronic told us: "The only way you'll stop games from being pirated is to sell them for less than the price of a disk."

If Virgin Mastertronic, one of the biggest budget software producers, falls prey to a high level of piracy, the argument about piracy being related to high prices loses much of its credibility. "Our re–released titles suffer most," Andrew explained, "especially relatively unprotected stuff like the Infocom games. I've often seen these for offer on bulletin boards."

While it is accurate, then, to say that more people would buy a particular game if it was cheaper, it is clearly not the case that fewer people would pirate it. Professional pirates are in business to rip off the software industry. Lower official prices would simply mean the pirates making slightly less money from their operations.

There's no denying the fact that some software is more expensive than it should be, and that sometimes it seems the copy protection routines receive more development time than the game itself, but high prices are no way to justify theft.



***Even if it's cheap – people still want it cheaper***

## A myth exploded

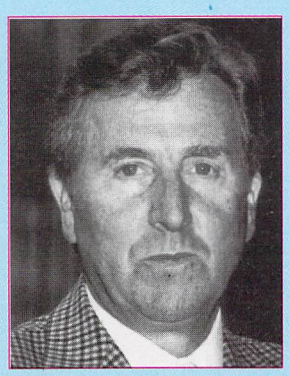
It is *illegal* to make *any* copy of *any* piece of commercial software without having first obtained the written permission of the party or parties holding the copyright to that software. Not a particularly ambiguous position, when you get down to it.

You can't make a copy for another member of the family, or one to loan to a friend, or one to give away for nothing. You can't even make a backup copy for your own use, despite the belief held by many people that to do so is alright.

For a good few years now there have existed cartridge–based copying systems designed to break through just about any disk–based copy protection and "backup" the protected software to another disk. Although not sold as aids to piracy they have, inevitably, been used for the wrong purposes by some owners.

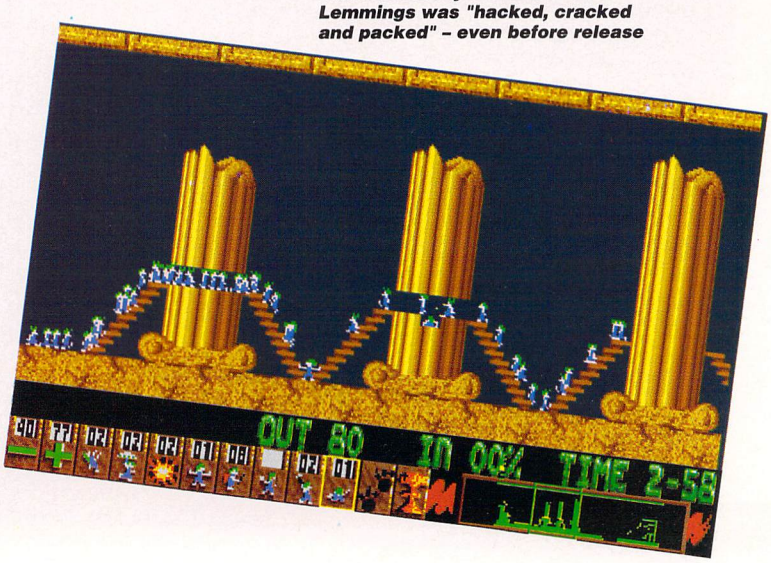
FAST's Bob Hay told us that he's seen many cases of disks copied by people who would otherwise not have had the expertise to crack the protection routines had they not been making illegal use of backup cartridges. For this reason, and after rumblings in the industry, many computer magazines including *ST User* have dropped all advertisements for such devices.

This is yet another example of how the actions of a minority of thieves can affect a great many more people, from the manufacturers' lost sales, through to the magazines' lost advertising revenue, to the innocent users of backup devices. It is a perfect illustration of how software theft hits all of us, not just the developers.



***Bob Hay – would you buy a second hand copy of Lemmings from this man?***

***Dave Jones at DMA Designs was understandably sickened when Lemmings was "hacked, cracked and packed" – even before release***



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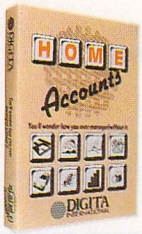


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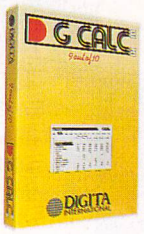

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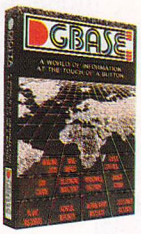


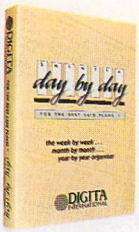


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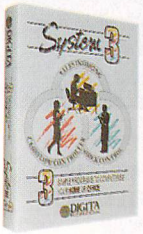


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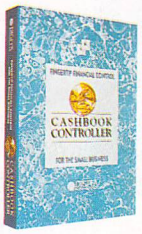


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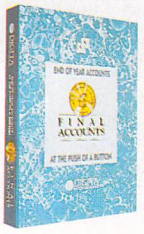


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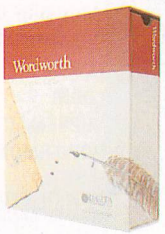


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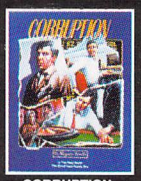
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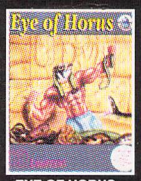
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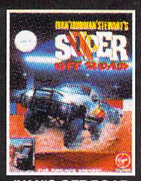
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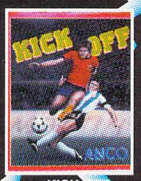
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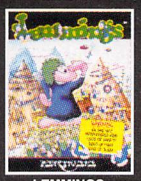
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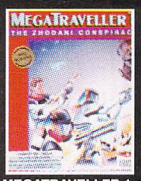
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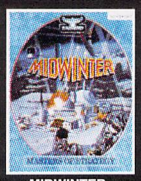
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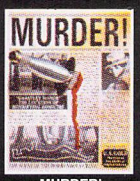
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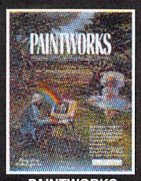
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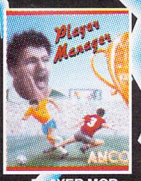
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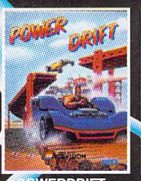
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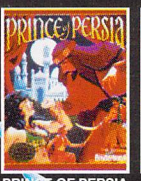
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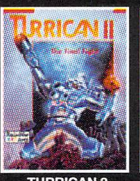
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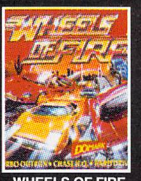
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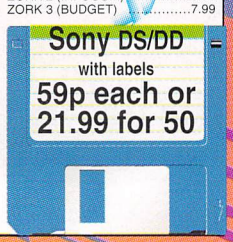

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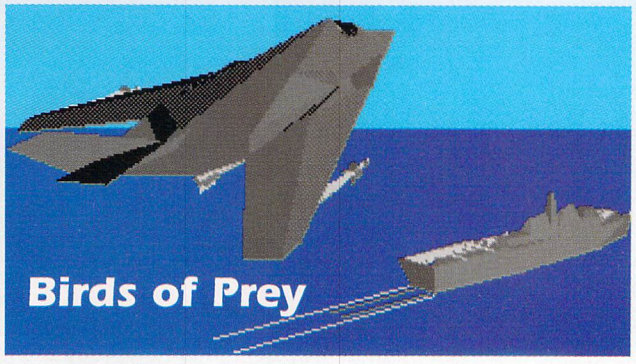
Birds of Prey

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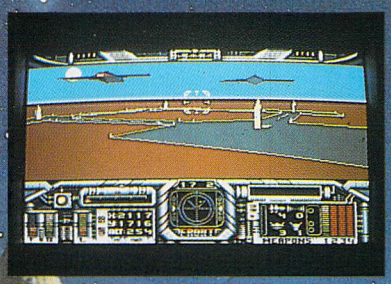

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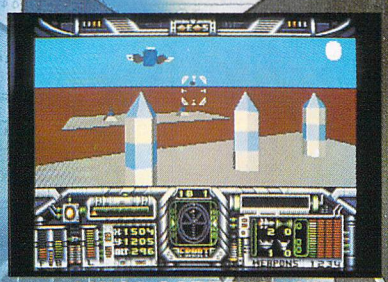

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21ST CENTURY ENTERTAINMENT


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# ONword

What's hot and what's not. Gamer spills the beans on the latest from the ST games scene

## FIRST SAMURAI – Image Works

**Excuse me a moment while I wet myself. Now I know these previews are meant to be unbiased and containing nothing more than information, but this product really is going to be the dogs you-know-whats. Mind-gibbering graphics and orchestral sound effects combine with brilliant beat-'em-up style gameplay to produce what deserves to be the Christmas number one on merit alone.**

**The plot puts you in control of a young Samurai who follows the Demon King who murdered his master to the Japan of the 24th century in an attempt to avenge the guy's death. Eight way scrolling horizontal action gives the player plenty of scope to use his sword in any direction he wants. If you get the moves right you can look really stylish by jumping up, getting a bat above you on the way, one across from you while you're at the top and another one below you one the way down. Flash is an understatement.**

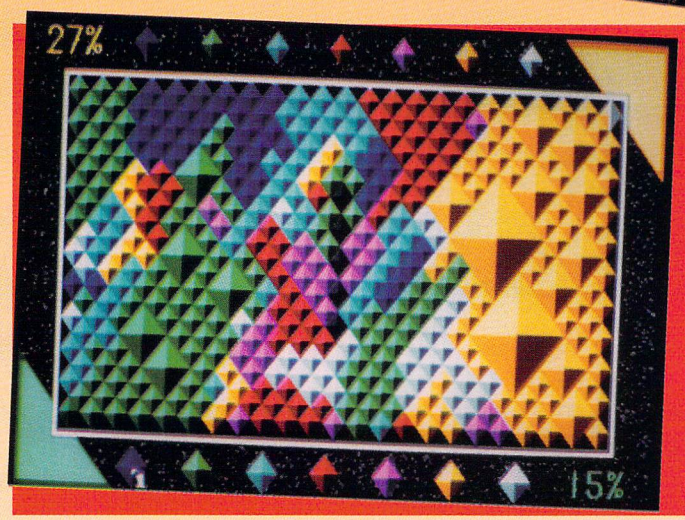
**Due around November at a price TBA.**

## Core's Thunderhawk in "It grew on us" shocker

**Bit embarrassing this really. You see, we've changed our minds. The thing is, last month we gave Thunderhawk a mark of 75 per cent – a bit less than other reviews but we have a very strong and independent editorial policy as far as reviews go so we didn't worry about it too much.**

**Well, when Core sent us the finished version we realised it included a Trainer module that made the game far easier to get into, and therefore a lot more fun to play when you finally get into the full game. So what we want to do is change the mark. Unusual though this sort of thing is, we don't want to see the game suffer unnecessarily because we have too much pride to admit that we've changed our minds.**

**The new mark? 85 per cent. Core have produced a fine game.**




## 7 COLOURS – Infogames

The game area is composed of a large number of multicoloured diamonds. The objective is to enlarge your territory to over 50 per cent of the total before your opponent does, by absorbing the diamonds adjacent to the ones you are currently in possession of.

Gradually your territory begins to grow, and hopefully faster than your opponents. Its Russian pedigree promises a highly addictive strategy game for everyone. Available this November at £19.99.

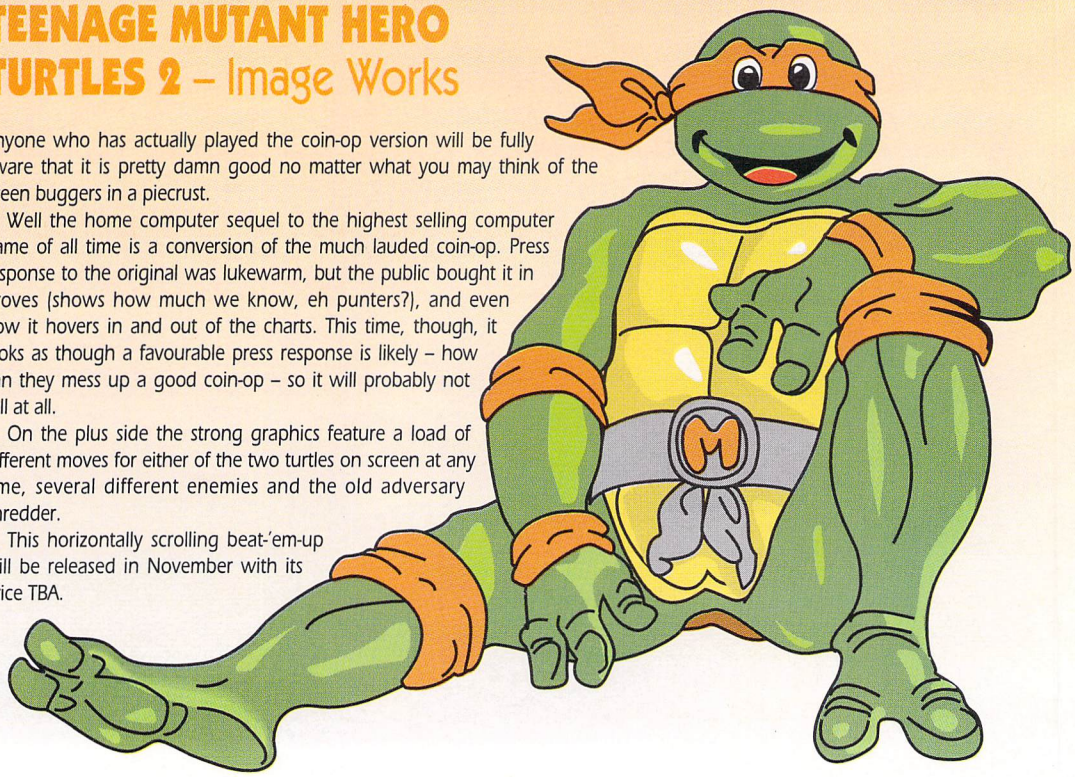
## TEENAGE MUTANT HERO TURTLES 2 – Image Works

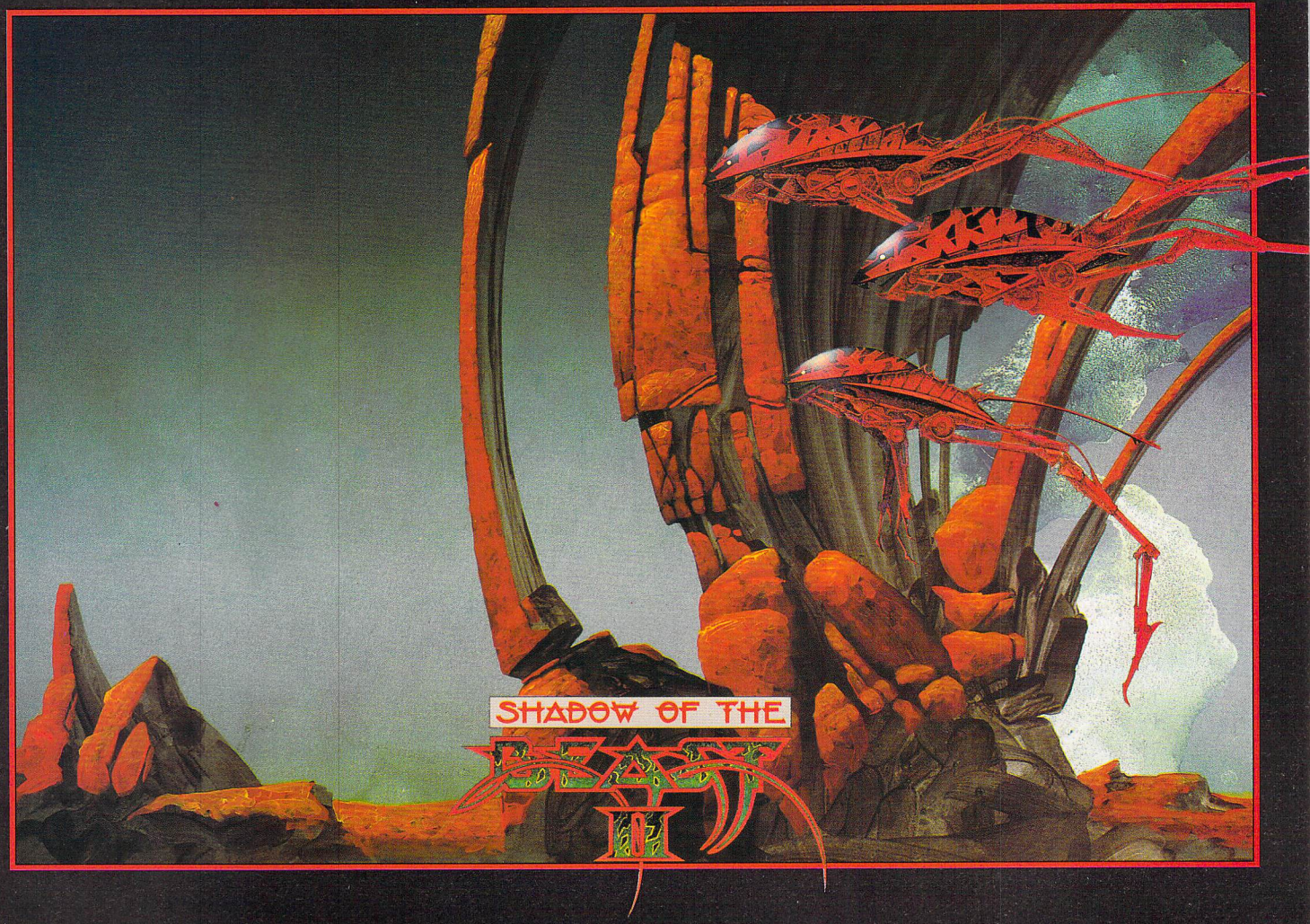
Anyone who has actually played the coin-op version will be fully aware that it is pretty damn good no matter what you may think of the green buggers in a piecrust.

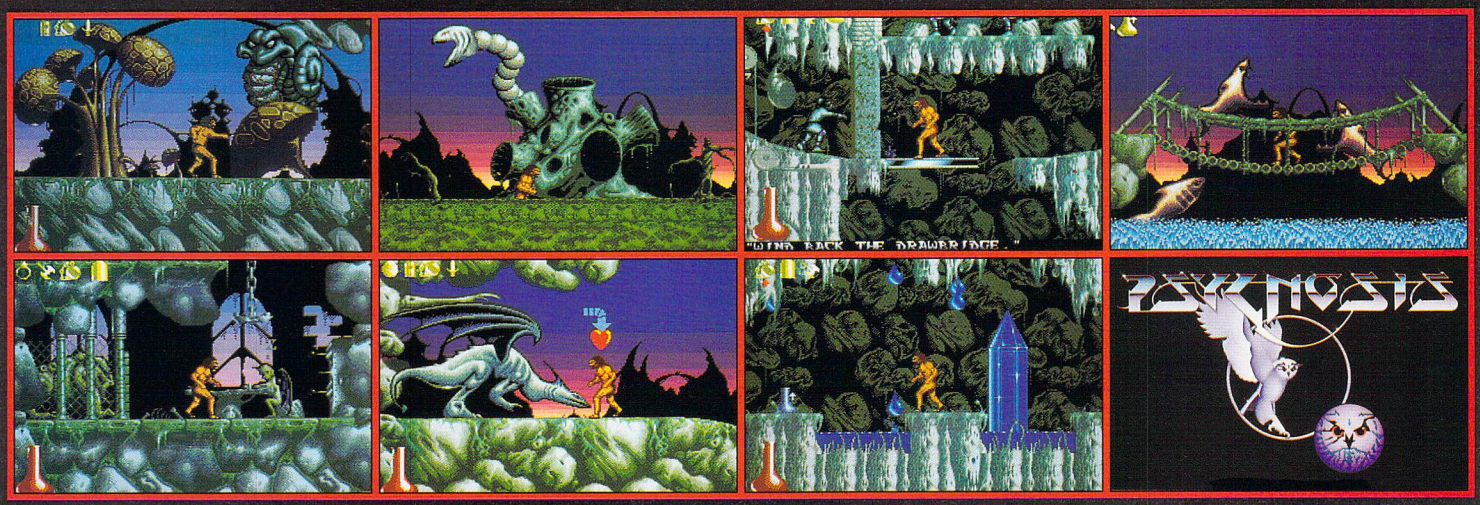
Well the home computer sequel to the highest selling computer game of all time is a conversion of the much lauded coin-op. Press response to the original was lukewarm, but the public bought it in droves (shows how much we know, eh punters?), and even now it hovers in and out of the charts. This time, though, it looks as though a favourable press response is likely – how can they mess up a good coin-op – so it will probably not sell at all.

On the plus side the strong graphics feature a load of different moves for either of the two turtles on screen at any time, several different enemies and the old adversary Shredder.

This horizontally scrolling beat-'em-up will be released in November with its price TBA.






**Beast II available soon on the ST**

## THE BEAST IS BACK!

*THE SEQUEL TO THE TOP SELLING AMIGA GAME OF 1989*

THE CONFLICT CONTINUES . . .

Your deadly struggle for freedom against the dark forces of the Beast Lord is now but a painful memory. You try to forget the anguish of the past by concentrating on your prize for success in the bloody battle: the return of your humanoid body.

But as you slowly adjust to your newly-won physique, the pain you thought gone is about to return . . . The Beast Mage has kidnapped your sister! She must be rescued before she falls foul of his dark arts. You journey to a hostile alien world to face the malevolent hosts of the Beast Mage and interact with more friendly characters to learn of your unfamiliar surroundings.

You must fight your way through many enemy-infested levels collecting and using weapons and objects to aid your crusade towards confict with the Beast Mage . . . before he makes your sister his own!

*Screen Shots from the Amiga version*

**SEEING IS BELIEVING**

# ONword

...continued

## LOTUS TURBO CHALLENGE II

What a stonker of a game the first one was – it redefined what a racing game should look like and do. This time out it has been improved and it includes another car, the Lotus Elan. This car, and I have been witness to this on a track that would put the Corkscrew to shame, has tyres made of glue and suspension made out of something even more remarkable.

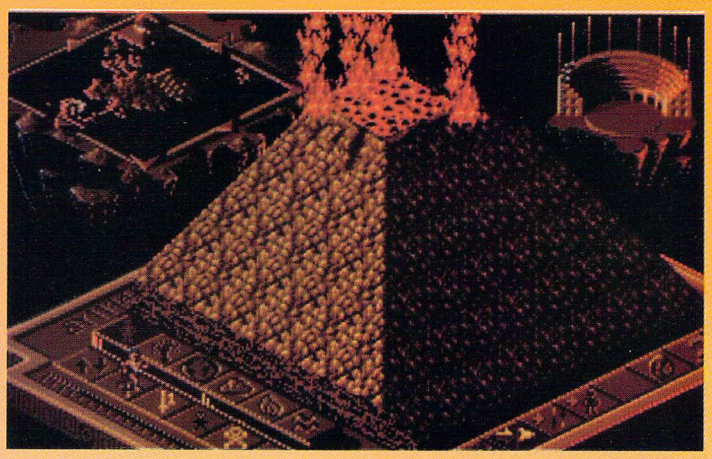
Instead of the 30 tracks of the original, this time the game's creators have divided the game into eight stages, with each stage being made up of a number of checkpoints in the time-honoured racing game tradition.

Some innovative new effects have been included that have never been seen in such a well implemented manner on a home computer before, but fans of Sega's Rad Mobile coin-op may well know them. The effects give a very convincing impression of rain and snow as you drive through it, even though you are not in the car but view it from behind – visibilty is impaired and handling becomes more difficult.

The best effect is fog – out of the blank grey ahead you gradually begin to see images then shapes and finally the whole thing as it passes dangerously close. Cars loom at you from out of the fog, and the twists and turns of the track become even more treacherous.

The main new feature for the sequel is the link-up option that will allow four players to compete on two machines using the split screen feature that was the trademark of the original. But if one player wishes to go on his own, the screen goes back to a full screen view, unlike the original, getting rid of one of the criticisms of that game.

With all this going on it is a wonder that they have retained the speed and smooth animation of the track and objects alongside it that made the game such a winner for Gremlin.



## POPULOUS II – Electronic Arts

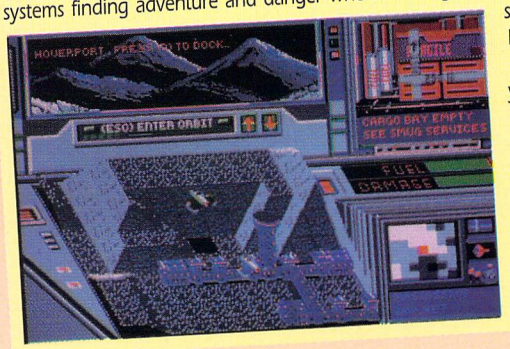
What can I say? All they've told me is that it's based in ancient Greece, it is new and improved and the graphics look fantastic. That's no bloody use to me is it?

Beyond that it is all highly confidential, but it will be out in December at £29.99

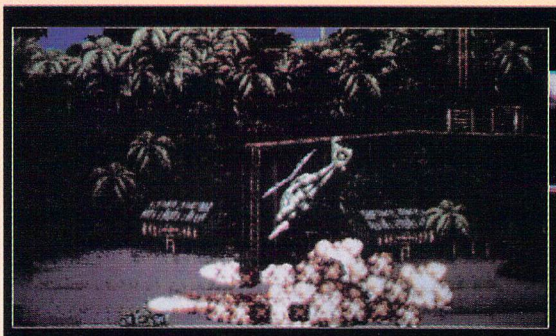
## HARD NOVA – Electronic Arts

This PC conversion puts you in the role of Nova, a hard bitten mercenary who has lost his whole crew in a freak accident involving a meteorite and a pickled onion, probably.

The player must recruit a new crew and travel the anarchic wastes of the four systems finding adventure and danger wherever he goes. Makes him sound like some sort of mad Rupert Bear.




The game asks you to hang around in bars to meet and kill people, travel through space and explore planets using the hovership. It will be available this October at £25.99



## APOCALYPSE – Image Works

Sometime in the near future a jungle scenario reminiscent of Vietnam has reared its ugly head. A guerilla force backed by an Eastern power has humiliated a vastly superior army, and the only answer is evacuation. You are the pilot of the heavily armoured supercopter that has the task of picking up the stranded conscripts and airlifting them back to the safety of your forward post.

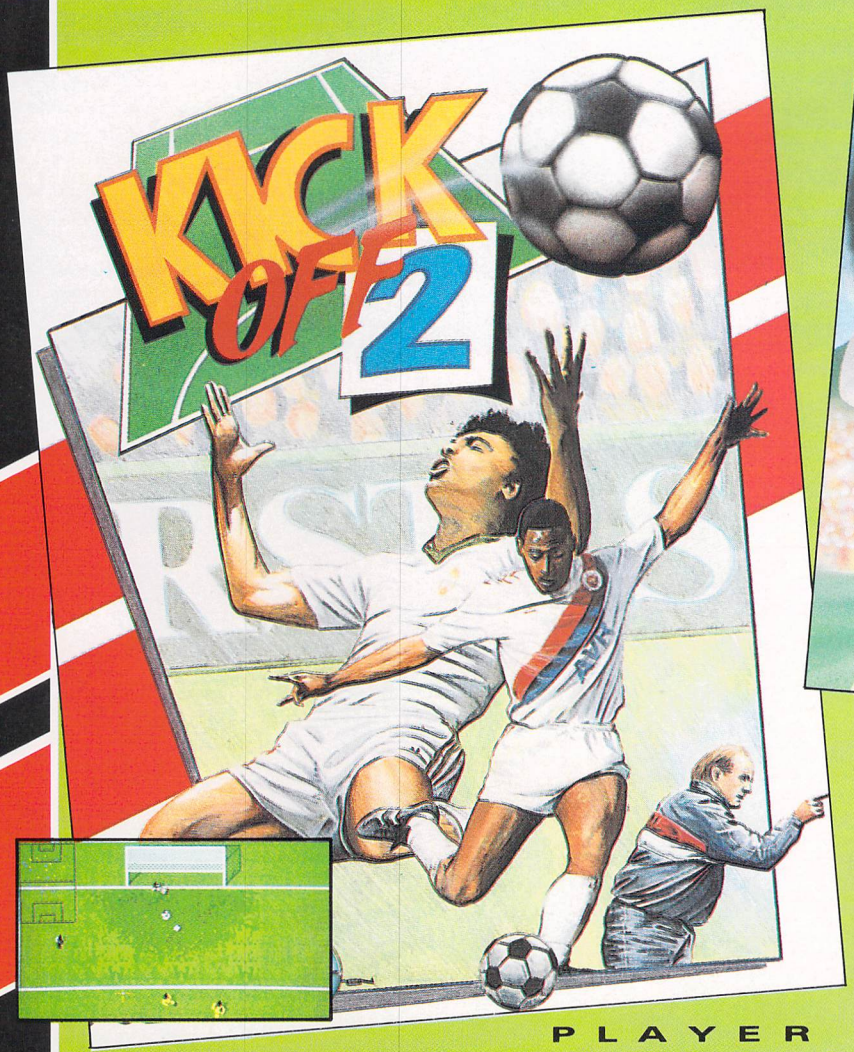
At the moment there is little in the game apart from the helicopter movements and animations but these alone are very impressive, as it it spins around spewing death and destruction in all directions.

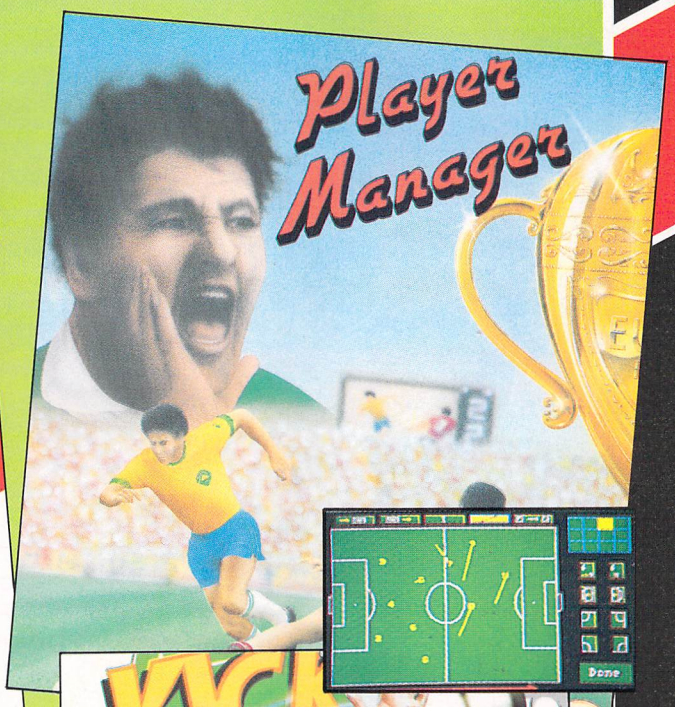
When it appears in the new year it should be rather good, if mindless death and destruction is your bag. Price to be announced.

# FOOTBALL CRAZY

## 3 OF SOCCERS GREATEST HITS!

## PLUS WORLD CUP '90'



**KICK OFF 2**

| | |
|---|---|
| AMIGA FORMAT | - Best footy game to have appeared on any machine. |
| AMIGA USER INT | - The best computer game ever. |
| ST FORMAT | - What a game! Gem to Play. Magic. |
| ST ACTION | - The best game ever to grace the ST. Highest accolade I can give. |
| The Ace | - Brilliant. Buy-Buy-Buy. |
| The One | - Ultimate Soccer simulation |

**PLAYER MANAGER**

| | |
|---|---|
| ST Action | - A stroke of pure genius. |
| The One | - Exceptional. Most involved, rewarding and playable. |
| Amiga Format | - Enthralling and Addictive. |
| ST Format | - Brilliant. |

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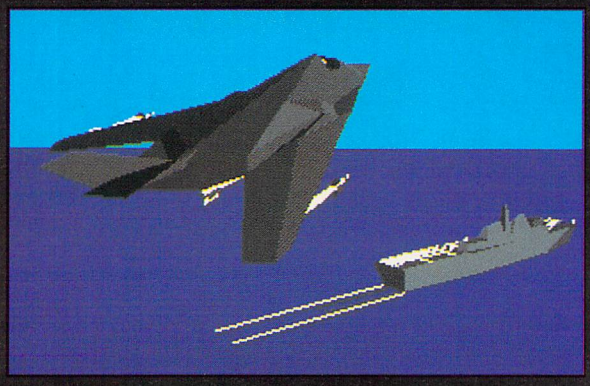
face2face

## Paul Rigby questions designer and writer Paul Humphreys about a long awaited air battle simulation...

Birds of Prey, produced by Argonaut and distributed via Electronic Arts, has had a rather long gestation period, not to mention a name change. Originally to be known as Hawk, this flight simulation has appeared to have taken forever to hit the shelves.

The reason is, apparently, a simple matter of a protracted development period. No-one really knew what they wanted so ideas were bounced around until something concrete began to develop.



At the time of writing, Birds of Prey for the ST does not have a scheduled release date, although work has begun. To placate you should you desperately require some information to get you through to the final release day, allow Chris Humphries, designer and writer on the project, to offer a few words of wisdom.

The most obvious first question is – what is Birds of Prey? Chris: "It is a combat flight simulator which allows you to fly 40 different types of aircraft on 12 different types of mission in a fictitious world consisting of airbases and aircraft carriers, cities, roads, rivers, that kind of thing."

"It allows you to choose whatever type of mission you'd like to fly: bombing, air interception, air superiority, tank busting, etc. You can also choose what type of aircraft you want to do it in. Although we try to help people to choose an appropriate aircraft it is up to them to make their own choice. They can then load up whatever weapons they think are appropriate and go off and do it."

Fictitious it may be, but is there a background scenario?

"Not really. Although the aircraft featured are real it doesn't involve real countries. There are just two sides. You choose which side you want to be on and you then fight on that side.

"You try and tip the balance of power by your human element. The game can, almost, run by itself where both sides make attacks on each other. You try and assist your side to give them the edge."

This game is not just a simple matter of completing a list of missions, for there are a variety of dynamic elements included. This is because you will be taking part in a fully-fledged battle. So, while you are hitting enemy aircraft and bases, your fellow combatants will be engaged in tank battles, tactical firefights, artillery bombardments, and any other offensive action you find ➤

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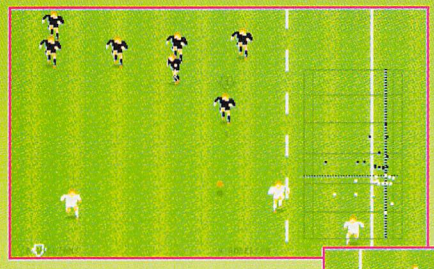
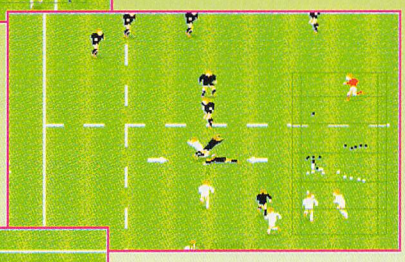
Join the club and pull down your trousers, its...

# WORLD CLASS RUGBY

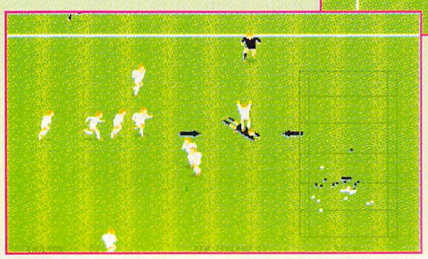
AUDIOGENIC ▪ £25.99 ▪ 1/2 meg ▪ Joystick ▪ Out now



Victims of a police baton charge, the players run for their lives



The overhead view is easiest to get used to but you can't see much of the pitch



The "radar map" on the right of the screen can be changed to which three sizes suit best

World Class Rugby. Hmmm, sounds a bit like World Cup Rugby if you ask me. And, my word if it isn't the Rugby World Cup this month, well knock me down with a feather and call me Susan if that isn't one of the most remarkable coincidences this century. And bugger me if there isn't another rugby game reviewed next month. How do I know? I'm psychic that's how.

Rugby to the uninitiated is a complex game – hundreds of rules make up the sport, covering every possible situation. But it isn't really necessary to know more than the basics if you want to play or watch a game.

This version, by all accounts, tries to take in all of the basics and some of the more complex ones, but to include every single rule and couple it with the infallible logic of a computer would mean that you might as well start carving a headstone for playability right now. Fortunately you don't have to.

The match can be a friendly, in the league, then the League Cup or the World Cup. The four options give you the opportunity to play loads of opponents in all sorts of environments, and the chance to fight your way to the top in three very different arenas.

On the pitch at any one time you will have fifteen men – eight forwards and seven backs – the forwards being the ones who make up the scrum. The idea is basically to run up the field with an oval ball, get it behind the goal and touch it down. The problem is that you cannot pass it forward – it must always be passed to someone behind.

This sort of sport involves heavy contact which may mean that the ball gets trapped under a pile of men and the game effectively grinds to a halt. This is where the scrum comes in, or if someone was at fault, various penalties. The scrum, or the ruck when the game hasn't been stopped, involve a large group of men being punched forward by the waggling of your joystick. Coloured arrows show the position of the ball and whether you are in control of it. If the ball goes out of play you get

Those chaps from Argonaut in gratuitous game name pun type photo opportunity

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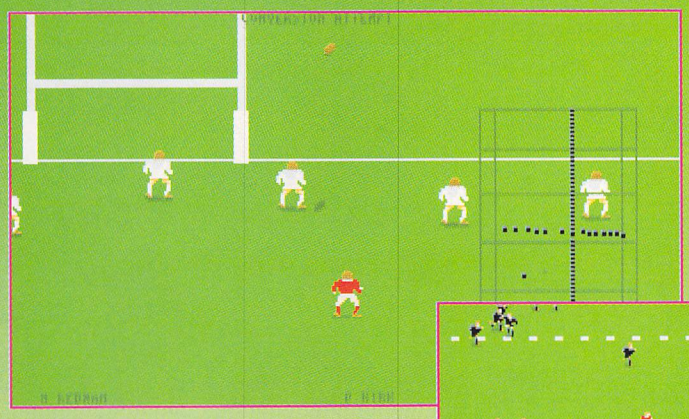
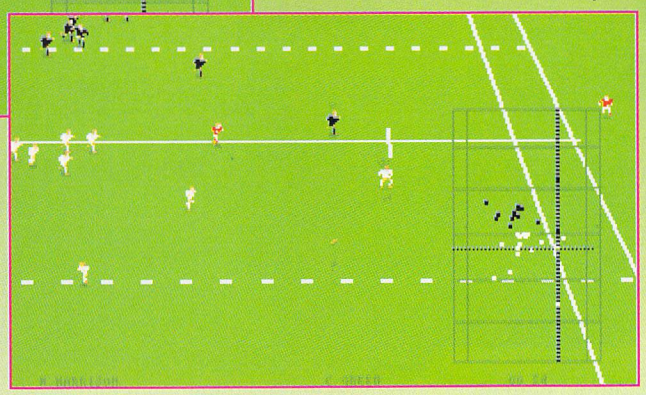


Behind the goal looking up the pitch we watch the conversion attempt fail



The pseudo 3D allows you to see all the moves on the pitch

a line-out. This set piece gives you the chance to pick one of the seven or eight routines available which, if you gain possession, will be run by the computer in a similar way to some American Football games.

The ball can be kicked forward down the pitch but it must not be picked up by anyone other than the kicker or one of the opposition.

The most complex rules included in this version revolve around offsides and knock ons. In the full game these rules cause the majority of the hold-ups, which is why rugby is given such liberal advantage rules.

Advantage is a difficult concept to get over to a computer in the way a referee would interpret it which is why the offside and knock on rules can be turned off if you fancy a really fast moving game. But when they are on it doesn't make the game completely unplayable, just a little bit more pedestrian.

Controls are very simple. Depending on the situation, fire will either change the controlled player, pass, tackle or kick. Dead easy. The pitch is viewed from either above or a pseudo 3D that is identical to that of John Madden's on the Mega Drive, and it plays like a dream.

There is plenty of scope in computer rugby for the aforementioned headstone but Denton Designs have managed to produce a highly playable game that should do for computerised rugby what Kick Off did for football.

**Jools**

VISION
GGG
Simple sprites but a tad boring.

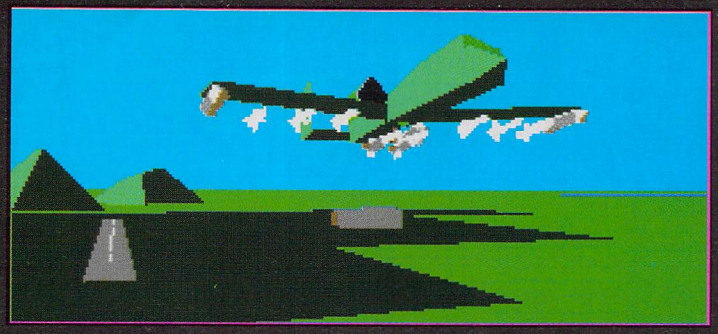
AUDIO
GGG
Reasonable groans and crunches during play.

PLAYABILITY
GGGG
Fast moving and great in two player mode.

ADDICTION
GGGG
Rolling around with men has never been so attractive.

**80%**

face2face Continued



A heavily laden A-10 A climbs into the sky from a secret airbase

➤ in an all out war.

You never see this action. However, each side's progress can be monitored via a series of reports and graphs. These graphs, percentages and status reports illustrate a variety of positions such as hangars, control towers, and so on. It is rather more tricky to find exact details of the enemy but there is a reconnaissance (recce) mission you can fly to find out what state the war is in.

The action you take part in is totally dynamic. For example, visual damage can be inflicted upon an installation. However, that damage will then be repaired over the course of time. If you knock out a hangar you effectively knock out all of the aircraft for a particular base. If you knock out a control centre you neutralise their control ability. If you attack aircraft-producing factories you will knock out their ability to produce new aircraft. The replacement rate drops while the factory is being repaired. You must try, therefore, to win a war of attrition.

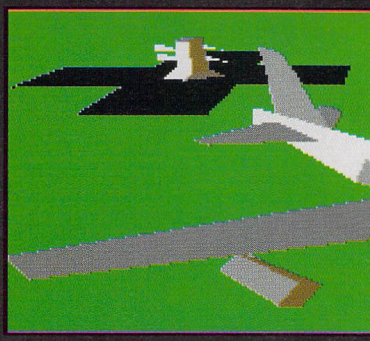
As mentioned above, the "dynamics" do not extend to other ground elements. You do not see your side rolling forth with tanks and men, for example. Birds of Prey (BOP) is more orientated around air combat. There are elements of ground attack but they generally includes air-related targets.

If you "die" you do not lose the game, you just take on a different persona to continue the same, ongoing battle. Nothing changes after your "death". You can also save the battle at that point if you wish. In fact, because of the save routine you can have a number of campaigns running simultaneously. The only item lost is the dead pilot's record.

It is possible to lose an aircraft and live, by safe ejection. However, one pilot is not allowed to lose too many aircraft. The limit is four aircraft on the easiest level, dwindling down to one on the most difficult level. So even if a pilot survives an ejection, if he has used his allotted quota of aircraft, he will be grounded. A new pilot will have to be created.

Intriguingly, you can also defect! If you destroy a friendly target it is assumed that you have defected. If you defect twice neither side will have you so your pilot is, again, grounded.

During the game you will be allowed to choose a variety of different bases. The choice has an effect on the gameplay. Chris: "It affects the



A massive B52 overflies a friendly SAM radar installation on its way to deal death and destruction to the enemy

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First level foilage frenzy

## Twin geeks?

# ZONE WARRIOR

**ELECTRONIC ARTS ▪ £25.99 ▪ 1/2 meg ▪ Joystick ▪ Out now**

If you come down to fundamentals, then the major developments of the human race, technologically and socially, can be put down to a handful of men and women who made the major breakthroughs, followed by a few more people who capitalised on their predecessors' success.

Take, for example, the loin-clothed chappie who invented the wheel. Imagine if he had died or been kidnapped the night before finally finishing his secretive chiselling at the back of his cave. The wheel may never have been invented.

It is possible that someone else may have come up with idea, but it is more than likely that his mates would have been sitting around a camp-fire to this day wondering what that brilliant idea of Arthur's was, having no idea but being utterly convinced it would come back to them if they didn't think about it and talked about something else entirely. To this day the roller-skate may never have been invented.

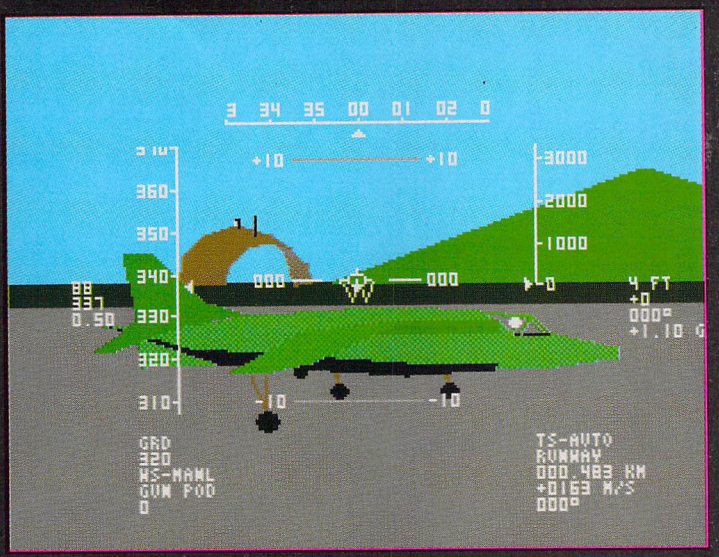
What about the guy who discovered the power of steam in ancient Greece? Now if he had mysteriously disappeared, not only would we not have been able to travel from Stockton to Darlington in 1825 but no one would have invented that nice little whistly thing that lets you know when the kettle boils.

Now, you may well be wondering what the Sam Hill this has to do with a computer game. Well the horrendous scenarios that I described, the disappearance of eminent figures in our history, is the idea behind Zone Warrior.

The Earth of the thirtieth century has been under threat for years from a race of aliens known affectionately as the Geeks. So far, us humans have managed to hold the Geeks off, but now that may be extremely difficult. The Geeks have captured one of two prototype time machines that the Earth's scientists have been developing, and they

A damsel in distress

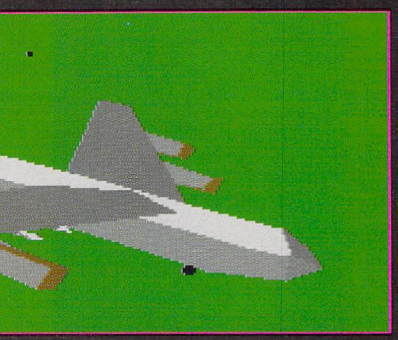
A Harrier preparing for take off on a carrier




The complex and realistic HUD overlayed on the outside view of ytour aircraft

enemy's ability to attack you because each one has a different set of defences and different strengths in terms of where it is and how far it is from the enemy lines."

Consequently, the mission selection is slightly altered, "in a sense that if you select an aircraft carrier there are certain missions you obviously can't do – certain aircraft can't fly off an aircraft carrier! That's the only restriction."



Another restriction is that there is only one generic cockpit: "To design a cockpit as detailed as we have done would be very difficult to do again and again for different aircraft and have all the artwork stored. We'd end up with or three of four more disks just to contain it."

So there are 40 aircraft within BOP. I guess that many readers will be wondering just how flexible the aircraft choice is. Let Chris explain:

"You can choose any aircraft for any mission but it does pose restrictions sometimes. Where it is very silly to try and take a 747 off an aircraft carrier, for example, but, yes, you could take a Jumbo Jet on an air interception. You'd probably get shot down, though, unless you were very careful or your wing men do all the fighting but you wouldn't get any points for that. The war would be fought and you risk your home base being destroyed and it doesn't look too good on your record."

Speaking of which, how are the wing men implemented?

"They will fight for you and when you're on a bombing mission they will protect you. You don't communicate with them but you know what they are going to do in any given situation."

Wing men are nice – pity there is no possibility of radio messages or interaction, though.

While you and your wing men are battling it out it is always interesting, as the only human intelligent life form within the simulated world, to wonder about the enemy's artificial intelligence (AI).

"For AI, the enemy has a general ➤



plan to travel to key points in the development of mankind and destroy the pioneers of that time zone, like the chap who invented the wheel, and like the chap who discovered steam.

You have been chosen to travel around time in the remaining time machine and destroy the Geeks before they manage to disinvent the wheel, and very probably disinvent your existence as an indirect side-effect. You know the sort of thing, because the wheel wasn't invented when it should have been, your dad wouldn't have knocked your mother of her bike and seduced her on the way to the hospital, and you would never have been born.

If you don't exist then the aliens have free rein to go and wreck the rest of humanity, at the same time writing a completely new history for Earth – and you can bet that if they have their way, by 2967 civilization has ceased to exist, or at least civility. Hell, we lost that in the twentieth century anyway.

Enough of the politics, what does this game do? Well, it is a platform game, in which you control a character that has been described around the office as Turrican on steroids, but I don't believe it's anywhere near that good. The main character is great and "well 'ard", but the gameplay is a bit short on action.

The main body involves leaping from platform to platform, ducking, avoiding assorted immovable objects that hurt, like spikes or venus fly-traps, and trying to shoot the Geeks that have oh-so-cunningly disguised themselves to match their surroundings. This bit is dead easy, the more difficult bit is wandering around the maze-like levels and trying to find all the hostages and the keys so that you can progress to the next level.

It is fine while you are doing it, but when you lose your third life at the end of one of the levels it becomes a real chore, not a challenge, to carry on and do the whole level again.

If you can overcome this though, or play it in short bursts, it can be OK, if you don't mind a lot of exploration and map reading. It reminds me of a pint of Tennants – it's good, but...

**Jools**

VISION
GGG
Competent but not high class.

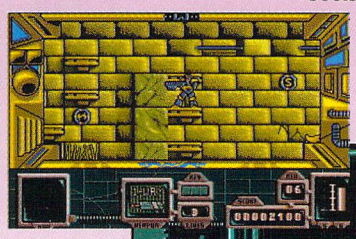
AUDIO
GGG
Great in-game speech but few effects.

PLAYABILITY
GGGG
Huge levels to explore, and later levels are taxing.

ADDICTION
GGG
Makes you want to achieve but a turn-off after initial failures.

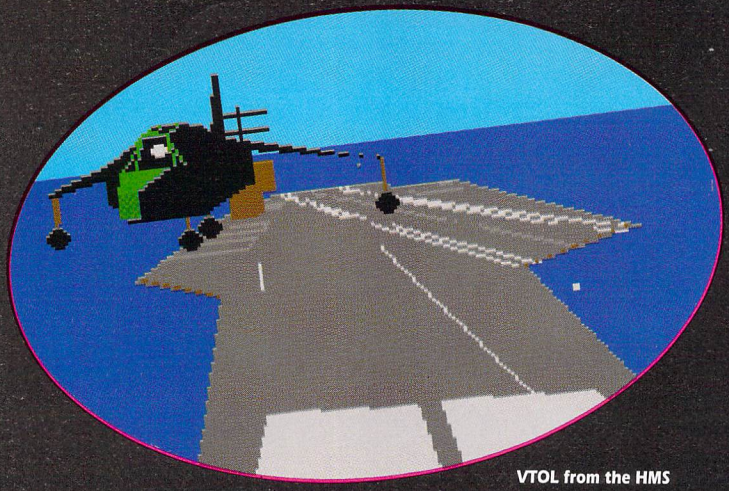
70%

Between platforms the air flies up your trouser leg



Walk like an Egyptian

The pep talk to the level



VTOL from the HMS Invincible

purpose algorithm which allows them to taxi and take off, lock on to targets, choose the most appropriate target and so on. They will always choose an air target over a ground target even if they've been given a ground target as their main mission because that represents the greatest threat."

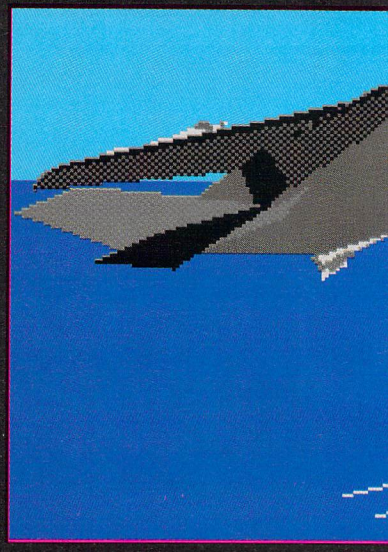
"They can only launch missiles that that particular aircraft type carries. In dogfight situations they vary their manoeuvring based on what you're doing, to a certain extent."

Although Birds of Prey is far down the line regarding development there are still many tactical elements that have to be decided. For example, Chris was still to decide whether you should be allowed to attack city areas to affect morale/factory manpower and so on. So extra features may appear – or disappear! – in the final version that have not been mentioned within this article.

There are slight worries, on my part, regarding the basic ST version. As simulations increase in complexity the frame rate plays havoc with the gameplay. How has this problem been tackled?

"We have a completely selectable range of detail - so it will be a trade off between graphic detail and speed." Unfortunately, the ST version will probably lack the sampled sound and graduated horizon of the Amiga. However, the ST version looks like being slightly faster than the Amiga 500 version.

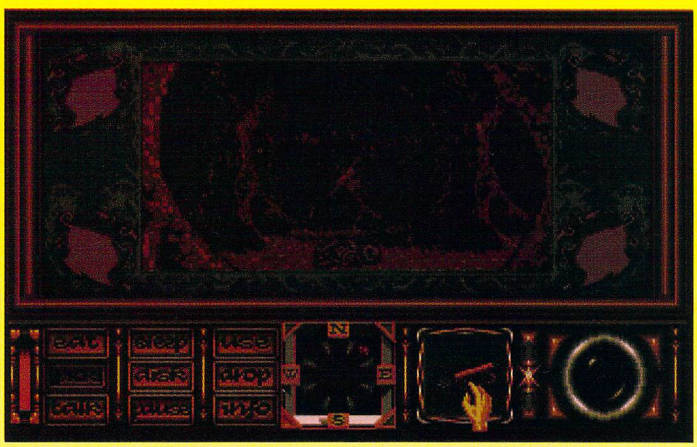
Birds of Prey appears to offer a nice blend of variety, choice, excitement and attention to detail. Check out the bottom line during the full game review in your super soaraway Gamer – coming soon!



I don't care how Stealthy it is, no-one on that ship is going to miss that plane

ER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER GAMER

The tower where you wake up after that fateful evening in the rain



After killing a pig, it mysteriously degenerates into a pile of bones

To call this guy a schmuck may well be something of an understatement. He crashes his Volvo during a rain-strewn night and comes round after a slight knock on the head (he wasn't wearing his seat-belt. I have to say that or Volvo will sue me for libel).

Realising that his car won't start he doesn't decide to stay in his car until morning when someone's bound to come past and notice the impressively constructed vehicle, complete with crash protection cage, sticking out of a ditch, and say to themself "Gee that looks like an impressively constructed vehicle, complete with crash protection cage, sticking out of a ditch. Perhaps I had better go and rescue the young chap who is still inside but naturally perfectly safe because it is a Volvo."

Oh no he decides to take a walk in the pouring rain to try and find someone to help him. What a plank!

As it happens he manages to find no-one but a distant light that leads him to the middle of nowhere, then disappears. This middle of nowhere, however, contains a derelict tower with a watertight roof. So instead of spending a night in a safe Volvo with the heater turned on, Mr Intelligent 1991 decides that he would be far better off kipping in this tower.

When he wakes up the following morning he appears to be in a medieval land. I know this sounds a bit truncated but I'm short of space and all this rubbish about "Cor, don't my clothes look different" does nobody any good.

The trick is to guide this idiot out of the land he is in, apparently called Middlemere, and sort out some way to get home. No problem. He begins in a

The reluctant traveller

# OBITUS

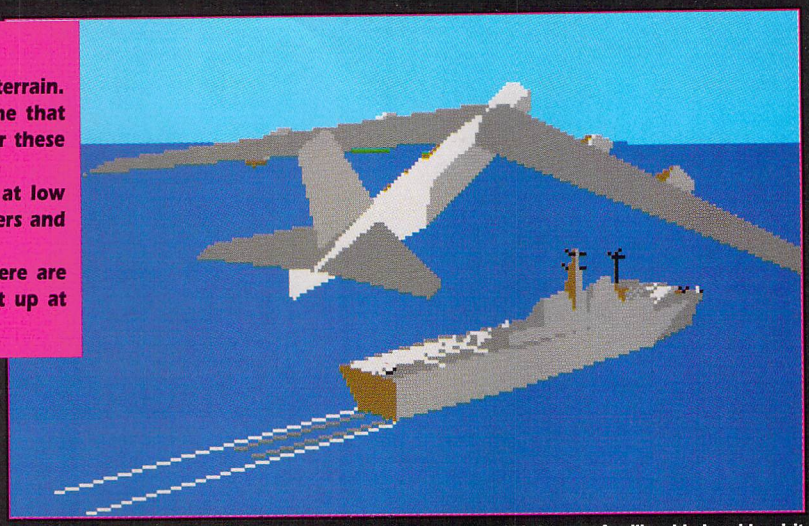
PSYGNOSIS ▪ £25.99 ▪ Mouse/keyboard ▪ Out November

## Terrain

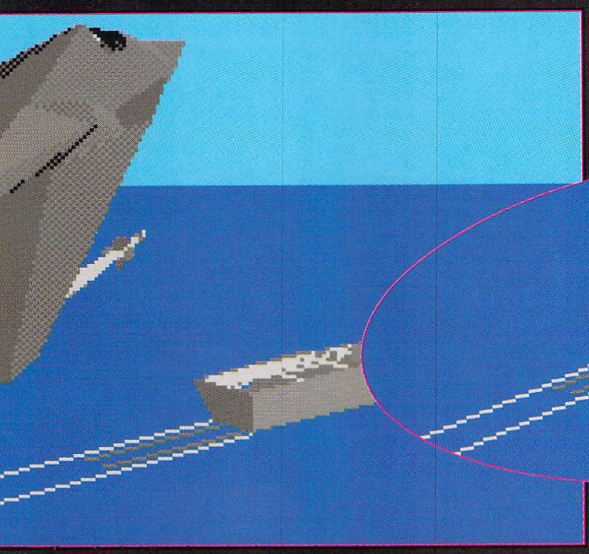
**As well as using waypoints to avoid radars, you can also use terrain. Mountains are such large and important features in this game that Argonaut has implemented very accurate collision detection for these features.**

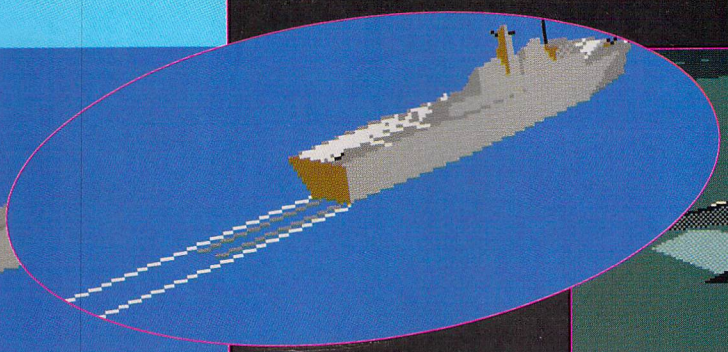
**This means that you will be able to hug/skim the terrain at low level. In fact you can also fly down canyons, land on skyscrapers and on top of hangers with the Harrier!**

**Populated areas are, largely, patches of dark. However, there are skyscrapers. One welcome aesthetic feature is that cities light up at night.**

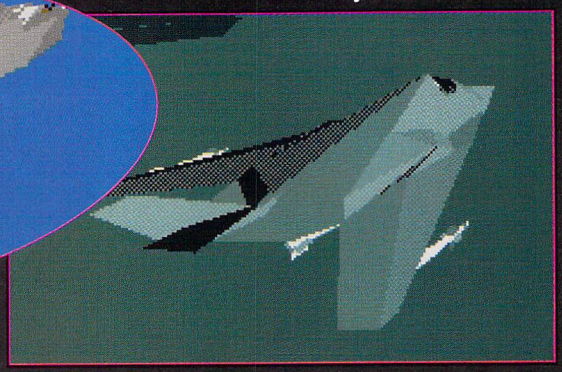


**This by now familiar ship is paid a visit by the B52 we saw earlier**





**The graphics may well be simple but there is so much else going on that complex graphics would slow it down**



**Notice how the Stealth fighter cunningly blends in with its background. They don't call it Stealth for nothing**



wood – deep in a wood. The wood is depicted in the bitmapped 3D that Dungeon Master pioneered, but Obitus does it much better.

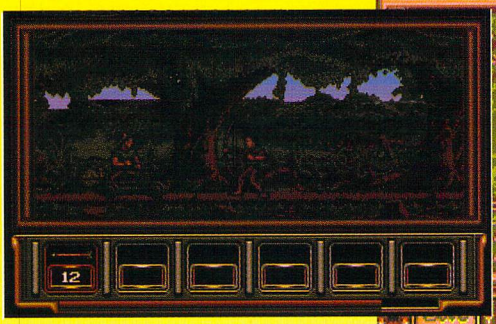
Like most RPGs you move in one of eight directions to the next location. Not all of the directions will always be available, you can stop en route to a location, but there won't be much there because the locations are also junctions.

The movement between locations is not a case of the screen going blank then all of a sudden you are there – there is full animation of all the trees alongside the path which give an exceptionally smooth impression of perspective. It really looks as though you are moving into the wood.

A similar effect is found when you come to explore the castles and abbeys that you will come across, but instead of the first person perspective of the woods and the mines, it is a side-on view, and the main sprite which you control differs in size as you move back and forth, in and out of the screen.

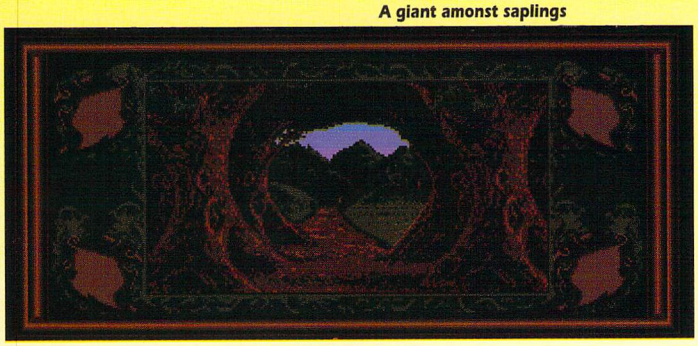
Moving around these sections also gives you the opportunity to pick up useful items like arrows and jewels, not to mention the chance to enter into conversation or kill various people. The things you pick up and how you use them will prove crucial to how the game goes. One false move may mess up the whole game, but you may not find out till much later on. The other sections of then game are horizontally scrolling shoot-'em-up style sub games where you run along dodging the arrows and trying to shoot the knights hidden in the trees with your bow.

The combination of exploration, shoot-'em-up and high quality graphics that perfectly match the original on the Amiga make Obitus an extremely enjoyable game with enough puzzles and hassles to make you want to come back to it, ooh, at least once or twice.



**Between the wood you must run the gauntlet of men with arrows who get kicks out of hiding in bushes**

**A giant amonst saplings**



**Finally you escape the labyrinthine Abbotswood**

VISION
GGGG
Great impression of perspective.

AUDIO
GGG
Reasonable effects but nothing stunning.

PLAYABILITY
GGGG
Brain teasing and reflex jerking.

ADDICTION
GGG
Once completed it loses its appeal.

**78%**

GAMER GOLD

**Pleeeease release me, let me go! The Bitmap Kid gets trapped by the killer bubble that appears if you loiter too long**

Pockets, eh? What bloomin' marvellous little fellas they are. Why, if it weren't for pockets then the fabric of our society would fall to pieces. Kangaroos would be pretty useless without pockets, and snooker players would be scuppered as well. Just imagine: a world without kangaroos or snooker.

Oh. Not so bad is it? So pockets aren't really that wonderful are they? In fact, they're not worth bothering with at all. So, enough banter, let's get on and check out the latest Bitmap offering.

It would appear that I'm not the only person to have problems of a pocket nature. The Bitmap Kid is having trouser receptacle bothers as well. You see, Bitty has been blessed with, yes you guessed it, Magic Pockets.

Just what's magic about them? Well, they're big. Very big. Magically big in fact. Just like the Tardis, the Kid's pockets are a lot bigger on the inside than they would at first appear.

As well as having pockets that defy the laws of physics, they also have an equally spooky ability to provide the Kid with whatever objects he desires. For example, if he's lounging in the sun and he feels a tad thirsty, he plunges his hand into his pocket and produces a refreshing, cool can of Fizzy Trendy Pop drink. Great, eh?

Of course, there's a downside to all this pantaloon japery. It would appear that the Kid has accidentally lost four of his favourite toys dans la poche and now he wants them back. And what better way to do this than to whip a black hole out of his kecks and leap in after his beloved playthings?

Well, he could just pop down to Toys R Us and buy some new ones. No? Please yourselves. Once inside his trousers – calm down at the back – he finds himself in a world totally unlike any he has ever known. A world populated by strange beasts and bizarre landmarks.

It's Ashton under Lyne on a Saturday night! Except it's not, it's four levels of scrolling platform action played over 30 separate sub-sections, with one toy located on each level. And so we come to The Game.

Yes, it's a Bitmap Brothers concoction, and yes it's flaming marvellous. As with Gods, the bruvs have taken the standard platform formula and added a little twist to make it a completely different game from every other platformer.

A lot of the innovations found in Gods crop up here too, albeit in a slightly bigger way, but we'll get to that later. First of all, before we get into all the complicated bits, let's take a shufty at how the game looks as a platformer.

The screen layout will be familiar to anyone who's played a platform game – and let's face it, that's practically everyone. You have the main character, complete with a springy wee jump, some platforms to jump on to, some bogeymen to try and stop him, and an exit at the end of the level.

That's where the similarities end. The Bitmap Kid can fight back with a variety of weapons from his infamous pockets. On level one, he fires whirlwinds, level two brings clouds, the third level has ice blocks and the final level has snowballs.

Like R-Type, he can fire at double strength by holding down the fire button that little bit longer. This unleashes an extra large whirlwind/cloud/ice block/snowball which will trap the nasties, Rainbow Islands-style.

These extra strength power-ups also have a second purpose, depending on which level you are on. For instance, on level one the whirlwinds can be used to fling the Kid all over the screen, allowing him to reach higher platforms. A sprinkling of tactical planning will be required to puzzle your way out of certain situations, so don't disengage your brain when you pick up the joystick.

The sub-levels within each main one are designed so that no two levels will play alike. Some require you to navigate mazes of interlinked platforms, others demand quick reflexes, and others call upon puzzle solving skills.

At the end of each main level, there is a bonus one which involves using the toy you retrieved from that level in some sort of test. These range from the relatively normal, such as a bike race, to the positively bizarre: try a boxing match with a gorilla.

All of these little touches help to keep the game fresh and exciting by changing the formula every time you play. And that's it more or less. There are more "little touches" than you could shake a very large stick at, but you'll just have to take my word for it.

As you can see from the screenshots, the graphics are excellent. There are literally hundreds of sprites, and thou-

VISION
GGGG
Uncluttered, smooth scrolling screens packed with zillions of weird and wonderful sprites.

AUDIO
GGGG
Whether or not you're a Betty Boo fan, the music is great, plus some nifty little speech FX.

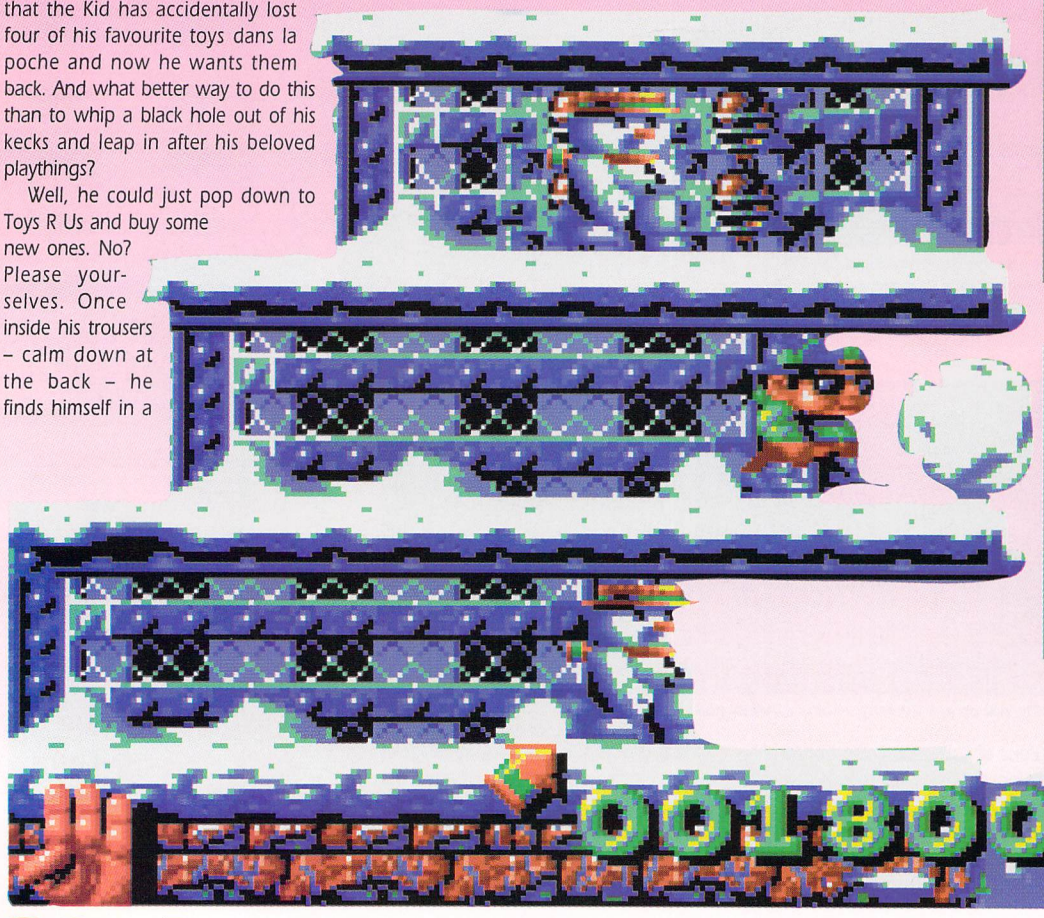
PLAYABILITY
GGGG
Plenty of new touches ensure that this is a platform game like no other.

ADDICTION
GGGG
Each level is designed to teach a new aspect of the game, so you'll be drawn in like fluff to a cough sweet.

90%

**The Kid's just trapped a snail in one of his trouser tornados. If he pops it, he'll get a pressie**

**Look before you leap. A TV will crop up every now and then to show you what to expect**



Have a rummage in the Bitmap's pockets

# MAGIC POCKETS

RENEGADES ▪ £25.99 ▪ 1/2 meg ▪ Joystick ▪ Out now

Once you've retrieved your lost boxing glove, you must use it in a fight to the death

sands of rooms – or so the Bitmaps claim, but who's counting? – all of them laden with detail.

Each of the four levels represents a different environment and the screens change to reflect this. From underground caverns to snow covered mountain peaks, via the jungle and the lakes, the graphics remain at the highest standard.

The boring techy stuff like animation and scrolling is brilliant as well in case you were interested. You probably could have guessed that though.

Soundwise too, things are as hot 'n spicy as those bits they put on pizzas to burn your mouth when you least expect it. The music is provided by that stormin' rap vixen, Betty Boo.

Perhaps it's a bit of a shame that just as the game was being completed, Ms Boo got booed off stage for miming, but that's the way the cookie crumbles. Whether or not you're a Boo fan, the music is great and suits the game perfectly.

Thankfully you only hear that cheery "Doing the Do" refrain at the end of each level, otherwise there could be a lot of unnecessary violence committed against innocent loudspeakers. In-game we are treated to some equally well suited FX, with little voices going "Yeah" when you get a power up and so forth. And it's all very, well... bouncy really.

Ok now comes the bit where we find out just what the Bitmaps have done to make the game different. Remember in Gods how some of the nasties were intelligent? Well, the same applies in Pockets, except that now we have many different grades of nasty.

The third level takes you to the lakes, where you must freeze the water to cross. But if you had a diving helmet...

He's found his bike, so now it's time for a quick race to the exit

Some are passive and won't harm you unless you actually walk into them, others are aggressive and pelt after you the minute they spot you, while some are really vicious and will attack from off screen and follow you everywhere you go. Some of the baddies are weak and can't get over the obstacles in your way, and some are even better at jumping than you and can scale even the most daunting walls. This system means that you'll never be able to waltz through Pockets just because you know when to expect the enemy. Pretty damn clever, huh?

Another new Bitmap invention is the gradeable power-up. By killing nasties you can decide what power-ups you get when you trap a nasty. The more nasties you kill, the better the power-up when you trap and burst your next foe. Cunning or what? This isn't just a gimmick either, as later levels require you to plan carefully what power-ups you'll use and when – if you're to stand a cat in hell's chance of finishing it.

That, in the space allowed, is as much of the game as I can tell you about. Suffice it to say that I didn't have room to tell you about the secret rooms full of bonuses, the fun reward bits when you're totally invincible and can just leap about killing things, the ability to kill nasties by tumbling onto them, the TV sets that give you a sneak preview of what's around the next corner, the bubble gum machines that allow you to float up to platforms, the plants that can be watered to grow into new platforms, and the assorted helmets that give you all manner of special powers. Phew!

Yep, Magic Pockets is a big, big game and one that should keep most people glued to their joysticks for weeks on end. Those Bitmaps have done it again. What next? A Bitmap beat-'em-up with an S-Xpress soundtrack? We can but dream...

**Daniel Whitehead**

Unfortunately, the ice didn't hold your weight, and the Bitmap Kid takes a frosty bath

Deep in the jungle, the chimps can't find David Attenborough so they're bothering the Kid instead

**The touch of a button can allocate all the designers you need**

**The option screen where you select your island. The left-hand head is yours, the heads on the right are your opponents**

**The hole is an open cast mine on this, the third Tech Level**

*A-conquering we must go*

# MEGA

**IMAGE WORKS ▪ £30.99**

Somewhere at the top of the Universe is a large glass orb. It used to be a six million watt light bulb but it popped about 30 years ago and no one could find a ladder big enough to change it.

Inside this glass orb floats a planet – a watery globe with no more land than 28 small islands.

This planet is in the first stages of humanoid evolution, and four God-like deity types are looking to expand into a new market-place from where they can build a monopoly.

They all happen across this planet at exactly the same time and they decide to take control of 100 men and fight for control of each of the islands one by one.

You can choose to play any one of the four Gods and this allows the game to bring in four difficulty levels, the lowest meaning you collect a few rocks and chuck them about until the other side dies, the highest meaning you hang around a bit, invent something slightly more advanced and chuck that about until the other side dies.

This victory will see you becoming the main man of the island, but you then have to go on and try to win the battles for the other two because only by winning all three can you become the head honcho of the Epoch.

The Epoch is what divides the evolution of the planet into nine separate levels. So just how do you go about winning an island?

Well, each Epoch gives you an allocation of 100 men, which you must divide in a wide and sagacious manner between the islands. Once the number of men has been allocated, you must place your first fort in one of the square shaped sectors of the island.

The order in which you and your opponent(s) place your fort is determined randomly. Fortunately, while you fight for every island, not every God does. The size of the island will determine how many of the three opponents fight you for it.

Once you have placed your fort it's time to get down to the serious business of evolution. In the first Epoch you start at the very basic caveman Tech Level circa 9000B., From there you have some serious decisions to make.

From the allocation of men to this particular island – usually just over 30 – you have little for them to do in 9000BC except design weapons. The more advanced the weapon you set them to design the longer it will take before the design is ready but the more likely you are to advance quickly to the next Tech Level.

Once the weapon is designed you can find out how many your resources will allow you to build. In 9000BC you can "build" as many rocks to chuck around as you like, but as you progress men will have to be allocated to the mining of various materials so that your designs can be built in sufficient quantities to make a strong army.

When you allocate men to the army you can make a choice of how many bowmen, how many unarmed men, how many men with spears etc, but only if you have the resources.

The army is really your most important asset. Without a strong army you cannot attack with any confidence or chance of success, and the game will soon be over.

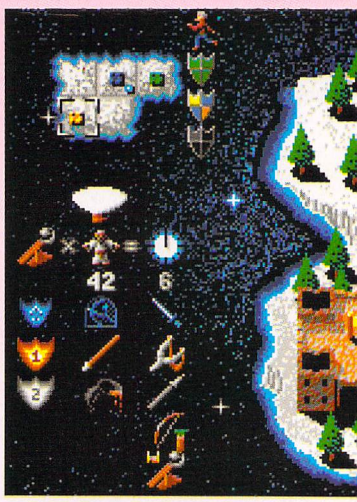
However, it may well be wise not to send your army out too early, because men in the field can't breed and swell the population inside your fort. You could send out 25 men very early in the game but then you could wait around and send out 125.

Once you have mobilised the army, with whatever ratio of weapons and men, you then decide which sector of the island to move them into. They can only move into a sector adjacent to themselves or one adjacent to a friendly sector.

If an enemy army is there they will attack it and the computer controlled battle continues until one of the armies retreats or gets wiped out. If the army moves into an empty sector and is left to hang around long enough it will build a new fort, which can then raise its own army, design its own weapons and live independently of the other fort or forts.

On an island where you fight two or more Gods you can offer to ally with one of them to destroy the others. This means your army has less to worry about and can move about more freely as any sectors that belong to an ally are classed as friendly sectors.

Once the other two have had their bottoms kicked you can concentrate on the remaining opponent, your previous ally, and focus your energies on the one



***As your Tech Level grows the number of weap available to you to develop will increase***

Higher Tech Levels mean more buildings, more substances to mine, and more demands on manpower

Your army running around

Top left is the plan of the island showing the tactical positions of you and your foes

a-conquering we must go...

# LO-MANIA

1/2 meg ▪ Mouse ▪ Out now

goal of wiping the floor with this guy gullible enough to ally with you. The fighting remains the most important part of the game at all times, but as you progress through the Epochs and your Tech Level grows in leaps and bounds, other pressures come into the gameplay. You have to look at the allocation of men to designing weapons, to mining resources, to building installations, to guarding the forts and the control of the army. Fortunately the very simple to use point and click system makes all this jumping around and number juggling extremely easy and very quick. This swiftness is one of the strengths of the game. For example, should an enemy army invade while the majority of your men are designing a new weapon, you need to be able to allocate them to the army very quickly, and you can.

The ease of use, the growing complexity as you get further into the game, and the way you slowly realise how addicted you are make this a very strong game.

The other strengths lie in the graphics and the sound – especially the sound. When each action is completed, or a warning message is necessary, then crystal clear speech spews forth from the monitor in a very stylized manner that evokes the atmosphere of all those ancient Hammer Horror films.

For example, when a design is complete the Chief Designer says, with a charming speech defect: "The design's weady", or "Ergonomically tewiffic". If you attack a sector and win, the Sergeant Major shouts: "We've captured the sector" in a triumphant manner. The Home Guard, worried when under attack, yells: "Tower Critical".

On top of this remarkable studio-quality speech you get this very mellow New Age style soundtrack that The Orb would be proud of, and it helps build on the atmosphere that adds a lot to the game.

Graphically it works very well. Each Tech Level has its architecture and costumes for the chaps who run around fighting each other in this humorous parody of the diddy men (I think).

On screen at any one time is just one sector floating on an astral background of stars and cosmic gases, complete with pretty trees and looking very glossy overall.

The only thing lacking graphically is the fact that buildings just appear and disappear – there is no degeneration or construction.

It is addictive, highly engrossing, looks great and sounds fantastic. Not only that, it is so simple to play a crab could do it. Let's face it, some God-games are an acquired taste but your dog won't even talk to you if you don't buy this.

GAMER GOLD

VISION
GGGG
Loads of colour and detail but needs more animations.

AUDIO
GGGGG
Incredible speech, and sophisticated soundtrack.

PLAYABILITY
GGGGG
Easy to use, great fun and ridiculously absorbing.

ADDICTION
GGGGG
Epochs of conquering and developing.

94%

# talking shop

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| 20 | Gods | Renegade/Mindscape | £25.55 |
| 21 | Treasure Island Dizzy | Code Masters | £4.99 |
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| 33 | F15 Strike Eagle 2 | Microprose | £24.95 |
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| 39 | Waterloo | Mirror Image | £9.99 |
| 40 | Hero Quest | Gremlin Graphics | £25.99 |

# GALLUP CHART

## Compiled exclusively for GAMER

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Again this month budget titles dominate the ST Top 40, with eight of the top ten being cheapies. The budget re-release of New Zealand Story goes straight in at number one, with TV Sports Football and Supercars both climbing to number two and number three respectively.

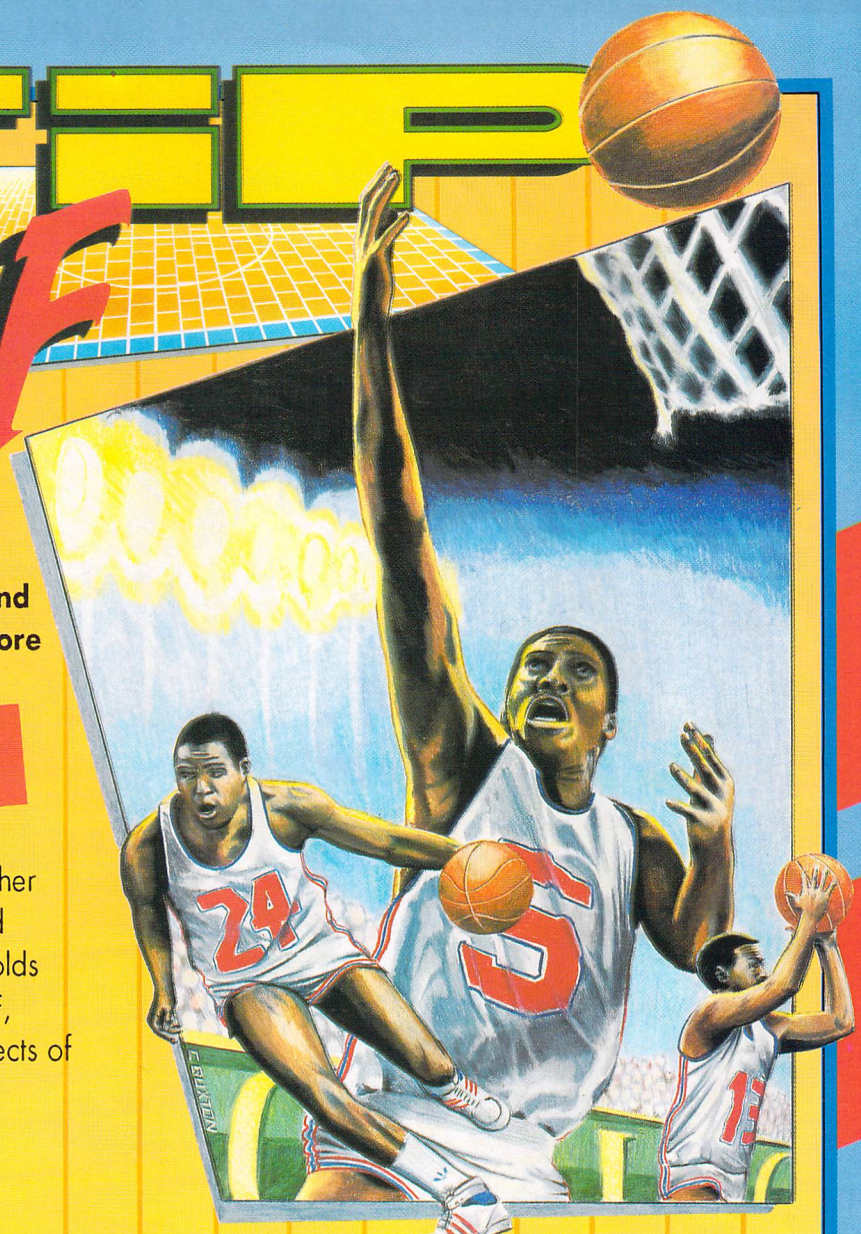
The only two full price titles in the top ten are the excellent Flight of The Intruder and the much-loved Man. Utd. Europe. From there it's four places until Lemmings which has slipped one to 14, then Flames of Freedom two places behind that which has slipped 10 places.

Gods slips another five places to number 20, but don't be too surprised if Magic Pockets, from the same stable, crashes into the top five of the next chart. Assuming it gets released in time.

Strangely, Railroad Tycoon has just fallen off its perch at number 17 and disappeared out of the bottom of the chart. The game that was one place above it at number 16, Hero Quest, has fallen off as well but managed to hang on to last place. The release of the add-on quest packs should see something of a renaissance for that game, but expect the Quest packs to be higher in the charts than their parent game.

On a sadder note, Kick-Off Extra Time has finally been sent off, apparently languishing somewhere around number 51.

# TIP OFF



**The sheer pace of the game, end to end action and tactical game play is the core of TIP OFF, a basketball simulation -**

## A SIMULATION WHICH IS GREAT FUN TO PLAY

Players' skills, attributes and fitness together with the astute substitution of players and change of tactics banks by the coach, holds the key to success in basket ball. TIP OFF, therefore includes some managerial aspects of the game. The main features are:-

* Multi directional scrolling screen
* Five skill levels. Skill level of both teams can be set independently.
* 1 to 4 players option. Option to play against the computer or another player or team up with another player against the computer or another player or two players.
* Facility to practice skills and tactics.
* Facility to create a team at all skill levels and design tactics.
* Instinctive Joystick controls to dribble, pass, shoot or do a dummy. There are two running speeds, two types of dribbling and passing and five types of shots at the basket (Jump shot, Hook shot, Skyhook, Running Jump shot and Slam Dunk).
* Each player on the court is an individual with a unique mixture of attributes (Age, Height, Flair, Pace, Stamina and Composure) and skills (Passing, Dribbling, Stealing, Shooting and Jumping).
* Two types of Leagues. Action Replay at 3 speeds.
* Extra moves are available using two independent button joysticks using the EXORLENCE System.

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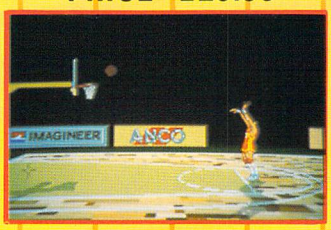


Amiga Screenshot's Shown

© 1991 Anco Games

**EASY TO PLAY - HARD TO MASTER**

Published by
ANCO Software Ltd

7 Millside Industrial Estate, Lawson Road, Dartford, Kent, DA1 5BH. Tel: 0322 292513/8 Fax: 0322 293422

It went straight down the middle...

# MICROPROSE

**MICROPROSE ▪ £25.99 ▪ Mouse ▪ Out now**

Golf games. Doncha just love 'em? Actually that's the type of question that ST owners have found difficult to answer. Most of the decent golf games on the market have been sailing onto the PC and Amiga. A good golf game for the ST is long overdue, therefore. Microprose's Golf tries to fulfil that requirement.

Suitable for the basic 512K machine, Microprose Golf offers, after loading, a menu of options that can be selected before you dive into the serious business of competition play.

Options for past play include loading a previously saved round, or a replay of that hole in one on the ninth... There is also a demo of the play which is handy for beginners because it screens, in one broad sweep, the majority of the available features. You can also view your player's statistics (see later).

However, for most beginners you will be well advised to play the driving ranger and the putting practice area. Both of these areas have been well designed. The driving range offers alternate strips of fairway and trees – daring you to hit your shot "straight down the middle", as one crooner described it.

In addition to the directional guidance, you are offered help with distance as the major distance landmarks are scribed onto the fairway (100, 200 and so on).

The putting practice area is just as good. The view for the shot can be changed, the speed of the green can be altered and a grid system can be overlaid to help you observe precisely where the ball is moving after your shot.

After your practice sessions have been completed you can select one of many different types of competition. Microprose should be congratulated for the wide choice.

Medal is a competition for points using a score card. Points are awarded for each hole – the lowest score wins. Skins is a competition for money. A bet is placed before each hole is played and, as you can guess, the winner is the chap who plays the hole with less shots, while a draw means that the total is forwarded onto the next hole.

Head To Head is you against the computer, playing for points. Tournament allows you to play with up to four human players for points. Singles allows you to play for the number of holes won overall.

Bestball 3 and Bestball 4 is a competition for points. However, here the match is you or you and a friend against two opponents with one ball each. Threesome and Foursome is either two players against yourself or two against two with either two balls for two teams each taking alternate shots, or two balls each with the best score on each team counting for the final card.

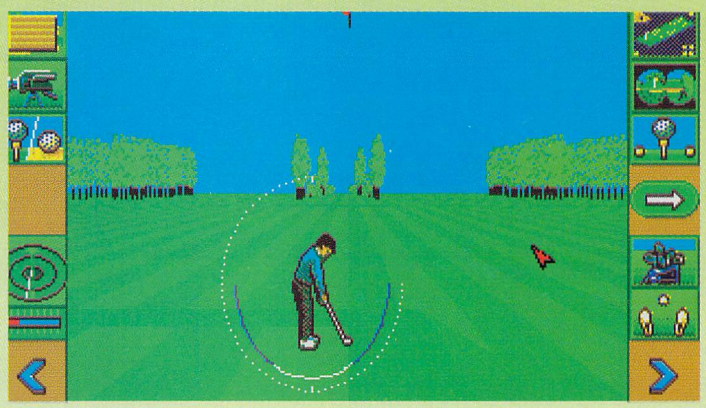
Threeball and Fourball is a competition of three or four individual sides who play for points. In just about all of the above, you can toggle whether a computer or human player takes part.

Once you have selected the competition you must allocate the skill level. Novice players get things easy while a player with a handicap must suffer all of the vagaries of play, such as wind speed and varying direction.

It is nice to see a proper handicap system in a golf game – it means that you are "given" a number of shots that will be subtracted off you final score. The better you do, the lower your handicap becomes. Your player statistics can, therefore, be saved to a separate data disk. It is pleasing to watch how your

**Club selction is not important until you are very familiar with the game**

**The swing-ometer is how you exercise an incompetent lack of control over your shots**



**The viewdown the fairway as you tee up**

VISION
GGGG
Lack of detail made up for by speed.

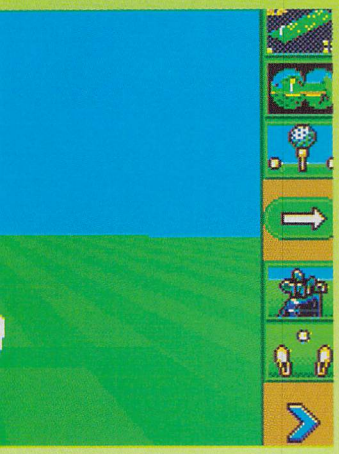
AUDIO
GGG
A few swooshes here and there but it doesn't really matter.

PLAYABILITY
GGGGG
More playable than a Tonka.

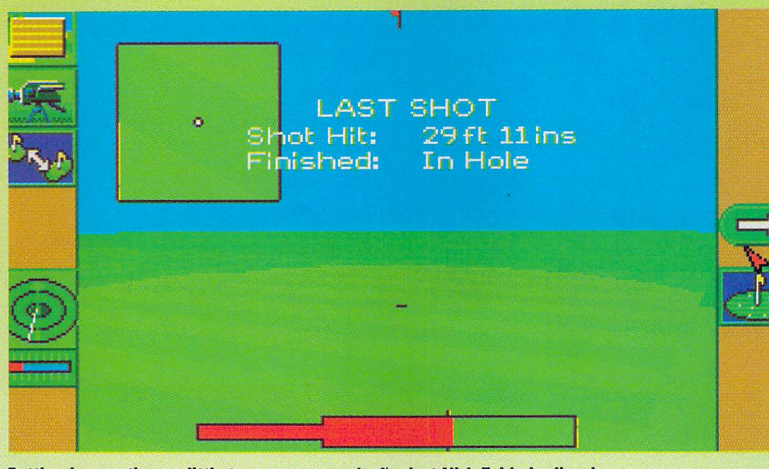
ADDICTION
GGGGG
Better than Twin Peaks.

91%

# GOLF



The terrain overlay shows the lie of green. This one is fairly flat but for more complex greens it is essential




Putting is sometimes a little too easy, or maybe I'm just Nick Faldo in disguise

player improves – or otherwise – over time and competition. A close eye can be kept on your player's statistics from the main menu View Stats option.

Here. you can see your player's performance via a large bar graph plus statistics such as average score, average putts holed, number of birdies scored and so on.

There is a wide selection of courses to choose from. Deep breath: Ballybrook, Farthing Valley, St Augustine, Fairdale Park, Fenham Valley, Buckland Heath and Mountsummer Point.

There is a welcome wide selection of variables, too, that you can change before the shot is made, such as varying the foot positions, the height of the tee and the club selection. Other variables include a wide variety of camera viewpoints and an instant replay.

Playing a fairway shot has been well implemented. The game penalises you for a strong shot. Therefore, it is more difficult to hit a straight shot the harder you hit. Basically, you click to initiate the shot, click again to stop the "strength" meter, then click again to try to land in the "straight" zone – which will shrink the harder the shot. Failure to find the straight zone will mean a hooked shot.

For putting, just click to initiate the putt, wait to increase the shot's power and click again to stop the strength meter.

The downside – of putting especially – is that you have to refer to the manual or look at the club selection screen to find out how far your club will hit. But this is realism we are talking here and a proper golfer knows his clubs or checks with his caddy, the same thing when you come down to it.

While the graphics and sound are never awe-inspiring, they cannot be criticised either and are good enough for play.

Microprose Golf has many advantages. One excellent feature is the design of the topography which is nicely contoured and contains all of the essential obstructions including water, sand and trees. Even better, this allows the ball to react to the contours.

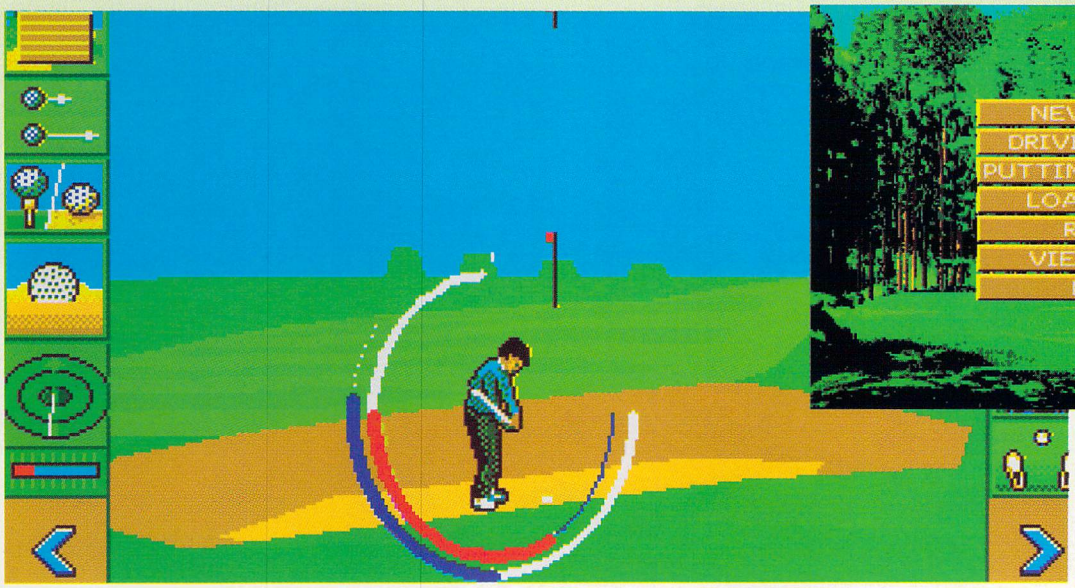
For example, the ball can "kick" if it finds the right spot on the fairway. Other nice features are the ability to change the distance measurements from metres to yards and the colour of the player's jersey.

There are niggles, though. You do not see tournament computer player updates, such as in PGA Tour Golf, which has a commentator updating the play. You always have to exit to the scoreboard to find out where you are relative to the competition.

The are many excellent features to Microprose Golf, which has been expertly designed right down to the instant terrain overlay for the greens which is very handy.

However, it is still the best golf game you'll find on the ST. It even gives other golf games, on other formats, a hard run for their money.

**Paul Rigby**



A nasty lie in the bunker may prove to make the chip onto the green more difficult than it is (waffle , commentate, commentate)

The plethora of options before the game starts may prove too much for some

**What a motley crew. Which of these evil foreign chappies gets a Maverick up his bum first?**

Takes your breath away?

# F-15 STRIKE EAGLE II

Microprose ▪ £34.99 ▪ 1/2 meg ▪ Joystick/keyboard ▪ Out now

Bob Dylan sang "the times they are a-changin'" during the heady days of Flower Power. Little did the smelly old hippy realise that he was damn near right. The times certainly have "a-changed".

Nowadays the Yanks and the Commies are practically bosom buddies, and frequently get together at Tupperware parties to throw away each other's missiles. Even the Middle East seems to be blowing itself up a little less often than it used to. Yes, we are living in hopeful times, with the prospect of world peace looking ever more likely. So shouldn't somebody tell Microprose?

Yes, dear and gentle reader, once again we have another Microprose flight simulator, and once again it's righteous bigotry from wall to wall. Russians, Viet-Cong, Arabs and yet more Russians – with optional extra Russians – is the order of the day as far as F-15 II is concerned. Mind you, it doesn't half make a cracking flight sim.

F-15 Strike Eagle II hit the posh PCs way back in 1989, but after plenty of twiddling and revamping, it's ready to hit the ST. Rather than being a follow on from the original F-15, the sequel is more of a remix.

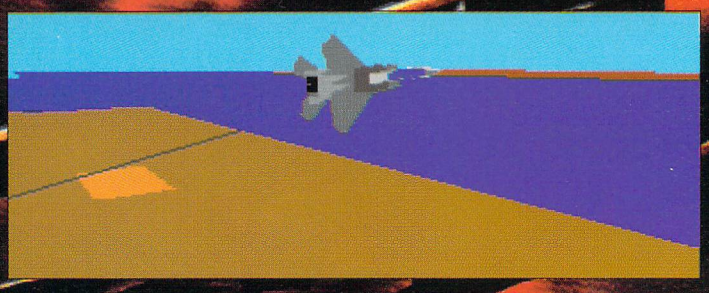
They've taken their classic sim and rewritten it using more up to date programming methods, and adding some of the options that made things like F-19 so popular, to keep their loyal punters happy.

Thankfully, what could have been an extremely dodgy idea has been turned into a pretty sound game. I have to admit that I've never seen the original F-15, but if it was half as good as this then it must have been a downright groovy little fella.

Yes Ladies and Gentlemen, F-15 Strike Eagle II is a bit of a stonker. It must be said though, that if you're a grizzled, hardened flight sim "realism or bust" type of person then you might be a bit alarmed by this game. It's not really overflowing in the realism department, to be perfectly frank.

You tend to take off and be surrounded by the action, all guns blazing with SAMs flashing past and so many bogeys on the radar that you'll be buying shares in Kleenex. Surprisingly though, even with all Hell breaking loose it's not all that difficult. Your sturdy craft can take a hell of a beating before it plummets to terra firma, and the computer gives you plenty of warning when a missile is headed your way.

Before you can experience the dubious pleasures of such a dogfight though, you must first plough through the obligatory intro screens. Or so I



**The sleek and sexy F-15 zooms in low over the Libyan mountains**

**Better camera work than Top Gun? You decide**

**Yeee Ha! Jester's dead! Scratch one MIG**

**Missiles locked on. Prepare to eat vapour, Bandit!**

**Here's a clever manoeuvre to try at home. To avoid incoming missiles, fly very fast at a mountain and, er, crash. Oh**

thought. All told, it takes about two or three minutes from loading up to taking off.

Microprose have avoided the practice of including long-winded briefing screens which, let's be honest, are getting a bit dull. Instead you get a screen which says "Take off here, blow up this, blow up that, then come back, and be quick about it you young scoundrel". Or words to that effect. Press Fire and you're off into the wild blue yonder.

There are a few other selection screens, where you do the necessary difficulty level selection, and the tricky bit where you must choose which area of the world you would like to have your brains scattered over, but the emphasis is firmly on getting your butt into the pilot's seat.

As I said, F-15 Strike Eagle II may startle some sim fans with it's action packed approach, but that's not to say that it's not a legitimate simulator. For those who want to, there is the option to do everything yourself, from taking off to finding your targets to landing again, but if that's what you want to do then I can't help feeling that you'd be happier with Flight Of The Intruder. F-15 II is much better suited to the more trigger happy amongst you.

As a quick reference point, F-15 II reminded me of a real time 3D shoot-'em-up with some simulator-ish doobries bolted on. For one, F-15 II is immediately playable – plus you have complete freedom of movement, the enemy come thick and fast and there's no lack of ground installations to blast.

And of course, F-15 II is seen through the cockpit and has all the fittings of a basic sim, such as flares, chaff and autopilot. Make no mistake. F-15 II is not an arcade game – instead, it's an arcade-orientated simulator.

It's not all wonderful and lovely though. The biggest flaw here is that the gameplay is very shallow. No matter what skill level you play on, or what war theatre you select, the missions are always the same: destroy primary target, destroy secondary target, return to base. It really doesn't matter what targets you're going after as the only weapon you can use against them is the Maverick missile.

You have no option to arm the plane the way you want it, so it's just a case of locking on and firing. This doesn't damage the immediate appeal, but I can't help feeling that it may become boring in the long term.

Another gripe, and this is one that applied to F-19 as well, is that the "feel" of the plane is very unnatural. There's no sense of drag or gravity, and take offs can be performed in about 50 feet of runway. You can literally put the engines on full, pull back on the joystick and go straight up, vertically. Once airborne, the sensation is more akin to floating than thundering through the air in a 35 tonne aircraft. This doesn't really affect the gameplay to any great degree, but it certainly won't please the realism buffs.

Graphically the game is slightly blocky, but the scrolling is smooth enough. It's not up to the speed of Thunderhawk but that may be to its advantage as it means that it's a bit easier to get your bearings and regain control in times of trouble.

The variety of other planes is well up to the usual Microprose standard as well, with all the best planes from both the Allied and Pact armies putting in an appearance. Also making an appearance are those stupid oblong clouds that are guaranteed to make the novice player waste hours trying to shoot them. All they do is clutter up the screen, so could we please lose them? Thank you.

There is also an option to change the detail level to speed things up, but as far as I can tell it doesn't make that much difference to either the graphics or the speed – it's really a relic from the PC version.

Soundwise, things are dire. The engine noise is an annoying whine that irritates after about five seconds, and the other sound effects sound like they've been sampled from some crusty old Space Invaders machine in the back room of a pub.

There is a smattering of speech, but it's muffled and is restricted to saying "Bullseye" when you hit one of your two targets, and "Nice landing" when you manage to hit ground without dying. It's a shame, but then most flight sims on the ST suffer from the same problem. If you're a fan of in-depth flight sims then "Flight Of the Intruder" is your best bet, but if you just want a fast, frantic blast with the freedom of a simulator then F-15 II is a wise choice.

**Daniel Whitehead**

**VISION**
GGGG
Slightly blocky graphics, but they move fast.

**AUDIO**
GGG
An OK tune, but horrendous noises. Some OK speech.

**PLAYABILITY**
GGGG
An easily accessible sim with plenty of things to blast.

**ADDICTION**
GGG
Brilliant fun to begin with but it's too shallow for a long term game.

**81%**

Buckle up your swash and free the kingdom

# The Adventures of

GAME CRAFTERS ▪ £29.99 ▪ Joystick/Keyboard ▪ Out now

Some people can be so spiteful can't they? Take, for example, the parents of the hero of this game. Picture the scene: Mrs Williams has just given birth to a lovely, bouncing baby boy, complete with ginger hair and Douglas Fairbanks goatee beard.

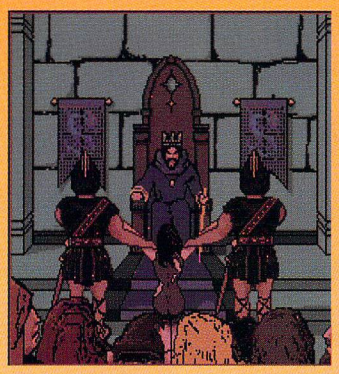
He's a swashbuckling adventurer through and through. And what do they decide to call him? Bob? Jim? Montgomery? No, they decide to call him Maddog. What a pair of gits.

Imagine the childhood that poor old Maddog must have had. Teased all the time by the kids at school, all the teachers sniggering when they took the register and as he got older he found that no one would cash his cheques. It's no wonder that he threw aside all thoughts of becoming an adventurer and decided to stay at home and invent things instead.

So the years passed and Maddog went about his inventing. He never thought to invent something that would benefit mankind though, like a computer that could figure out why people watch things with Jimmy Tarbuck in. Oh no. He invented such useful items as an alarm clock that tips water over you in the morning, and a beer server that catapults glasses off the bar. Which is probably why nobody ever heard of him.

Now, while all this was going on, a terrible evil was spreading throughout the land. As we all know, terrible evils do tend to spread through lands quite a lot, and more often than not, when they do there's always only one man who can stop it.

Guess who it is this time? Yup, it's Maddog Williams. So it's up to you to guide Maddog through his quest to rid the land of evil, save the damsel, make friends and influence people etc etc. Your mighty quest begins at home, with very little notion of what awaits you. Just like Monday morning in the Gamer office. You basically go about your business, inventing useless things and getting thrown out of pubs, until you pick up some clues and take it from there. Quite a nice change from the strict linear plots of other games of this ilk, I think you'll find. Oh yes indeed.



**The nice king is now the nasty king. This poor wench is being forced to go on Blind Date**

The more astute of you will have already seen the screenshots and decided that Maddog Williams looks more than a bit like the Sierra games. Well, you'd be right: it is a hell of a lot like them. The graphics, in particular, are a dead ringer for the Kings Quest series, with their chunky sprites and colourful fairytale backgrounds.

The humour is there too, although some of the jokes in Maddog fall flat on their face. It would appear that most of the humour in Maddog is unintentional, or at least all the bits that I laughed at were. Would you believe that just down the road from Maddog's house is a satanic temple where they sacrifice virgins with alarming regularity?

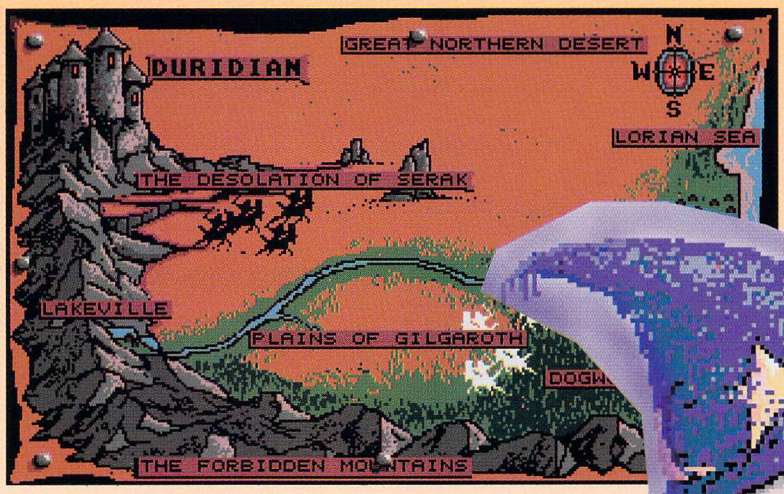
Don't think that I don't like the game, because I do, it's just that Maddog's sickeningly twee attitude is a real pain in the backside at times.

For instance, when Maddog is being flung about violently by some tentacle thingies in an underground cave, I tried to CUT TENTACLES, to which Maddog replied "I'd rather not" or when Maddog is downstairs in his antique shop, and refuses to take any of the weapons from the shop on his quest. A choice of maces, crossbows, battleaxes, and he takes his little sword. A few 10p's short of a phone box or what?

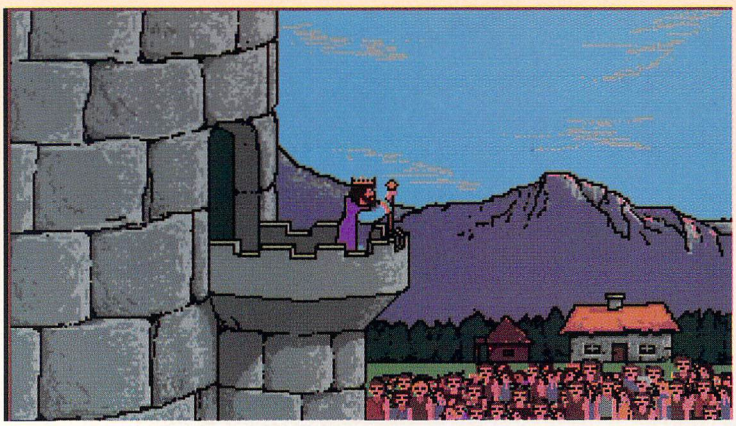
This sort of moralistic restriction can make the more mischievous game player feel a bit held back, since you can't search other peoples houses or nick things. Still, I suppose it's good for the soul or something. Mind you, for the really evil players, you can always get Maddog stoned on the magic mushrooms in the forest (evil cackle).

The game comes on a mammoth five

**Mad Dog wakes up, stretches and heads off downstairs to watch Wacaday. Sad, sad ma**




**The Readers Digest handy map of the land of Marinor. Note the total lack of roadside Little Chefs**



**It's the king, unaware that another of those annoying evil forces is about to take over his soul**

# Maddog Williams

disks, with the first disk containing the introduction and the remaining four disks holding the game.

Each game disk is divided into two chapters – where a chapter is basically a section of the map – and although you can walk from one "chapter" to the next, you can only progress properly if you complete a special task in each.

In chapter one you must rescue a fair maiden from the satanic temple, in chapter two you must find your way across some quicksand, and so on. Each time you complete a task, or appear to be following the correct route, a burst of music lets you know that you're heading down the right track.

The feeling of an epic adventure is very cleverly captured. I've been playing the game for days now, and haven't even reached the third disk yet!

The way that you can just wander at first, and chat away to the locals about life in general is great, although a Lucasfilm-style conversation wouldn't go amiss. As it is, you have no control over speech, and end up just listening as some of the more senile inhabitants ramble on for hours about fishing trips.

The characters could have done with a little more personality as well. In a game as involving as this, it really adds atmosphere if you can build up some sort of relationship with others in the game.

Who could ever forget the infuriating used ship salesman in Monkey Island, or the embarrassing store keeper in Leisure Suit Larry? Still, it's a minor point, as the characters really only exist to give you clues and ideas on how to progress, and this they do very well.

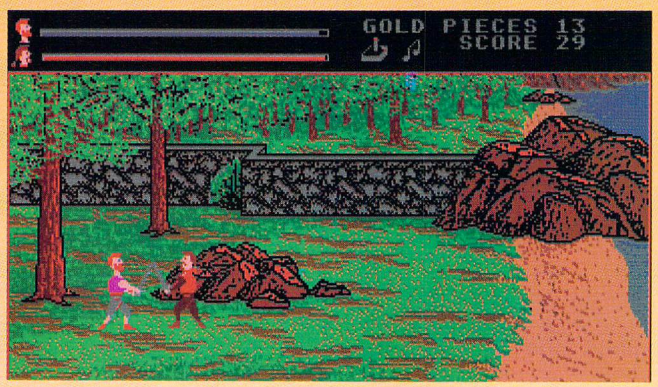
The sound is, unfortunately, pretty basic. The tunes are horrifyingly beepy, sounding like the sort of aural nightmare that would occur if Adamski and Nigel Kennedy ever made a record together. The sound effects too, are bland and uninspired. We know the ST can do better than this, so why haven't they done it? Grumble grumble. On the sunny side, the graphics are nice and clear, if not very well drawn, and sum up the pleasant feeling of the game. The animation is a tad on the sticky side though, with Maddog's walk looking like that cheery childhood hero, Bod. But this doesn't really matter because the gameplay is geared more to chin stroking pondering, rather than frantic running around.

All in all then, a wonderfully creamy little Pontefract–cake of a game. The puzzles are tricky, but always blindingly obvious in the end, and the graphics set off the atmosphere perfectly.

It's the sort of story that always seems to crop up in cheesy French cartoons on Childrens' ITV, and as such may appeal more to the wee ones than to die-hard adventurers, but a bit of a corker nonetheless. Gorgeous.

**Daniel Whitehead**

**Oh, Vic. I've fallen. Mad Dog just won't let it lie**




**Aha! Mad Dog dazzles a pirate with his amazing three combat moves**

me adventurer,
e world of
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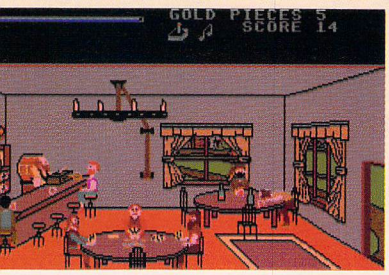
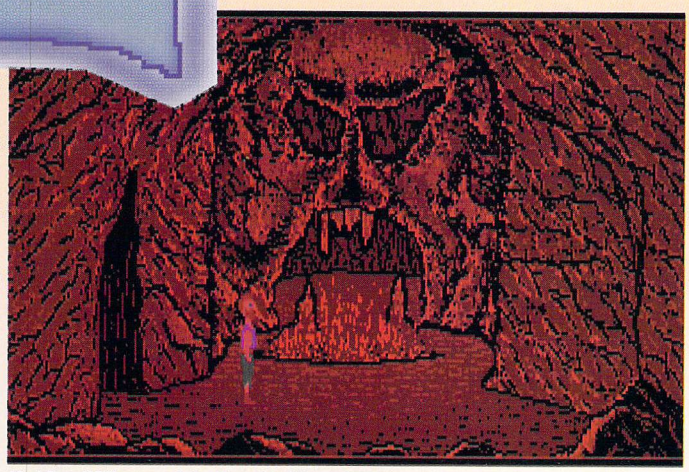



**Straight after breakfast, Mad Dog heads for the pub. A man after my own heart**



**Mad Dog Williams and the Temple of Doom? This cheery place is just down the road from his house**

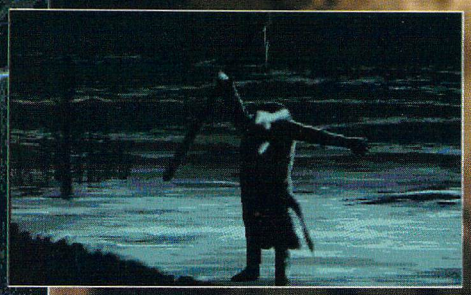
VISION
GGG
Very Sierra-esque characters with some sticky animation, but it doesn't damage the game.

AUDIO
GG
So sad. Horrendous tunes and dodgy FX.

PLAYABILITY
GGGG
Despite Maddog's annoying do-gooder approach, it's a truly enchanting game to play.

ADDICTION
GGGG
Let's be honest. Could you live with yourself if you gave up halfway through?

88%



The animated and stylised intro takes up a full disk

But where's

# SHADOW OF

## PSYGNOSIS • £25.99

A year ago Psygnosis released the Amiga version of the much-awaited sequel to the many-awarded Shadow of the Beast. This apparently broke new barriers in graphics and gameplay, so when the sequel hit town it had a lot to live up to

It managed extremely well but the things it was doing with parallax scrolling and 32 coloured layers and all this sort of complicated stuff meant that the conversion to the ST, which isn't quite as hot at handling such complex operations, has taken a year. Has it been worth the wait?

The story-line follows on almost directly from the end of the first game, where our hero managed to regain his humanoid form. The grim part is that the Beast Mage, having recovered from the drubbing you gave him at the end of the last game, has now nicked your sister and whisked her off to Kara-Moon, one of those suitably distant and implausibly dangerous places that only a hero like you can confront.

The ironic thing is that the Beast–like powers that made you so strong but you fought so hard to shed, may be just what you need to make your way through the treacherous place that is Kara-Moon. Will you be strong enough?

The gameplay revolves around you in full control of the warrior. The only weapon he has is his mace but throughout the game the warrior can find and collect items that will improve his strength and the power of his mace.

Warrior in "I'm sorry but it was huge!" launderette embarrassment shocker

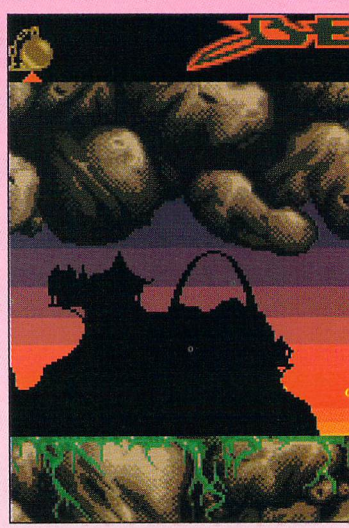
The mace is reasonably flexible in the way it can be used though – depending upon how long you press the Fire button it extends further, giving you the chance to thwack the opponent heartily about the head before he has an opportunity to do the same to you.

If you are observant enough, you will also be able to pick up bits of gold that you can use to buy improved weapons and all sorts of life giving potions. Some of these items may well come from the characters in that game, who you can speak to, as opposed to the creatures which you just hit.

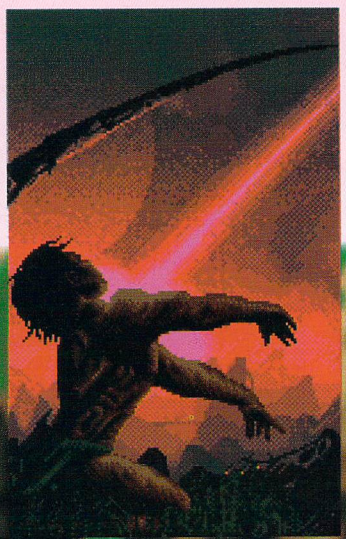
Talking to a character is dead easy – just hit A for Ask then type in what you want to ask the character about. They may answer, they may not. But there is always the option of killing them afterwards if they start getting cheeky.

The character may also be able to help you, voluntarily or otherwise, with some of the puzzles and traps that must be solved and avoided if you are to stand a chance of completing the game. Unlike the first game, which was criticised in some quarters for the lack of gameplay, the enemy creatures have been given a degree of intelligence this time around in that some of them will react to your actions as opposed to blindly doing what they do.

This gives the gameplay more depth than previously, and it makes it more interesting. We all know how boring a



Poised for action, our hero contemplates whether his sister is worth it

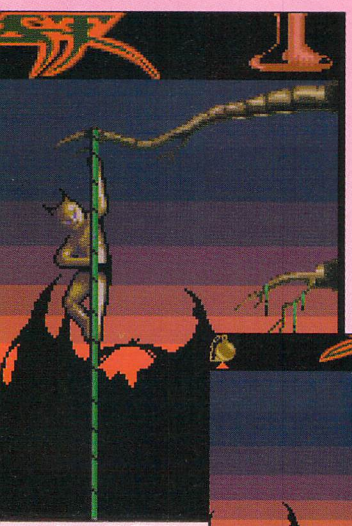


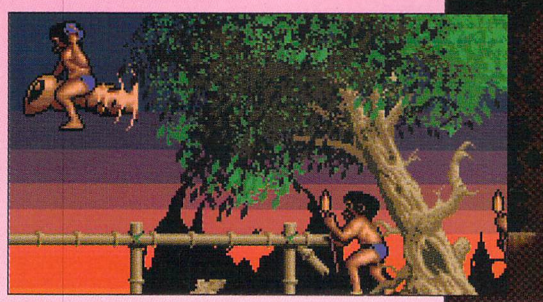
Unsuccessful in his quest, the ex-beast becomes ex-everything

f Richard?

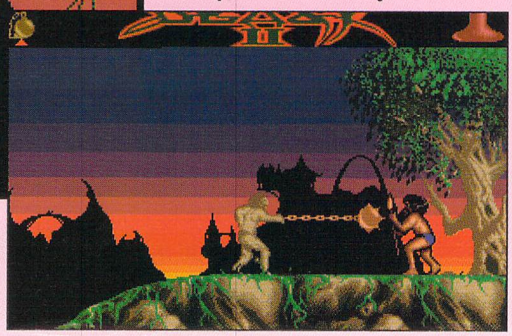
# THE BEAST II

oystick • Out November





Wasps from hell take a flyer



One wallop with the mace sends this particular peasant flying

Does this count as cave art?

game gets if the aliens or whatever do the same thing every time. This means that the action levels are more varied and less predictable than before, and accordingly more fun.

This depth of gameplay is extended further by some of the puzzles that require more than brute force to beat. For example the gateway to the final part of a level may be blocked and the only way to get past it is to talk to one of the chaps elsewhere in the level and get him to offer you a solution, or you may be left to work it out for yourself.

Naturally the graphics look great, heaps of colour all over the place and some nice parallax scrolling behind the main play area. The problem is that the scrolling of the coloured backgrounds and foregrounds, not to mention the big sprites means that the gameplay may at first look a little slow – but slower than it actually is.

It also means some extended disk accessing between games and levels, even parts of levels, but it is certainly worth it. It may not be the fastest game you've ever played but it will provide you with plenty of challenge and a reasonable amount of puzzling before you get close to completing even part of it.

It isn't the most brilliant game you'll ever play but if you love good graphics mixed with decent gameplay, and speed isn't a prime requisite, then this will suit you well.

**Jools**

VISION
GGGGG
Amazing use of colour and big sprites.

AUDIO
GGGG
Atmospheric tune, and juicy effects.

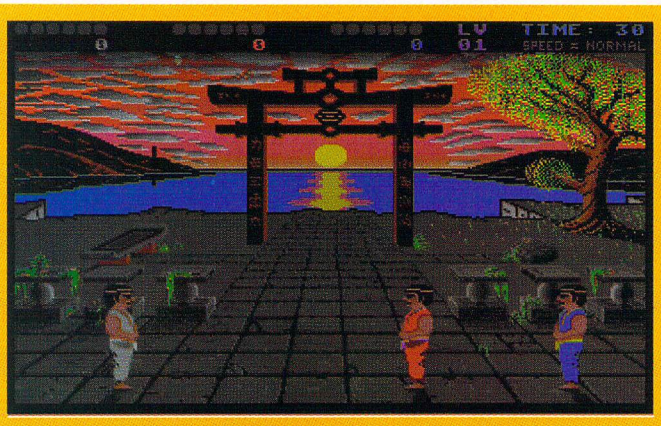
PLAYABILITY
GGG
A little slow from some tastes, but plenty of meat there for others.

ADDICTION
GGG
Big game that drives you on the complete it.

**80%**

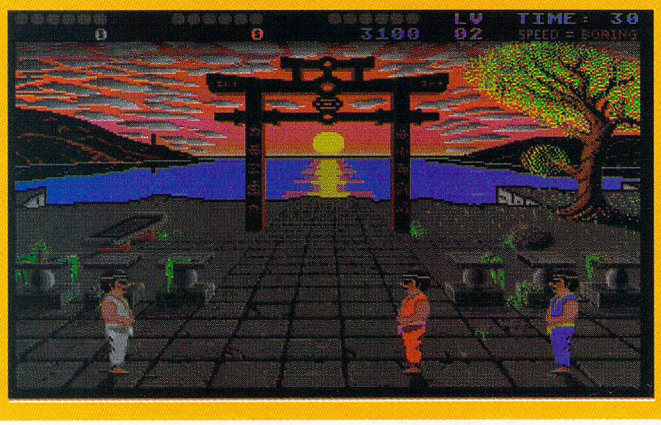
# cheat mode

**Gamer brings you a collection of white hot hacks and cheats for your favourite ST games**



## IK+ – Hit Squad

When you have been knocked down, press the spacebar to pause and then press Fire. You will now be invincible. You will have to repeat the cheat for every successive level.



## ELIMINATOR – Hewson

Once the game has loaded, press Help and enter the following passwords to hop, skip and jump to later levels.

Level 2: AMOEBA
Level 3: BLOOP
Level 4: CHEEKI
Level 5: DOINOK
Level 6: ENIGMA
Level 7: FLIPME
Level 8: GEEGEE
Level 9: HANDEL
Level 10: ICICLE
Level 11: JAMMIN
Level 12: KIKONG
Level 13: LAPDOG
Level 14: MIKADO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IF YOU'VE ENJOYED IT HALF AS MUCH AS WE HAVE – WE'VE ENJOYED IT TWICE AS MUCH AS YOU
climax
THE DREAM TEAM
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## GOLDEN AXE – Virgin

To gain three extra lives, play in One Player Mode but with two joysticks. When you lose your third life, hit Fire on the other joystick to use the second player's three lives.

## AWESOME – Psygnosis

Play normally until you get to inside the ship. Move the cursor to the shield icon and then simultaneously press "+" on the numeric keypad and the Fire button. If you now press F5, the screen should flash and give you invincibility. If you press F6, you will get infinite ammo'. Also, if you press any of the keys on the top row of the keyboard except for Esc and Del, each will give you a different weapon.

## VOYAGER – Ocean

**Get to the options screen and type WHEN THE SWEET SHOWERS OF APRIL FALL to receive infinite lives.**

## ELITE – Firebird

Type SARA as your entry for copy protection, then at the second attempt enter the correct word. You will now be able to adjust the levels of weaponry and cargo by using the Plus and Minus buttons.

## CHIPS CHALLENGE – US Gold

If you press F during the game, the screen will flip indicating that the game is ready to accept these cheats. Enter SAGITTARIANS MAKE BETTER LOVERS to receive copious supplies of keys, shields, ice boots and magnets. Enter 09/12/57 to get unlimited time. Enter I THINK THEREFORE I AM to avoid having to collect all the chips to leave the level.

## BLOOD MONEY – Psygnosis

Pause the game and press Help for infinite lives.

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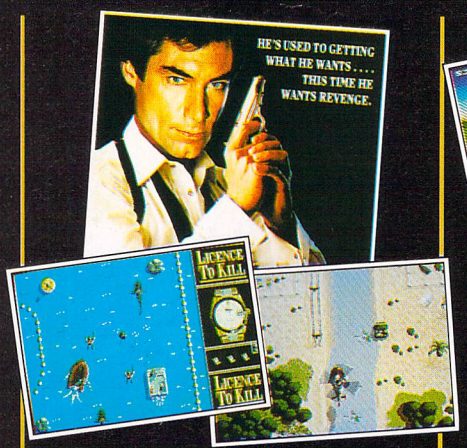
Programmed by: The Kremlin 1990 Eon Productions Ltd/MAC B, Inc. The Spy Who Loved Me ©1977 Danjaq S.A. All rights reserved. © 1977 United Artists Company. All rights reserved. Gun Logo Symbol © Danjaq S.A. and United Artists Company. All rights reserved. 'Lotus' & 'Esprit' are registered trademarks of Group Lotus plc. Artwork and Packaging © 1990 Domark Ltd.

## LICENCE TO KILL




• Take control of this multi-level, multi-role game of the latest and most exciting James Bond movie. Now's your chance to pilot helicopters, drive articulated tankers, perform death defying parachute stunts and water ski barefoot.

Programmed by: Quixel. Film distribution by MGM/UA Distribution Co. Gun logo symbol © 1962 Danjaq S.A. and United Artists Company. All rights reserved. Packaging © 1989 Domark Ltd .

## LIVE AND LET DIE

• M's briefing was simple, "Find Mr Big, and don't come back until you do." Q has given you his latest toy – the fastest and most dangerous speedboat ever made.
"Good luck 007 – you'll need it."

Source code and game format © 1988 Elite Systems International Ltd. Gun symbol logo © 1962 Danjaq S.A. and United Artists Company © Eon Productions Ltd. Gildrose Publications Ltd. 1988

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# Rolling Ronny

AMIGA SCREEN
SHOTS SHOWN

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GAMES

# Before and After

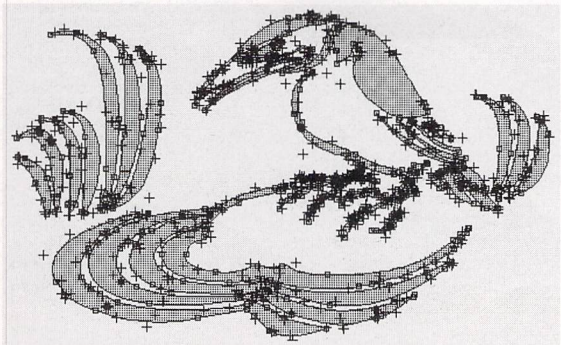
## Graphics programs for the ST take another step forward with Avant Vector. John Mallinson investigates

It has always puzzled me that someone who would never dream of picking up a crayon or laying brush to paper will spend happy hours doodling on a computer. But to what end? How many graphics programs are actually useful, rather than being for soft-core recreational computing – also known as playing games?

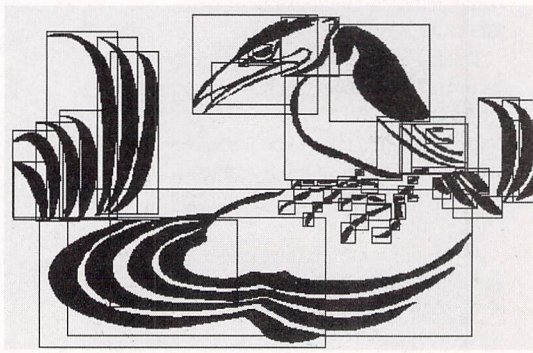
Leaving aside CAD and other specialised design software, the most productive use for graphics programs is alongside desktop publishing software, to create or modify images for inclusion in documents.

This year two rival German software houses (Trade iT, and 3K-ComputerBild) are responsible for the release of four new and exciting graphics programs: Retouche, ReproStudio, Didot lineArt and Avant Vector.

All of them are powerful enough to appeal to those who are seriously or professionally involved with DTP or graphic design, and priced appropriately. The first two can, very loosely, be described as painting programs, Didot – reviewed in July's *ST World* – and Avant Vector are line drawing, or vector graphics, packages.



**The image took about four minutes to be automatically traced. Here the tracing is shown superimposed on the original image**



**The final result of the tracing. The boxes show the position of each separate part of the drawing (the paths)**

### Utility

Vector 1.2 is better described as a powerful and clever graphics utility than a fully featured art program. It can, and will, be used for creating line drawings from scratch, but what sets it apart is its ability to trace the outlines of bit image pictures.

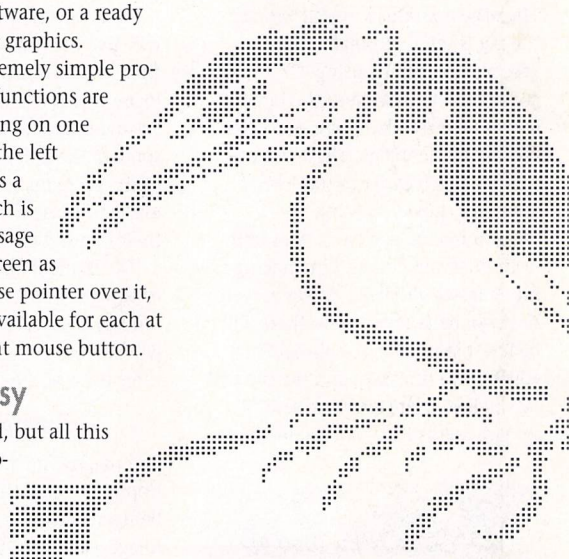
Why should you want to do this? A line drawing has many advantages over the pixel-by-pixel-defined bit image as produced by programs such as Degas and Touch-Up. Line drawings will always be displayed or printed at the maximum possible resolution of the screen or printer, they can be manipulated without loss of definition, and individual elements can be edited very simply. A vector drawing is what you want when producing diagrams and logos rather than half-tone images.

Imagine you have a simple bit image that you wish to blow up to four times normal size: the result will be a mess of jagged lines which you will have to edit laboriously, dot by dot. The answer is to convert the image into a vector graphic which can be enlarged or manipulated without any loss of definition – this is where tracing comes in.

In reality you don't convert the image, the program traces around it and creates a new object. A likely sequence is: create – or "borrow" – an image on paper, scan it, trace it, edit it, print it, or export it to a DTP program.

This is a technique which produces logos or other scalable graphics at the drop of a hat. To follow this course you will need a scanner with appropriate scanning software, or a ready supply of bit image graphics.

Vector is an extremely simple program to use. Most functions are controlled by clicking on one of the 36 icons on the left of the screen. That's a lot of icons, but each is identified by a message at the top of the screen as you move the mouse pointer over it, and a help text is available for each at the click of the right mouse button.



### Easy

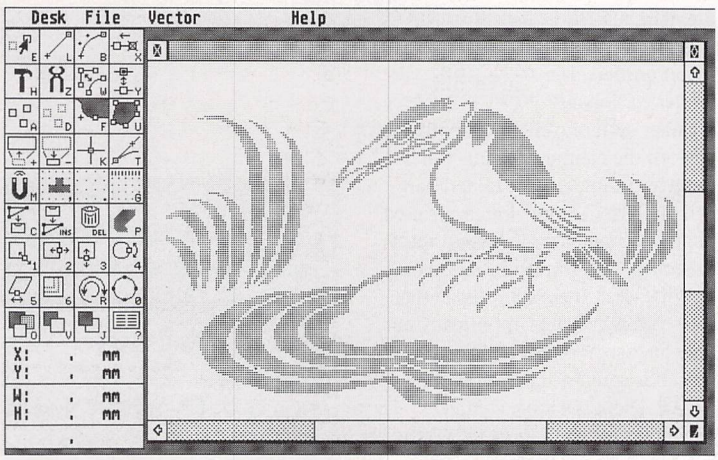
The manual is good, but all this help within the program means that you will scarcely need it. All icons have their own keyboard short cut, some of which are a little odd as they stem from German mnemonics.

The program runs in mono on either the ST or TT and needs one Megabyte of memory, and there are two versions. The standard program lets you import, edit and export vector graphic files in .GEM or .CVG (Calamus Vector Graphic) formats and, of course, import bit-image files for tracing. Bit images cannot be edited and you cannot scan images directly into Vector.

The plotter version will, in addition, import and export files in PostScript, HPGL (Hewlett-Packard Graphics Language) and GPGL (Graphtec) formats. The current versions do not let you import outline fonts, though this is billed as a forthcoming attraction.

Drawing Vector, like DMC's Outline Art and Didot lineArt, really only has two drawing tools: the straight line and the Bezier curve. The Bezier is a flexible curve whose shape is set by the position of its ends and the two internal control points which are linked to the ends.

When you move the ends or the internal points the contour of the curve changes. Linked end-to-end, lines and curves can be used to create any sort of shape – the jargon name for which is a path. Line thickness can be adjusted, paths can be filled with raster patterns, and they can be ➤




**The work screen. Lots of self-explanatory icons. An image has been loaded into the window and is ready for tracing**

made to overlap or overlay each other to give different effects.

The editing tools let you chop segments out of paths, convert lines to curves and vice versa, cut paths into bits, join them, rotate them, skew them and resize them. The position and dimensions of paths can be easily adjusted either with the mouse or by entering values into numerical fields.

Up to seven editing windows can be opened and items can be cut or copied and pasted between them via a clipboard. Rather oddly there is no freehand drawing tool – freehand drawing in this sort of program lets you draw a line of any shape onscreen which is then automatically converted to a series of straight line and curve segments.

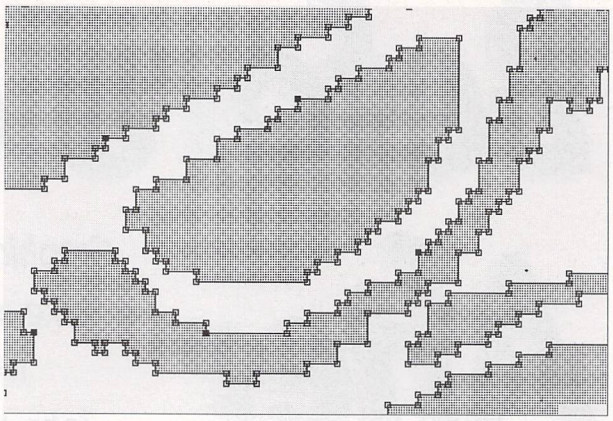
Tracing is where Vector comes into its own. There are several ways in which you can do it. If you want to trace a complete image you just draw a rubber-band box round it – the program then seeks outlines and traces around them.

If you only want to trace part of the image, you just draw the box around that part, or you can click with the mouse pointer over one edge and only that will be traced.

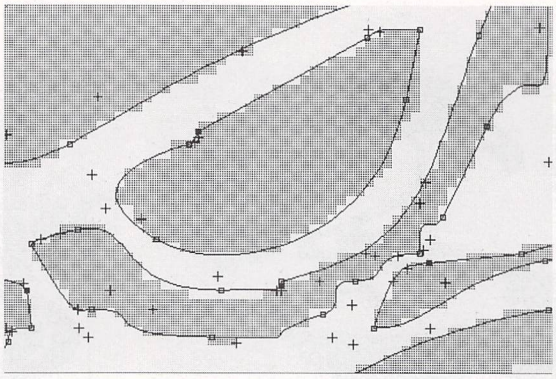
## Flexible

The other extremely useful way of tracing is semi-automatic. In this case, you set points using the line or curve drawing tools and the lines or curves between them will stick to the outline of the image. These options make it much easier to trace what you want, how you want.

Auto-tracing can be in lines only or in lines and curves. Line tracing is much faster but using curves as well has two main advantages: there will be fewer segments, so subsequent editing will be easier, and the file will be smaller. There are three settings for closeness of fit – coarse, medium, and fine – which principally affect the number of line or curve segments used.



***An extreme close-up view of part of the image. The tracing – lines only – has been adjusted to a perfect fit. The small steps represent one pixel in the original image***



***The same area showing a tracing with a looser fit and with curves as well as lines. The crosses are the tangent points of the curves. The parameters dialogue lets you set the closeness of fit, ratio of lines to curves, etc***

In most cases one of these settings will give the desired result: if not, there is a formidable parameters dialogue which lets you fine-tune the tracing process. This dialogue reveals some of the mathematical bare bones of the program and will appeal particularly to those who enjoy getting their hands dirty.

The manual makes a brave attempt to explain it in a non-technical fashion but I suspect that most people will be happy to use the default settings most of the time.

## Impressive

The tracing functions are very impressive, and the flexibility of being able to auto-trace part of an image, semi-automatically trace another part and so on, is very useful. Vector will trace anything but don't expect to make beautiful smooth tracings from poor quality scanned images: the simpler and cleaner the image, the better the results.

Output Vector drawings can be saved to disk in Gem/3 Metafile format, .CVG format, or, if you have the plotter version, as encapsulated PostScript files.

There are some problems here. Bezier curves are not supported in the versions of the Gem Metafile format recognised by Timeworks DTP and Fleet Street Publisher – a curve imported into these programs will be broken down into straight lines.

The other problem is that there is an upper limit of 128 or 256 to the number of segments in one path. It is quite easy for Vector to produce files containing over-long paths when tracing complex objects, and if you try to import them into other programs you will probably find that the file won't load.

The CVG format as used by Calamus is more forgiving and does recognise curves. Even here it is possible to create files which contain over-complex paths that Calamus will reject, and the program may crash when trying to load them. These restrictions have to be borne in mind, and some experimentation as to what your DTP program can or cannot load may be needed.

The standard version of Vector has simple but adequate printing facilities with drivers for the Atari and HP lasers, NEC and Epson printers. The plotter version also includes output to HP or Graphtec devices: the main use for this will be to drive cutting plotters rather than pen plotters. Cutting plotters are used to produce templates, cut vinyl sheets to produce stick-on labels and so on.

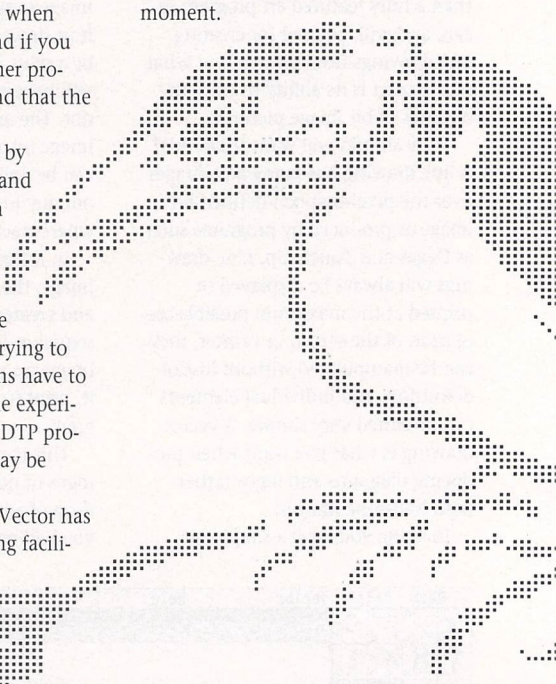
What else? There are several other auto-tracers available in Germany but only one seems set for release over here. It is contained within Didot lineArt. Didot is a more complete drawing program than Avant Vector but its tracing functions are much less sophisticated. The basic version of Didot v.2 (£305 inc. VAT) includes a tracing module but this only uses lines, can only cope with a fairly small image (maximum 640 x 400 pixels), and allows no control over tracing parameters.

## Curve tracing

A further £94 buys you the Bezier module which adds curve tracing, removes the size restriction and gives three settings for closeness of fit. This addition makes Didot an adequate but pretty expensive tracing program, and you still cannot control the process with anything like the precision of Avant Vector.

If you do a lot of DTP or graphic design work you will find Avant Vector both valuable and time-saving; it's also fun to use, but that's another story...

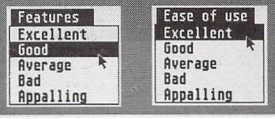
Vector is a straightforward program which does a complicated job – for image tracing it has no rival at the moment.



## Bottom line

***FEATURES: Compitable with all STs and TT. Drivers for most printers included. Some fiddling may be required to use images in some DTP programs***

***EASE OF USE: Plenty of easy to follow icons, each with keyboard short cuts. A good manual clears up anything that remains confusing***




Product: ***Avant Vector version 1.2***
Supplier: ***System Solutions, Windsor Business Centre, Vansittart Road, Vansittart Estate, Windsor, Berks SL4 1SE***
Telephone: ***0753 832212***
Price:: ***£233.83 – standard version***
***£703.83 – plotter version***
Configuration: ***All STs and TT***

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| 1040STE 2Mb | POA |
| 1040STE 4Mb | POA |
| Mega STE | POA |
| TT | POA |

## MONITORS

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|---|---|
| Philips 8833 II | £229.00 |
| Atari SM124 | POA |
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| NEC 3D | £499.00 |
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| KXP-1124i | £269.00 |

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# advice service

ATARI ST USER

## Is bigger better?

I have recently purchased a 0.5Mb upgrade for my 520STE. Does this mean that my computer is exactly the same as a 1040STE? Also, now that the STE is one of the best selling 16–bit computers in Europe, isn't it about time that software companies started designing software that uses the STE's advanced features? Finally, is the Amiga (boooo!) any better than the Atari STE (hooray!)? – if so, what makes it better?

*J. Hendrix, Fife, Scotland*

***Yes, Yes, No!***

## SIMMple question 1

I have a 520STE and I decided to upgrade to 1Mb, so I bought half a megabyte SIMMs. After fitting them myself they didn't seem to work. Then I had an idea. I swapped them over with the original SIMMs to see if they would work as a half megabyte on their own. They did work. The original SIMMs have two chips and the new ones have eight.

I sent my computer and SIMMs to my local computer shop. After two weeks and a bill for £11.75 they said: "Diagnostics for ST do not run on STE. No diagnostics available yet from Atari." Shouldn't the SIMMs be tested to see if they work on STEs before going on the market?

*Stephen J Philip, Strathclyde, Scotland*

***This one's a bit of a puzzle. Firstly I am amazed at the audacity of your computer shop! If there are no diagnostics, then what exactly have they done for their £11.75? Didn't they know that there were no diagnostics before accepting the machine for repair?***

***Secondly, the SIMMs only working in one position sounds more like it could be a problem with your ST rather than the SIMMs, and although there is some possibility that the original SIMMs are incompatible with the new ones, it is extremely unlikely. Could your local computer shop not try the SIMMs you bought in another STE? At least that would show whether the ST or the SIMMs are faulty.***

## SIMMple question 2

I own an STE and want to upgrade its memory. The problem is not in fitting the SIMMS, but in finding out what the hell a SIP is. How do I know if my STE needs one or not?

*Grant Fullen, Harlow, Essex*

***A SIMM (Single In–line Memory Module) is identical to a SIP (Does anyone know what SIP stands for?) in all except its method of attachment. A SIMM has an edge connector which fits into a thin socket – similar in many ways to the cartridge port on the ST. A SIP on the other hand plugs in using pins.***

***To confuse the matter, you can plug a SIP into a SIMM converter and then plug it into a SIMM socket! To find out which you require, simply look inside your STE – your warranty will be voided, but you'll have to get in to fit your upgrade anyway. If you see edge–connector slots, then it's a SIMM you want.***

## Hard questions

I won an Atari 520STFM and I would like to know if the hard disk I have would work with an Atari adaptor. The hard disk is an ST157 Quantum SCSI.

*Arun Kumar, Gateshead Tyne & Wear*

***You should find that the ICD SCSI host adaptor will serve your purposes. Depending on the exact nature of your drive (is it cased or bare, do you have a power supply and so on) you may need more than just the host adaptor. I suggest contacting one of the companies who advertise hard drive kits to discuss your exact requirements.***

## Register your vote

I have built an input/output port for my ST which currently uses the joystick port for the input side. I would, however, prefer to use the printer port for both input and output, and need to know how to change the data direction register to allow this.

I would therefore be obliged if you could tell me the memory location of this register on a Mega 2ST, and how to change it from GFA Basic 3 for different combinations of inputs and outputs.

*Darren P Goodwin, Rotherham*

***The location of the register is the simple part. Bit 7 of register 7 of the programmable sound generator is responsible for the direction of the parallel port. If set on, the port is output, if off, it is input.***

***To set this bit, the value of 7 – for the register number – should be written to $FF8800 as a byte. Now 128 should be written to $FF8802 as a byte. To reset the bit, write zero instead of 128. Data should then be able to be read from register 15, by writing 15 to $FF8800, then reading a byte from $FF802.***

***Obviously this is all very theoretical, and I do not have the space to go in to great detail or provide a program listing. Using GFA – or any other – Basic may be a problem, as much of the above must be performed in supervisor mode. As usual, if any readers have a suitable solution, I will pass it on.***

## Bought a Turkey

I am writing to you for some expert advice. Recently I saw an Atari SF354 external disk drive in a sale at a price I could not refuse. The problem is that I bought the disk drive while out in southern Turkey. I realised at the time that there might be a problem with the power input but the sales assistant assured me that all I would need would be a step down transformer – easily obtainable in the UK.

On return to the UK I visited out local electrical parts shop and was given the appropriate step down transformer. There was a warning on the transformer that it was not to be used with computer equipment as it was not adequately isolated. The helpful shop staff agreed that if the transformer was working through the power supply unit supplied with the disk drive it should be alright. Not being the most able of electrical buffs – a plug is my limit! – I would like to know if I am going to do my Atari STE any damage by taking the plunge and connecting the external disk to it.

*R.M. Duke, Plymouth, Devon*

***As the 240V to 120V transformer you have bought is being connected via the disk drive transformer, there should be no problem as long as you make the correct connections. However if you are at all unsure I would recommend taking the drive and transformer to your electrical shop, and getting them to check the output.***

## Music while you work

I have been using Microdeal's Quartet for about six months now, but I still have a couple of problems which I hope you can help with.

According to the Quartet manual, the music files can be used in programs written in "a good Basic, C, assembler or any other language providing good interfacing with Gem". Does this mean that you cannot use Quartet files in STOS? If not, do you or any readers know how the heck to do it? I've been trying for ages!

Quartet has a feature to play music through a Midi keyboard. I use a Clavinova CVP–3, but whatever I do, I can't get the computer to respond to it. It works fine in sequencers, but TCB Tracker won't recognise it either. Is this a problem with the software I'm using, or is the keyboard incompatible?

*Gareth Harrison, Tamworth, Staffs*

***The bad news is that playing Quartet files from within STOS is not likely to be easy if it is, in fact, possible. Hopefully some of the STOSers out there will already be bunging disks in envelopes with the required routines, which we may even include on the CoverDisk if there's a demand.***

***The fact that your Clavinova works with sequencers – I presume that you mean sequencers on the ST, not stand–alone units – suggests that the problem isn't in the keyboard. I presume you realise that the Quartet and TCB Tracker Midi*** ➤

*capability only allows you to make the program play a note when you press the Midi keyboard – it will not play sounds through your keyboard. If you can make your keyboard output on Midi channel one, then there should be no problem.*

## Hard times

I have recently purchased a hard disk drive from Third Coast Technologies. On getting deeper into using the machine I came up against certain problems. The physical drive is split evenly into five logical drives. If I save ten 20K files to an empty drive the total time taken is under four seconds, which is good.

Continuing to save files in batches of 10 as the drive is progressively filling up, files 90 to 100 take 20 seconds – two seconds each. Carrying on to the extreme, files 490 to 500 take 90 seconds - about nine seconds per file.

Repeating the experiment with 1K files suggested that perhaps the problem is the time taken to find space to write the directory entry. Leaving the one partition full and repeating the experiment on a fresh partition produced nearly the same results. Thus I am in the unfortunate position of having to use the hard drive for loading applications, and floppies for speed when it comes to data saving!

Another problem is that the drive will not auto–boot. A delay in turning the computer on is the only way to ensure booting from the hard drive, and this is a manual, not an automatic process.

*R.G. Moore, Barry, South Glamorgan*

***The saving times you are experiencing are a puzzle. To check, I cleared a partition and repeated your experiments with my own test program. There was no significant difference between the first and last files saved. The only time that you can expect to get a significant speed decrease is when a partition becomes fragmented, and this will only occur when files of varying size are saved then deleted a number of times. I cannot think what is causing this phenomenon, though it seems unlikely that the hardware is to blame.***

***Disk cacheing software may speed things up, though I would not recommend using cached write normally, as there is a danger of losing data if the power is lost during the process. If any other readers have experienced this, I would be interested to hear.***

***As far as auto–booting is concerned, this is a problem with a great number of drives. If the ST does not recognise the presence of a hard drive on power–up, it boots from floppy drive A. Some drive simply seem to take a little longer to register themselves than others, and hence the need for a delay.***

***A simple method to get around this problem is to have a program in the AUTO folder of your floppy disk, which simply resets the ST. An example program is:***

```
        PEA reset(PC)
        MOVE.W #38,-(SP)
        TRAP #14
        ADDQ.L #6,SP
reset   MOVE.L $46E,-(SP)
        RTS
```

*This program uses the reset–vector for a monitor change to continually reboot. Placed in the auto folder of the disk in drive A, the ST will reboot until the hard drive is ready.*

## Printer problems

I would like to thank everyone who wrote in offering help and advice to P.R. Morgan of Gwent, who was having trouble with his Brother M1009 printer. Judging by the response, this must be one of the most popular printers for the ST. A manual has now been forwarded to Mr Morgan.

### More queries...

- Michael Ives is having problems with his Amstrad LQ3500. Although he can get it to print, the quality is poor in both graphics and text mode, and he does not have a printer driver for 1st Word for the printer.

- Brian Allen has a Star SG15 and would like to know if there is a method of upgrading it to a colour printer? He would also like details of the operation of the switches and any other information you may have to offer.

- Mike Fowler has been given a Commodore MPS803 which, he has been told, is not compatible with the ST. He has no connecting lead, so cannot put it to the test.

- D.J. Draper purchased two HP Thinkjet printers at an auction. One has a serial interface and the other an HP1B. The serial interface refuses to print anything but question marks, and the HP1B is a mystery.

- Andy Lee is looking for a driver for his Integrex Colourjet 132. To cut a long story short, he's tried just about everywhere, and even lost £10 in the process!

***Can you help any of our printer problem cases? If so please write in and I will pass on any information.***

## Questions questions...

As a newcomer to the Atari world I wonder if you could answer some of my questions. I would like to get a couple of art packages. I can just about afford Deluxe Paint and Degas Elite – is this a good choice? Is it worth getting a second drive, and which one is best? Is it possible to put a monochrome program on a colour TV, or do you need two monitors? Finally, where can I get Bubble Bobble from, as since I played it on my dad's Amstrad it has been my all time favourite!

*Graham Yeadon, Reddich, Worcs*

***It's very difficult for us to recommend different software packages, as much depends on exactly what it is to be used for, and on your particular tastes. Deluxe Paint and Degas Elite are both good packages. Deluxe Paint certainly has most of the features you are likely to require, and Degas Elite allows you to use mono as well as colour. Before shelling out it may be worthwhile getting some PD art packages, which may help you to decide which features you require.***

***Buying a second disk drive is only necessary if you find yourself spending a lot of time copying files from one disk to another, or running out of space on the disks you use. It is advantageous sometimes to have your data –pictures for example – on one disk, with your application program on the other disk. It really depends on the amount of use you will get out of it.***

***As for which is best, this is an impossible question to answer. Drives do not vary a great deal. Some allow you to format more tracks than others, which may be useful, but may demand higher quality disks. Others have features such as track displays which may be useful to you. If you are unsure whether you want one or not, then I would recommend the cheapest!***

***In principle, monochrome programs will not run on colour systems, and vice versa. There are a number of mono emulators available, both PD and commercially, which allow the running of mono–only software on a colour TV. The programs will not look as good as they do on a mono screen, and some programs may still refuse to run.***

***The other option, rather than buying two monitors, is to buy a multisync monitor, which will run all three resolutions supported by the ST. While these are expensive, the price is close to that of a colour and mono monitor, and for convenience they cannot be beaten.***

***The good news on Bubble Bobble is that it has been re–released as part of the Rainbow Collection from Ocean. At £19.99 the collection is great value for money – assuming you don't already have any of the other games – and includes New Zealand Story and Rainbow Islands.***

## Atari drive problem

I recently installed a 1 meg internal drive in my 520 STFM. The working of drive A appears to be entirely satisfactory. It accepts either single or double sided disks. Unfortunately my external B drive (Cumana, also double) which worked well before the upgrade is now exhibiting rather strange behaviour, viz. It will now only read single sided disks. If I attempt to use a double side disk the Gem file manager displays garbage for the folder and file names and the machine crashes.

This does not appear to be a fault in either the disk or the drive. All double sided disks (which work in the new drive and used to work in the B drive) cause the same symptoms (different garbage). However if I use a disk editor (ST Doctor) data appears to be accessible on all the 80 tracks in the disk. And I can read the FAT with a suitable home-made utility. Is there some jumper or switch I should have set in the new drive or in my machine? Is this a virus? Help!

***It sounds to me as though the problem lies with the disk drive itself. Possibly the read/write head for side two has become damaged. Repair may be possible, but may prove be almost as expensive as a new drive.***

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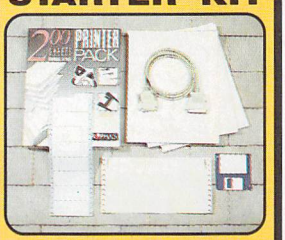


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# GALLERY

## From cars to cartoons, from monsters to witches, it's the ST page that's covered in pictures

What a cracking slogan that is, and what a cracking selection of ST art we have for you this month. So without further ado, let's take a pleasant and informative stroll through the Gallery.

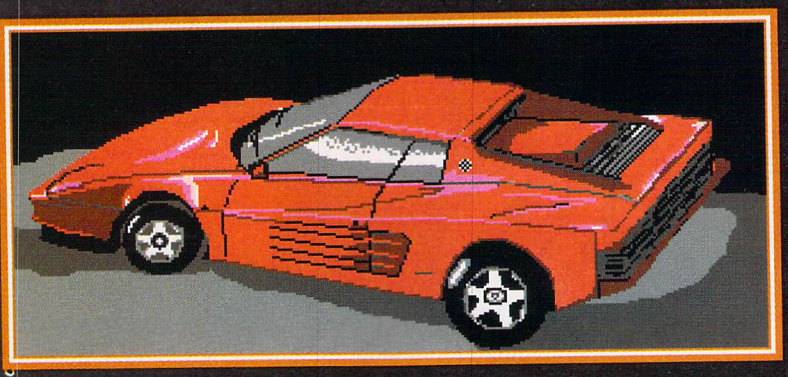
First of all, let's pause and contemplate the work of one Jason Pritchard. A wide variety of pictures, ranging from the Sisters of Mercy to The Chart Show were received from Jason, but we've chosen these three as outstanding examples of his work. Three great hand drawn reproductions of TV and film faves Danger Mouse, Roger Rabbit and the Daleks.

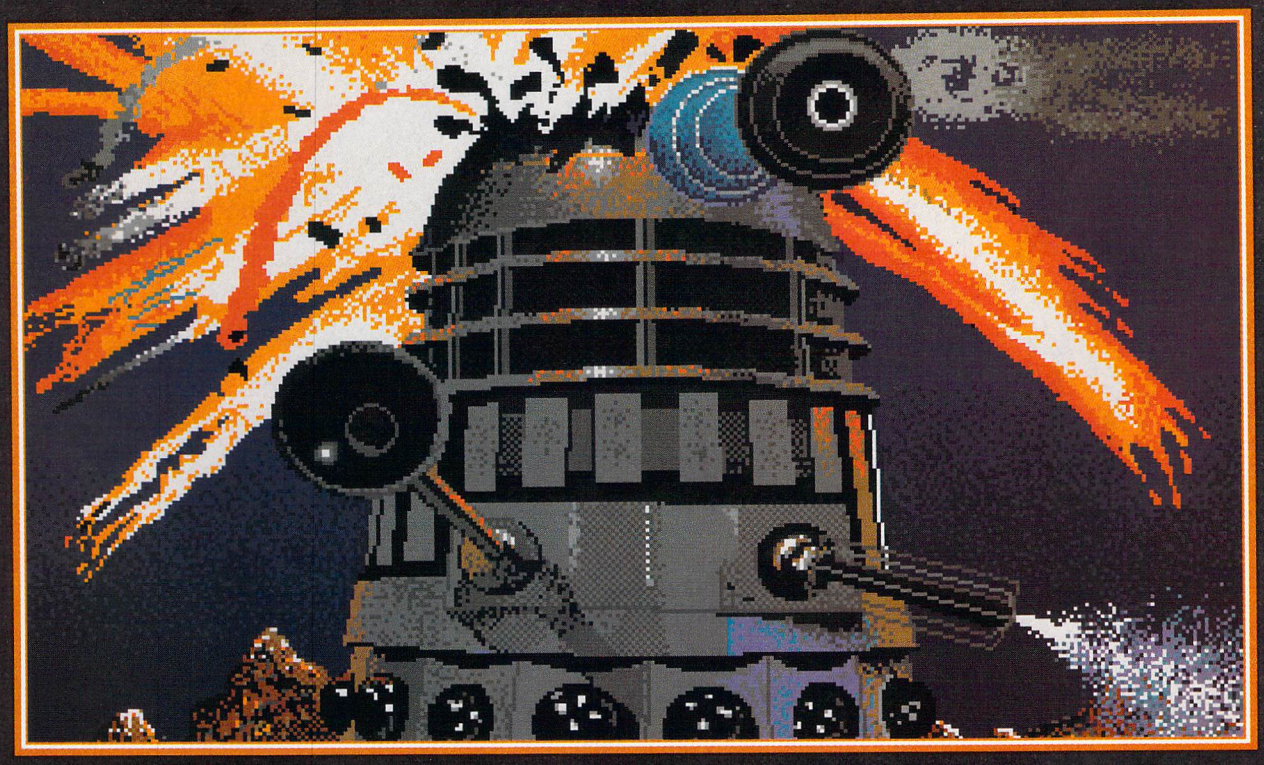
Next up we find a rather classy Ferrari Testarossa, courtesy of Peter Heron of Middlesex. A groovy machine and no mistake. The very sight of it could make you rampant all the way to Wexford. A high class piccy of a high class car.

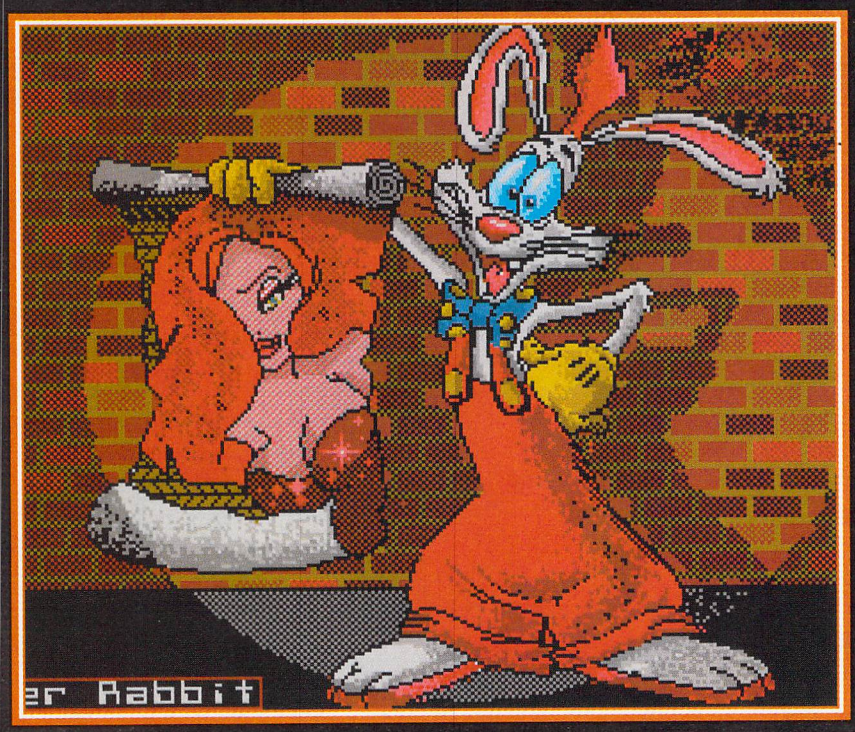
Winner this month, however, is Ian Cochrane from old London town. His dynamic muscles and monsters picture is one of the most energetic we've received and captures the feel of all those fantasy stories without actually copying from any one in particular.

To begin with, he traced his original sketch into a grid. He then copied each grid square into the computer, but the picture was on its side. So he rotated and stretched the picture until it looked right and then went about colouring it in with a carefully selected palette. Well worth the effort, say we.

As compensation for his hard graft, we'll be sending him a framed, glossy copy of his picture to cover up any unsightly damp patches on his walls, and a free copy of that fruity art package, Deluxe Paint. What more could you ask for?








What do you mean, you could do better than that? Go on then. Prove it. Load up your art program and create a modern digital masterpiece (or two), slap them on a disk, bung it in an envelope and send it to us at:

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# INSIDE THE STE

*For those of you who thought the video shifter was a dodgy VCR salesman, Adam Greenwood has some good news*

Continuing the series on programming the ST, this month's article takes a look at what can be done with the improved video shifter chip. There are two 68000 example programs on the CoverDisk to demonstrate the techniques explained here, both fully commented, and this month's utility is a handy STE multiple palette editor.

## 4096 colours

One of the best known features of the STE is its range of 4096 colours. This gives better shading, a good example of this being the machine's ability to display a full 16 shade grey scale where older STs could only manage eight shades.

On the ST, each of the 16 colours is represented by a colour word made up of three four bit nibbles which represent the levels of red, green and blue for that colour. However, on the original machine the most significant bit of each nibble, ie bit three, was unused, giving a range of zero to seven for each colour component.

The extra colours on the STE are available through this previously unused fourth bit, making the range for each colour component 0 to 15, or 0 to $f. It isn't quite that simple though, since the least significant bit of an STE colour component value is stored in memory as the most significant bit of the colour nibble. This is necessary to maintain compatibility with older STs - if the bits were not arranged in this way, any colours from an ST would appear at half intensity on the STE. Using the new arrangement, old colour values appear one shade darker, but this is not really noticeable.

Both vertical and horizontal scrolling are provided for on the new shifter chip. Vertical scrolling is the easiest to program through the new vbaselo register, which sets the low byte of the screen address. This allows the screen to be at any even address, and means that the screen can be moved up or down by changing the screen base address by the right number of bytes. For instance, adding 160 to the screen base address would move the screen up one line in low resolution.

The vbaselo register does not take effect until the next vertical blank, and can be used with the original high and low screen base registers to set all three bytes of the screen address. The register which was previously called screen base address low should now really be screen base address middle. One important point when using these registers is that the new vbaselo register must be set last out of the three, or it will not have any effect. Nobody seems to know why this happens, but if the vbaselo register is set first it will be ignored.

To understand how horizontal scrolling can be achieved it is necessary to think about how the screen is arranged in memory. Normally, one screen line follows on directly from the next, but if we want horizontal scrolling this needs to be changed. Any data which is to be scrolled on from the sides of the screen must be stored in memory at the end of each screen line, and this involves having screen lines in memory which represent more pixels than the actual width of the screen.

## Horizontal scrolling

Horizontal scrolling on the STE uses the screen base address and two other new registers, hscroll and linewid. The hscroll register gives the pixel offset for the first word or words of screen memory, indicating which pixel should be taken as the first onscreen, and so can be used to scroll the screen horizontally by up to 15 pixels. After this, the screen base address can be changed by the correct number of words – depending on screen resolution – to move the screen along 16 pixels, and the hscroll register set back to zero and used to continue scrolling.

The linewid register indicates how many words should be skipped at the end of a screen line to get to the start of the next line. This means a screen line in memory can be longer than a physical screen line, allowing data to be scrolled on from either side. When scrolling, the linewid register is actually set to the number of words after the end of a line minus the number of words per 16 pixels.

In other words, for low resolution it is the number minus four, for medium it is minus two and for high, minus one. Things are complicated slightly by the fact that when the hscroll register is set to zero the linewid register should be set to the full number of words. Both the Hscroll and Linewid registers take effect immediately.

This arrangement means that there must be at least 16 pixels at the end of each line, since a value of zero for linewid and non-zero for hscroll indicates that enough words for 16 pixels ➤

INSIDE THE STE

will be skipped at the end of each line.

To get a working scroll, care needs to be taken over when the registers are actually set. For a vertical scroll, all that needs to be done is to set the screen base address, which will be used at the next vblank. For horizontal or four way scrolling things are a little more complicated, since once the values for the screen base address and hscroll registers have been calculated they must both take effect at the same time.

This usually means buffering the hscroll value until just after the next vblank and then setting it. The value for the linewid register should be worked out when the hscroll register is actually set, since it changes depending on whether hscroll is zero.

For continuous scrolling the screen needs to "wrap around" at some point, since if it keeps moving in one direction it will reach the end of physical memory. The trick with wrap around scrolling is to switch the screen back to an image which is the same as the one being displayed. In actual fact, this will be the next stage on from the current screen. This can be demonstrated by considering a single full-screen picture continuously scrolling vertically.

To get the picture to wrap around we need to have two copies in memory – one directly below the other. As one picture scrolls off the screen, the next picture scrolls on, until it is the second copy which is being displayed. The screen is then switched back to the first copy.

In fact, to keep the scroll smooth, the screen is switched back to the first copy of the picture just before the second copy is fully onscreen.

In terms of the screen address, this can be incremented by one line at a time, giving an upwards scroll. Before the scrolling starts, the first copy of the picture is fully onscreen. Then, as the screen base address is increased, the second picture scrolls on.

If we set the screen base address back to the first copy at the exact moment when the second copy would have filled the screen, the scroll will wrap around and continue smoothly. This works for a one line scroll, but for other speeds the address needs to be adjusted to give the correct displacement from the top of the picture.

For horizontal scrolling the theory is the same, but the second copy of the picture needs to be interleaved with the first, so that the first copy of line one is followed by the second, then two copies of line two, and so on. The screen can then be wrapped around after the correct number of pixels have been scrolled vertically – in low resolution, just before 320. This can be combined with the vertical method to give continuous diagonal scrolling, as in the example program.

For something like a game, data is usually assembled into memory from a map, but the screen still needs to wrap around, and the techniques are very similar. The main differences are that the data has to be copied into memory twice – once for the picture being displayed and once for the image which will appear when the screen is wrapped.

Things are complicated even further by double buffering, where the screen is constantly switched between two different images to allow sprites to be drawn and undrawn. This will be examined in more detail at the end of the series.

## Special effects

One advantage of the way that the hscroll and linewid registers are used is that they can be set while the screen is being scanned. This allows different screen lines to have different start pixels – up to a maximum offset of 15 – by using the horizontal blanking interrupt to change the hscroll values for each line. This is very similar to the method used to change the palette to give more than 16 colours on the screen at once.

The linewid register can also be used in this way to give larger offsets by shortening and lengthening the distance to the start of the next line. This technique is used in the second example program to give a hardware screen "wobble" by giving each line a different offset.

## Debugging

Care must be taken when debugging any code which changes the hscroll or linewid registers, as most debuggers will not restore these registers when something goes wrong. This usually renders the debug display unreadable, since it is designed for a normal line length. The best way round this is to have a piece of code somewhere in the program which will set the hscroll and linewid registers to zero, and so restore the debugging display.

When the program crashes, the program counter can be saved and then set to point to this piece of code, which can then be single-stepped, thus restoring the display. The PC can then be restored. The only problem with this is that it has to be done "blind", since the display will be unreadable. Hopefully, future versions of debuggers will reset the hscroll and linewid registers along with the screen address, screen mode and so on when a problem occurs.

## External sync line

The video shifter chip also allows an external sync to be provided through the monitor port, so that the screen display can be synchronised with another device. This is not of particular interest to the average programmer, but has already been used to synchronise the STE with video equipment for video genlocking, and will probably find other uses as well.

## Example programs

There are two example programs on the coverdisk. SCROLL.S demonstrates multi-speed, four-way hardware scrolling, with the direction and speed controlled via the keyboard. WOBBLE.S shows two things – firstly the improved palette, which is demonstrated by having several predefined palettes and fading them in and out using multiple palettes designed with STEPal, and secondly a hardware screen "wobble" which uses the hblank interrupt to change the hscroll register as the screen is scanned. The code for each subject has been kept as separate as possible.

Both the example programs can be edited and assembled from medium resolution, and will switch to low resolution when they are run, restoring the original resolution after execution.

This article should have something for everyone in terms of programming the STE's video shifter.

***Next month's article will stay on a graphical note by looking at the blitter chip, including how to program it directly to get a blitter chip sprite routine.***

## Colour Palette

*$ff8240 - $ff835e rgb colour registers*

*colour word:*
bit 11 10 9 8 7 6 5 4 3 2 1 0
meaning R0 R3 R2 R1 G0 G3 G2 G1 B0 B3 B2 B1
Rx = Red , Gx = Green, Bx = Blue
where x = bit no.

*Giving the following colour range:*
intensity level 0 1 2 3 4 5 6 7 8 9 a b c d e f
4-bit nibble 0 8 1 9 2 a 3 b 4 c 5 d 6 e 7 f

*Screen Address Registers*
$ff8201 screen base address high (vbasehi)
$ff8203 screen base address middle (vbasemd)
$ff820d screen base address low (vbaselo)

*Horizontal scrolling*
$ff820f over-length line width (linewid
$ff8265 pixel scroll offset (hscroll)

*Screen mode*
$ shift mode register

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# BEYOND STOS

*Mike Dixon-Kennedy finishes with Traps, and begins to delve into the colourful world of graphics*

Last month I showed you how to format disks exactly as you wanted them, so by now you should be getting very used to using the TRAP command. This can be particularly useful when overcoming problems which otherwise may be cumbersome, if not impossible, using the STOS commands. The BLOAD command is a prime example of this.

BLOAD in STOS simply loads a file in binary format into memory starting at an address specified. However, it does not take into account the length of the file being loaded.

As an example, say you have a file on disk called "file.dat" Now suppose that file is 100K long, and you've only got a 50K memory bank to play with. If you use BLOAD you'll spill data out of the end of the memory bank, and under some circumstances, can actually crash your ST!

To get around this you open your file and then read in the required number of bytes before closing the file again. You can do all of this using three TRAP calls.

To open your file you would use:

```
TRAP 1,.w $3D,.l filename_address,.w
flag
```

The address of the filename is determined quite simply by setting a string variable to the filename, and then using VARPTR to find out the address at which this filename is stored. The flag is used to determine the actions possible on the file. Set it to zero if you only want to read from the file, one if you want to write to the file, or two if you want to be able to both read and write the file.

Having opened the file you will find the file handle in dreg(0). Taking our example let us now read in 50K of the 100K file. To do this simply use:

```
TRAP 1,.w $3F,.w handle,.l length,.l
buffer
```

This is the Gdos function to read from the file, and is function number $3F. The parameter handle is that which was returned in dreg(0) by the previous command. Length determines the number of bytes to be read, whilst buffer is the address of the start of the memory bank we are reading into.

Finally, having read just what we want, we close the file. To do this simply issue the following:

```
TRAP 1,.w $3E,.w handle
```

That's all there is to it. Simplicity itself.

Hopefully you'll now have a good idea of how to use the TRAP command. I'd be interested in hearing how you've used it in your programs.

## Small is Beautiful

Moving swiftly along let's start our look at STOS graphics. This month I'm going to concentrate on a very powerful command that is only partially described in the STOS manual. This is the PACK command.

The manual states that this command is used to compact a screen, which it is, but it can also be used to compact a portion of a screen. As it stands the manual does not give the complete syntax for the command, which should be:

```
length =
PACK(screen,bank[,mode,flag,y_div,x1
,y1,x_wt,y_ht])
```

Straight away you can see just how much more complex the command is when compared to what is given in the manual which simply gives the syntax as:

```
length = PACK(screen,bank)
```

The major difference is that, using the extra parameters, we can now compact any portion of the screen we desire, and can, by running through a series of alternatives for the parameters, obtain the most efficient compaction of the screen, sometimes resulting in as much as a 40 per cent improvement over using the command as shown in the manual. That's not something to be sniffed at.

The extra parameters, which are optional hence their insertion between square brackets, have the following meanings:

Mode: this must be set to the screen resolution of the screen to be compacted.

Flags: this parameter holds two flags in bits 0 and 1 that control the action of the PACK function. If bit 0 is set the picture being compacted will be erased once it has been compacted. As this is not always a good thing it is best to leave this bit alone.

Bit 1 controls the palette used by the compacted picture. If this bit is set the palette saved will be that used by the picture.

If it isn't set the palette will be changed to the standard STOS palette. Therefore it's normally best to set this bit, so the parameter flag should be set to two.

y_div: this is a variable that is used to compact the y axis of the screen, and should be exactly divisible into the y dimension of the screen, or the part of the screen that you are compacting.

x1 & y1: these set the top left-hand corner of the screen area to be compacted. Note that x1 must be divisible by 16 otherwise it will be rounded to the nearest multiple of 16.

x_wt: this gives the number of 16 pixels wide blocks that are to be compacted in the x axis. For example, if you wanted to compact a portion of the screen that is 160 pixels wide you would set this parameter to 10.

y_ht: a variable used within the compaction routine to determine the most effective compaction in the y axis. It is calculated as the number of pixels that make up the full screen height in the particular screen resolution you are compacting, divided by the value used as the parameter y_div.

This might all seem very confusing, but it isn't really. Mind you it took me some time to work out just what all the various parameters meant, and what they did! On this month's CoverDisk you'll find a program that uses this command which should make things a lot clearer. You'll also find a subroutine that you can combine into your own programs to load a screen, compact it, and then save it out.

By playing around with these two programs you should very quickly get to grips with the complete version of the PACK command.

I'll leave you this month working out just how you can use the PACK command to the best advantage. Next month we'll take a look at some of the other graphics commands that aren't too well explained in the manual by making a start on an art package that will come as a series of

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886 DIY DEMO, Make demos, features titlescreen & scrolling message.
836 BICLOCK to set time/date. Coder Set printer from desktop. MONOEMU v5.0.
324 ADDRESS LOG, On this disk there's a limited address book & label printer, a disk catalogger that auto disk directories etc.
747 TURTLE, A HARD disk backup utility. PROTECT, write protect Hard disk drives. HDUTIL. DSBMARK test hard disk speeds.
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466 GHETTOBLASTER, a simple but enjoyable demo designer. LOW RES.
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759 SPRITE EDITOR. Create & save your own sprites. Excellent Sprite design program that has several fast & flexible routines.
440 C TUTORIAL, superb disk manual that provides an excellent intro to C programming.
474 GNU GDB, source level debugger. SZ ADB, M/C debugger for SOZOBONC.*D*
475 MKRSC GEM resource construction util.
476 MODPAS, Pascal Compiler, docs. *D*

### COMMUNICATIONS DISKS

364 PACK-ET-TERM v3.3A, a great radio package. YARP split screen RTTY terminal.
316 XMODEM, MODEM 7, a multiple file transfer utility, transfer a whole disk in one go. Plenty of docs.
366 UNITERM v2.0a, docs inc. Superb comms package. Tektogem transformer prog
752 VANTERM 3.71 & 3.8 is just about the best PD Communications package around
463 LOFT COMMS DISK. Ideal for the beginner, some conns progs and very large helpfile.

### APPLICATIONS - SPREADSHEETS, DATABASES ETC

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827 ST SHEET. This is a very good quality spreadsheet. Can be used as a Desk Accessory *C*.
830 HOME ACCOUNTS v1.0 Pullin. 43 different statements in memory. 100 entries per statement *C* NOT STE.
873 B/STAT v 2.01 This is a sophisticated graphing & statistical analysis program *D*.
874 OPUS v2.2. This program is a GEM based spreadsheet & charting program *DX*.
543 WG DATA, database, custom screen layout for data input. Comprehensive docs.
537 DOUBLE SENTRY, Accounting prog. A fully working accounts package that covers all aspects except VAT.
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### GAMES

343 SHERLOCK, A cluedo game Sherlock. El Bozo City, Sci-Fi text adventure. Around The World In 80 Days, collect 17 souvenirs in order to succeed.* M *
340 ARKANOID CONSTRUCTION Kit.*DX*
544 AYATOLLA, Your border is under attack from terrorists.
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856 CHESSNUT, is a 3D chess game. SPOOKS is a great PACMAN clone. BELLUM INTERNECINUM, Galaxian clone.
531 COMPUTER PINBALL, as it sounds. DEVASTATOR, a 3D game, & a DARTS game.
576 TALESPIN. The wolf and the 7 kids. This was intended as a first adventure for children aged 5-9.
518 Cribbage, Othello, Yahtzee.
519 WIZZARD'S LAIR complete text & graphic adventure.
780 UNDER BERKWOOD A massive graphic adventure.
781 MAKE A BREAK, A great Trivia game leaning heavily towards Snooker rules.
403 FLYOVER, a bombing raid game, reasonably difficulty.
405 BOXING CHAMP, fight the worlds top 10 champs.
409 ESCAPE FORM THE TOMB OF RA, collect jewels to prolong your life, find the secret passsages, and if you can, get out alive.
410 MUTANT, A reactor in a nuclear powered mine goes out of control. You must get to the end cavern and destroy it.
413 MARS MAZE, good platform game. Work your way up through the levels, get the fuel pod before your time runs out.
419 CHESS, a very good implementation.
421 COMPANY, business simulation.
422 MOTORBIKE, drive your bike around and BLACKJACK.
423 TARK, great text adventure. You are Tark, priestess of the First Church, in her battle against the Demon of the Dark Desire. D & D type.

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467 BATTLE FOR THE THRONE, a role playing adv.
418 THE NAME GAME, based upon the Sun puzzle.

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736 More Arrows, Artdeco, Breakfast, cups/glasses & more kitchen parts.
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739 More Girls, Scrolls & Occasional clips.

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764 YAHTZY, An extremely popular game.
799 BOMB OUT BROTHERS, Compilation disk No.1. MAD MOLE, great version of the Boulderdash, LASER RACE, defeat enemy laser cars in the arena.. ALIEN BLOCKADE, based upon the arcade game QIX.
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354 Diamond Miner is a multi-screen game with a built in games editor. Snafu & a card game called Skat.* M *
855 EXPLODE is a fairly original game where you have to outwit the computer. BALLZONE is an Arcanoid clone controlled by the mouse. JITTERBUG, You rescue aliens from a 'dying' spaceship.
528 FLOYD THE DROID, an ultra fast shoot 'em-up. Sampled sound is a real blast.
530 AIR WARRIOR, a Flight Simulator, with a choice of warplanes, accurate details. fly 'solo'. Full documentation.
705 HARRIS WENT SKIING, You have to get Harris across a busy road to buy Skis.
710 VIRUS Save the CPU from a virus out to destroy it.
402 JITTERBUG,The ship contains rare alien lifeforms which you have to catch.
406 TRACKER, destroy the enemy tracker base.
407 OVERLANDER - shoot 'em up where you fly in and destroy the enemy base.
408 CHANCE, Defeat the Archons. You have to fly through their defence system and destroy the mothership.
414 STEEL, a good scrolling shoot 'em up where you can blast everything in sight.
326 Arcade games including Warzone, Daleks, Haunted House & Mousemess.
317 The games on this disk are Battleships, Checkers, Maze(.ACC), Megaroids(Mono) Pool.
547 ADDICTION, a great version of the card game patience, great graphics (not STE).
329 Checkers, The Original Adventure, Pool & a fun Chess game. * M *
345 PUZZLE PUZZLE, jigsaw puzzle games from Germany.*M*
863 SLEUTH, A CLUEDO style whodunnit. LOCATION CRISSLEFRIDGE, You're Denby & you must dispose of radiation canisters.
891 SUPERBREAKOUT, There are over 40 brick types all with special features.*M*
554 NAPOLEON, conquer europe. * M *
761 EMPIRE BUILDER property development simulation. LOST TREASURE, you have to recover the lost treasure.
762 RUSH, rush around moving bricks in order to create a way out for the ball. Game where you head butt attacking rats.
566 DIE ALIEN BLOB, a great shoot 'em up.
742 TREASURE SEARCH, find the hidden treasure.*D*
582 STUMPED play international cricket, Control of team selection *D*
344 BALLER, arcade castle & cannons game. *M*
309 ADVENTURE WRITING SYSTEM
553 1ST SERVE TENNIS, tennis simulation
766 TUNNEL VISION, A great maze game
552 BERMUDA RACE 2, The challenge is to sail to Bermuda.
562 INVASION, adv set on a huge spaceship. Over 100 locations to be explored & puzzles to solve. CRICKET, text simulation.
580 LEAGUE SOCCER, Play the full league programme week by week. Full control over player selection.
351 HACK 1, a Dungeons & Dragons text adventure with graphic maps.
581 TOP OF THE POP, Climb up the Top 50
350 MINEFIELD & MISSILE two arcade games *M*
507 SKULDUGGERY, Mono/Colour, Guide a cave mite around caverns collecting diamonds. 100 levels. BLASTER defender clone.
347 SPACEWAR is a good arcade game. FIRESTORM, uses the mouse. AZARIAN shoot 'em up, beat the invading Thraxx
349 SOLITAIRE with 3D graphics. MACPAN is a Pacman clone. Galaxy & Sprengmeister are strategy games *M*
508 ATOMS is a mentally challenging game for 2-4 players. KILLERCHESS. AMMOTRACK's a race & blast'em game.
348 PACMAN, TRIVIA QUIZ, YAHTZEE
511 SCANNER a checkers game, SPACEWAR, 2 space ships battle it out
515 SHIPWRECK, educational maths with graphics.
514 A DUDLEY DILEMMA, ADV. game. You guide a student at Harvard University.
782 NAVAL BATTLE, Battleships
707 CENTAURI, a Horizontal scrolling shoot 'em up.
783 CHESS, MONOPOLY, BACKGAMMON
412 GRAND PRIX, good fast racing game
416 WHEEL OF FORTUNE, quiz based upon the TV programme.
417 HEDGEHOG, Frogger clone.
411 KEY TO ATLANTIS, Go around collecting various treasures to prolong your life.

ST P.D NEW ADDITIONS

785 MOVIE CONSTRUCTOR: animate objects & text to create stunning effects. Examples inc. FACE ANIMATOR: design a face then let your ST animate it. *M*
786 SIMPLE DRAW V3.4: A great art package that works in medium & high Res. Degas compatible samples included. (Docs foreign)
787 HYPERTEXT: Shareware prog suitable for the production of very professional documents. Simular to a DTP but more flexible, pics & text easily mixed on screen *MD*
443 ATARI TOS 1.4 FIXERS(STFMs with Rainbow TOS): POOLFIX.PRG & TOS14FIX.PRG for fixing O/s bugs. CACHE.TTP for speeding up disk access. Full docs.
444 XCONTROL: ATARI's latest TT control panel accessory for all STs. CPXs included; Color Setup, Configure CPX's, General Setup, Modem Setup, Printer Setup, Sound Setup(STE only), Window Co lours(TT only) and Accelerator. Plenty of docs on disk.
445 ULTIMATE VIRUS KILLER V5.0: Detects 60 viruses. This cut down version kills only 1 virus per session and some features are not fully functioning. CALSHOW: is a superb calender prog with great features and has loads of American historical data already programmed. Comprehensive docs.
446 SNOW FLAKE FRACTAL GENERATOR: Generates curves based on the Von Koch snowflake principal, with docs. DIARY: A great diary and address book utility, a must for keeping track of events and people, with docs.
447 FLEXIDUMP PLUS: Working demo version, Ok with most print ers. Screen dumps pictures. Some features disabled but still useable.
448 CYPHER: Encodes pics so that they cannot be loaded into normal art packages(& copied or modified) LITTLE GREEN SELECTOR: great file sel. replacement with many features lacking in the Atari version. Full docs. WPTOOLS: A .ACC that gives extra facil ities to 1ST Word and 1ST Word Plus.
449 LLAMATRON: A great Shareware game by Geoff Minter. Beware of the mutant Llamas in this shoot'em up. 1/2 & 1meg versions included. *D*
450 REVENGE V2.01: Super intelligent document displayer, which makes file reading a dream. Full docs.
451 VIDEO POKER: A faithful rendition of a Las Vegas poker playing machine. Docs included, Shareware. HAPPY WORM: Guide the worm around the maze .
452 DERRICK THE DROID: A great mix of platform, Shoot'em up & puzzle game. Select from 6 levels to play. Collect the red & blue tokens.F7;F7
453 CHORDEX: Simple but effective musicians tool, learn major & minor chord shapes, it can connect to a Midi keyboard & play chords automatically.
454 MEMFILE 2.0: Memory and disk editor with powerful features, runs as a .ACC and you can actually examine the program you are running in memory. DLII: Check disks, retrieve deleted files & edit data directly on a floppy or hard disk. REORG: Companion prog for DLII. Examine data on a disc related to one file and rewrite it for better disc management, docs.
455 NAMENET:An excellent database that runs in Med & High res. Large amount of docs, and includes an 01 to 071/081 telephone number converter.
456 VANTERM COFIG: Preset configuration file for Vanterm v3.8 with most of the best bulletin boards & E mail services included. CODE FINDER: Decode telephone coded by entering the dialing code and it will give you the town. STARNET: is a fully featured Bulletin Board System with comprehensive docs.
457 HD SCAN 1.6: Comprehensive shareware hard drive manager with full docs. ST TYPE: Nifty little program that gives you the TOS, GEM & AES version numbers of your computer. DCMAX TRACK: A great little utility to test how much data your disk drive can safely cope with over & above the normal 9 sectors 80 tracks. DCDISK INFO: Shows how much space is left on a disk by a graphi cal representation.
458 TETRIS:Classic 2D tumbling blocks game that's highly addic tive(MONO). PUZZLEMANIA: Multi level mayhem, highly addictive puzzle game wher you have to plan your way around the maze, turn on the generator and trap the droids.(COL)
459 STINGRAY DEMO:"Anything can happen in the next half hour !"

## OTHER ITEMS;

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INTRODUCING ATARI ST MACHINE CODE book with disk (+ 2 free PD disks).....£20.00

BULK DISKS - DS/DD 135 tpi fully certified **10 - £4.99** **25 - £10.99** **50 - £19.99**

GENERAL

588 STEVE'S COMPACTED DEMO NO.2 - Megabang, Robomix, & Magiceys. * D *
589 STEVE'S COMPACTED DEMO DISK NO,3 - Micromix, Stingray & Ballit. * D *
569 SLATATANIC CULT, Demo I & II *D*
358 GFA BASIC 1, A run-time version of GFA Basic is included with plenty of samples.
549 POOLS predictor, that includes a data
462 AUTOROUTE DEMO, Demo version is highly useable, covers the south of England.
465 POOLWISE V3.5, Sophisticated pools predictor. MED RES.
586 LIFE'S A BITCH, demo *D*
435 NEWGEN V4: very good Genealogy prog. Can print family trees etc.
437 BUSINESS LETTERS, 100 business style letters. SPREADSHEET, visicalc clone.
587 STEVE'S COMPACTED DEMO DISK NO.1 - Bat Demo, Micromix II, FujiBonk,*D*
889 Virus killer, a mono res` emulator, Art utilities, OIDS demo & a Space Invaders game.
821 POV6, Space ace demo, Starwars Rap, Bouncing ball + others. *DS*
807 SKY MAP, will display over 1500 of the brightest stars.
356 FAST BASIC 1, A selection of FB progs. There's an address database, & others.
575 CONSTELLATIONS. an Astronomers disk *M*.
701 PLANETARIUM, look at planet & get statistics on them.
357 FAST BASIC 2, A selection of Fast Basic progs. FILECOST.ACC, use with Fastcomm, & more
802 THE PLANETS, A slide show around the planets with plenty of pics, facts & figures.*D*
832 ST TOUR, Guided tour of your ST in tutorial form.
833 YOUR SECOND ATARI MANUAL - A text file of the book. A must for all ST users.
593 TRANSYLVANIA DEMO by TLB * D *
594 SOUND CONNEXIONS DEMO * D *
595 THE NEW YEAR DEMO, by TCB. *D*
567 DELERIOUS DEMO II, * D *
568 THE DEFINITIVE DEMO, by TLB *D*

EDUCATIONAL

872 KIDGRAPH, KIDMUSIC, KIDPIANO KIDPOTATO for children from 2-5 years *C*
559 KIDPUBLISHER, Kidsong. Numeric go round, Braille.
424 DOT2DOT, join the dots to make pics. KIDCOLOUR, for young children. KIDSHAPE.
425 MIX'N MATCH, an excellent game where you must pick two matching cards.
426 THE BODY SHOP, a great prog ideal for any age group, locate bones and organs.
427 SOLAR SYSTEM GEOGRAPHY, loads of data on the solar system.
428 GEOGRAPHY TUTOR, a great shareware package, full of all sorts of info.
429 ZOO MAKER, a game with a difference, you are asked questions and the computer tries to guess the animal.
704 WORLD MAP GAME Locate places around the World.
825 Spelling made easy
341 BARNYARD pair animals from memory. Smoothtalk demo. * C *
564 CHUNNEL, A French to English & vice-versa tutorial game, * C *
538 TYPING TUTOR (1).
744 PERFECT MATCH, Try and match cards 2 at a time. Questions & answers.
539 TYPING TUTOR (2) A very good full documentation.
557 SPELLING MADE EASY, The computer speaks the word, you then type in the correct spelling. Words included.
558 MATHS MADE EASY, Another great prog with speech synthesis.
430 ME FIRST, a prog where the pics have to be put in the correct order.
431 COLOURING BOOK, Superb prog for young users. Draw pics & then colour them in.

DESK ACCESSORIES & UTILITIES

301 Dir printer, various RAMdisks, Snapshot screen save in Degas format, spooler & a Desk Acc. loader to enable you to select which DAs you want to load.
385 68000 assembler, an Address/ Mailing list, Autodial Utility - date/time input. Label printer.
824 PICSWITCH 7 changes all graphic resolution. Hi-Res & Colour emulators. BBOOT, boot from your B drive. SWITCHER, switch between 2 progs in memory. FSEL 5.5.
307 Boot Double sided disks. Disk speed checker. A raster sprite generator. Floppy disk indexing system for catalogging your disks. Index prog.+ more.
854 DATABASE CONSTRUCTION SET is a very good PD Database. SPELLER's a spellchecker. DEFSEL fileselector, comprehensive inst. F-COPY. DOS.ACC, show files, format disks, chg prntr, set keyclick & chk free memory. MONST is a disassembler.
585 ANTIDOTE, Superb Virus killer for detecting & killing all bootsector viruses, comes as a .ACC. CLI is a .ACC Command Line Interface. Help for command list. BIT 7 STRIPPER removes control codes from Wordstar files. RUN LENGTH ENCODER gets more into limited memories & saves memory.
834 DOUBLE CLICK format v3.03 9/10 sectors, 80/82 tracks, regular/fast format options. Formats Magic disks, place MSDOS boot sector. loads of features. MEGAMINUTE v2.1 Hard drive backup utility.
382 A selection of archive utilities, including ARC, EXSQUZ, SQUEEZE, STPACK, STSQ, UENCODE & TAU a text file archiver.
703 STICKER III, A great program for creating disk labels.
844 DISKMAN is a disk utility NEW WORD's a wordpro. Mike's Ramddisk, an Alarm clock & WPTOOLS, written for 1ST word.
746 SUPER VKILLER is a utility that detects 5 different viruses, recognises 7 anti-viruses & 133 other types of boot sector. MUG FORMATTER, this prog formats disks in several different ways & also immunises them from most known viruses. TLC SUITE of four progs for getting more from your ST.

GAMES DISKS

329 Checkers, The Original Adventure, Pool and a fun Chess game.*M*
545 UPSTART An excellent shooting the cherries game, uses the mouse. Sampled sound and great graphics.*S*
765 COMPANION is a shoot'em up mission in outer space.
343 SHERLOCK, A cluedo type game. El Bozo City is a Sci-Fi text adventure. Around The World In 80 Days, collect 17 souvenirs in order to succeed.* M *
544 AYATOLLA, Your border is under attack from terrorists and it's your job to stop them.
546 SLIDER, a very good quality puzzle game with 3 levels of play.
513 FUZZBALL a great platform game
512 ZOG a great blasting game. SUPER SENSORI, repeat the pattern of musical notes with coloured buttons.
707 CENTAURI, A horizontal scrolling shoot'em up. One of the best produced in STOS to date.
708 STAR TREK -THE NEXT GENERATION, A great strategy game, with some good digitised effects and good graphics. Based upon Star trek. *DX* NOT STE
403 FLYOVER, a bombing raid game. Fly over the sea and bomb the enemy ships. The defensive fire is very intensive.
404 GLOB, you collect cherry cakes while avoiding pursuers. Inst. foreign but very easy to pick up.
415 BATTLE COMMAND, a good version of the original Missile Command.
422 MOTORBIKE, drive your bike around the track in this good simulation. CHECKERS and BLACKJACK.

EDUCATIONAL

859 REBUS WRITER, Design & print Rebuses - a 'code' in which pictures & symbols are used to represent words. It's very easy for children to use & lots of fun.
555 WELCOME TO CHEMISTRY V2, Excellent prog introduces chemicals gases, atoms, radioactive materials and more (NOT STE).
564 CHUNNEL, A French to English & vice-versaa tutorial game, with words & short phrases. * C *

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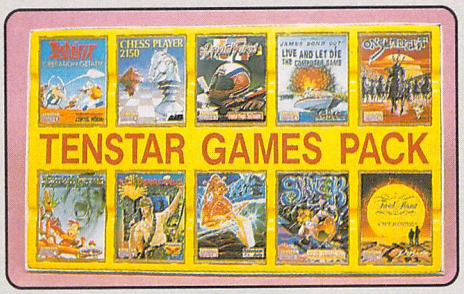


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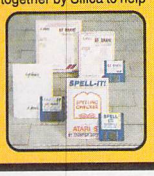


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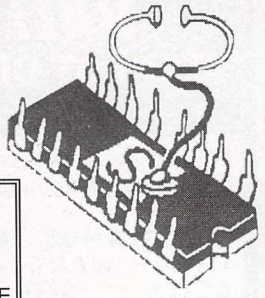

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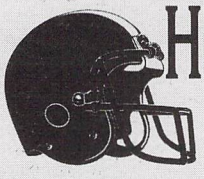

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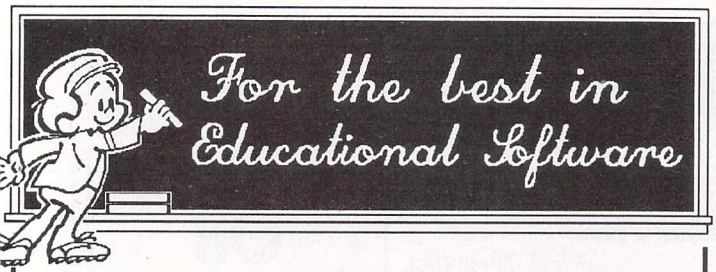


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# SOUND

The main contenders in the 8-bit sampling arena are Replay VIII, STOS Maestro, and Mastersound II. There are other sound samplers available for the ST, including Replay Professional and Audio Visual Research's 12 and 16-bit samplers Pro-12 and Pro-16. New to the Sound Sampling arena are the Daata Sound from Pandaal Marketing, and Stereo Replay from Microdeal. MPH are due to release a stereo sampling cartridge, though neither it nor the software were available for review.

## Stereo Replay

Microdeal and Audio Visual Research have teamed up again to bring us the latest in the Replay series – and this time it's stereo.

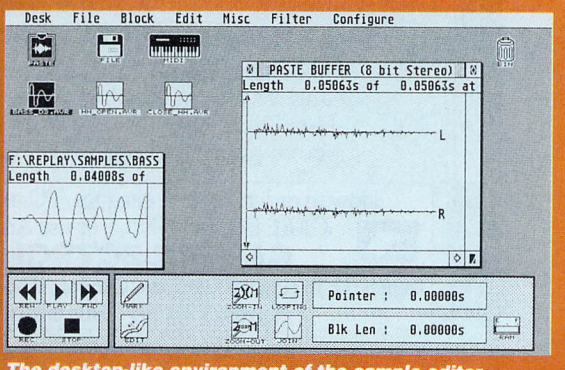
The replay series are probably the best known of the ST samplers. The obvious next step, especially since the release of the STE, was the stereo sampler.

Stereo Replay is distributed by Microdeal, and was written by Audio Visual Research, as are the whole series of Replay packages.

AVR have completely redesigned the software for this sampler, moving away from the standard sample editor layout and adopting a far more friendly Gem icon and window environment that oozes professionalism.

The first thing you notice on opening the package is the size of the cartridge. The huge L-shaped cartridge is far larger than strictly necessary, though the size had to be increased over the Replay 8 cartridge if only to accommodate the four phono sockets – two in and two out – required.

Once the cartridge is plugged in,




***The desktop-like environment of the sample editor makes the manipulation of samples simple, allowing the user to concentrate on the quality of the sample***

# CHECK

***In the early days, a sampler allowed you to record a sound into your ST's memory, save it to disk and not much more. Today, we are into an era of sophistication in digital sound technology. Marc Young sounds out the latest 8-bit samplers, including an exclusive review of Audio Sculpture***

phono cables must be connected from your sound source to the two stereo-in sockets. Cables are not provided, but are available cheaply from Tandy or other high street stores. Depending on your sound source you may require a "Y" connector, to go from a headphone socket to the cartridge, for example, or two phono to phono cables, if your setup has the appropriate line out socket.

On a standard ST the software runs in medium or high resolution, though it has been designed to run in any screen resolution giving at least 640 pixels width. It is fully TT compatible, and should be compatible with graphics adaptors such as the reflex graphics boards.

When the sample editing program is run, a desktop-like environment appears. At the bottom left of the screen are a number of VCR-like controls for record and playback. To the right of this is a shaded area known as the Block Control Panel containing a number of icons, whose presence changes depending on the currently available functions.

The length of the currently defined sample block and the position of the pointer are displayed, as is a graphic indication of the amount of available memory.

## Icons

The largest portion of the screen is initially empty save for three icons – a disk, a musical keyboard and a bin. These icons may be positioned anywhere on the screen by simply dragging them. When a sample has been loaded into memory – which can be done by double-clicking on the disk icon – its own icon will appear on the desktop.

To save the sample, this icon may be dragged to the disk icon. To delete a sample from memory, simply drag its icon to the bin. If an area of a sample is marked and then cut using the editing functions, a new clipboard icon appears on the desktop. This icon can be treated in almost the same way as a sample icon.

Standard drop down menus are available, and the more frequently used have keyboard short cuts available, such as Alternate-L to load a sample. Desk accessories are available if required, though their use is inadvisable on systems where available memory may already be low.

Rather than using the more traditional fixed sample window, a fully sizeable Gem window is used to display a representation of a sample. Any number of samples may be loaded – memory permitting – and simply double clicking on a sample's icon will open an editing window. This window shows the name and type of sample in the drag bar – ie whether it is an 8 or 16-bit sample – and whether this sample is mono or stereo.

In the window information bar the length of the currently visible portion of the sample is shown, together with the length of the total sample. Also the speed at which the sample was recorded and the current magnification are displayed. Multiple windows may be opened, though only the currently active window can be used for editing.

## Flexible

The waveform display shows either one or two waveforms, depending on whether the sample in question is mono or stereo. When a sample is zoomed in so that it will no longer fit inside the window, standard Gem window scroll bars appear, allowing you to look at any portion of the sample simply by clicking or dragging.

In contrast to every other editor, Stereo Replay uses only one permanent marker to record positions within the sample. This marker is used to identify a point in which you are interested, then one of 14 definable pointers can be set to the marker's current position.

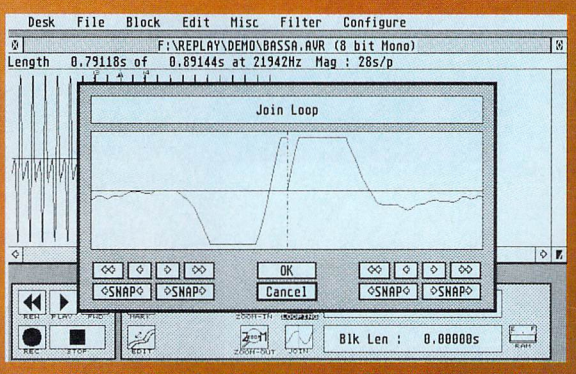
Also, a portion of the sample can be defined as a block simply by dragging the mouse from right to left, with the left button pressed, in a similar manner to that in which many wordprocessor and DTP programs work. The defined block can then be cut or copied to the clipboard, which is treated much like another sample, except that you cannot cut/copy/paste to the clipboard.

A welcome feature is the memory management of the software, ➤

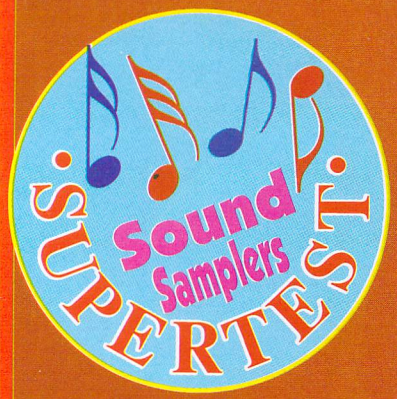
## Stereo Replay added extras

The Stereo Replay package comes on two dual format disks, containing the editor software, a large number of samples, and Stereo-Beat, a stereo version of the drum beat software available with earlier versions of Replay.

This new version plays mono samples, but allows three to be played simultaneously, in any one of left, middle or right stereo positions. Up to 15 samples can comprise the Stereo-Beat drum kit, and the timing can come from the ST or an external Midi source, making this a great option if you don't have a drum machine.




***The Join Loop function is used to position the loop point of a sample very accurately – in the example shown the join is very noisy, but selecting the Snap function will join the two halves at a point of zero volume***




➤ which allows the clipboard to be written to disk, should the memory be required by another function. With a hard drive, this is hardly noticeable, though floppy users may suffer somewhat.

The zooming function is a huge improvement over any other editing software. If a block has been defined, the zoom function will ensure it fills the entire window. If no block is defined, the zoom increases magnification and centres the magnified portion around the marker, if it was visible, or the centre of the sample if not.

The features provided by Stereo Replay are simply superb, and far too numerous to go in to in detail here. All the functions of other software are available but in almost every case the function is far more powerful in Stereo Replay.

FADE Fading a sample in and out can be performed by selecting the start and finish percentage values. A graph of the fade is shown.

OVERLAY One sample can be overlaid with another. The option is given to reduce the volume of each sample by 50 per cent before adding them together.

VOLUME CONTROL The sample can be scanned, the software searching the entire sample for the loudest point. The user can then automatically adjust the volume so that the loudest point is at maximum volume, giving the loudest non-distorting sample available. Volume control can also be applied as a percentage increase or decrease, uniformly along the sample, or ranging from one percentage to another along the selected block.

LOOPING When a musical instrument is sampled the sample can be looked at as if in three parts – attack, sustain and decay. The software allows you to define the start and end points of the sustain portion, which will loop endlessly when the sample is played. When the sample is required to finish, the Decay part of the sample is played.

Setting start and end points for the sustain is performed using the normal pointer positioning techniques together with a Join function, which allows positioning of the start and end points of the loop portion very accurately, even having an option to "snap" to the nearest point where the volume of the sample crosses the zero point, helping to reduce click.

Despite one's best efforts, it is often all but impossible to remove the click on a looped sample altogether. However, Stereo Replay has another trick up its sleeve, called Loop Fade. This function takes the end portion of the attack phase of a sample, and fades it in at the end of the sustain phase.

Thus the end of the sustain portion begins to fade in the same sound that was being played at the end of the attack portion, which should help the loop blend in with the beginning of the sustain more easily.

## Filtering

Samples may require filtering for a number of reasons. In some cases, high frequency hiss may need to be reduced, in others bass rumble may need clearing up. In extreme cases, filtering may be used to separate two samples – for instance, if you wish to remove just the bass drum from a sampled piece of music.

Two forms of sampling are available in Stereo Replay – fast and slow. The major difference between the two – besides speed! – is the complexity of the filtering available. Using fast filtering, the user can input one frequency around which all functions revolve. The slow filtering allows two frequencies to be input, enabling far more accurate operations to take place.

Within each of the two, four options are available – Low Pass removes frequencies above that input, High Pass removes those below, Band Pass removes frequencies outside the range given and Notch removes frequencies within the range.

The actual changes performed on the various frequencies is not as simple as might be thought from this. For example, if the low pass is set to 4,000Hz, the filter does not actually remove every frequency above this, but reduces the volume by ever increasing amounts from this frequency upward. A graph of the proposed effect can be displayed before any changes are made to the filter.

While all of the functions discussed so far apply equally to both mono and stereo samples, there are a number of facilities specifically for the stereo samples.

CHANNEL SWAP The left and right channels of a sample can be swapped, copied from one to the other or cross-faded by the simple selection of the appropriate function.

PAN IMAGE The Pan Image function allows the user to define a start and finish percentage value, and also whether the Pan is to be left to right, right to left or both. This gives the ability, for example, to fade the left channel into the right channel from full volume to 50 per cent of the volume, giving the effect of panning from left to centre.

## Sampling theory

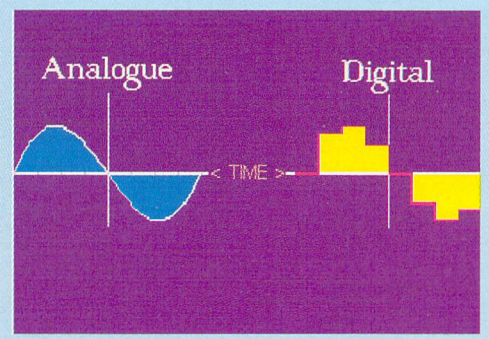
The hardware for a sound sampling cartridge performs a basically simple operation. Sound is an analogue thing. The computer is a digital device. The sound sampler merely converts from an analogue signal to a digital one. If a sound is imagined as a sine wave, the Analogue to Digital Converter (ADC) samples the wave at regular intervals, converts the value into a number, and sends that number to the ST.

As you can see, much information is lost between the analogue input and its conversion. In order to preserve the greatest amount of information, we must sample the incoming data as fast as possible. There is a theory which states that the rate of sampling should be twice the frequency of the highest input frequency.

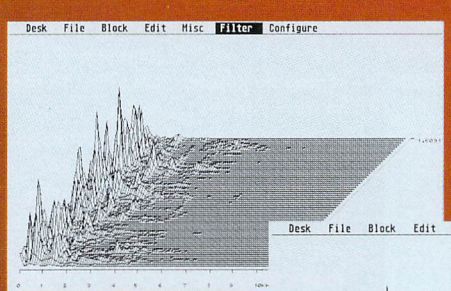
In an ideal world this would be quite simple – unfortunately there is a negative side to this. Every time the input is sampled, the software must store its reading. The majority of samplers available for the ST are 8-bit. This means that they store each reading as one byte (8-bits).

So if they were to sample once per second, a 30 second sample would only take 30 bytes. More realistic sampling rates are, however, likely to be 20,000 or more per second. This now means that the 30 second sample would take 600,000 bytes! This is more than the entire memory of a 520ST. A compromise must therefore be reached – maximum sampling rate against minimum memory.

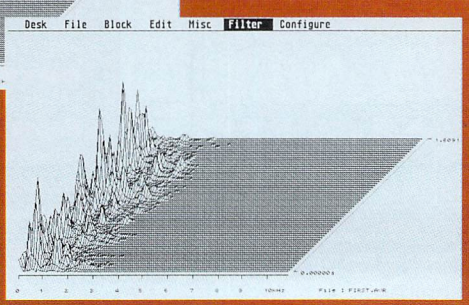
To give a simple comparison, a CD player uses 16–bit sampling – allowing values from -32768 to +32767 – rather than 8–bit, using values -128 to +127, at over 44KHz (44,000 samples per second). Remember that this is also in stereo, so there are two channels to deal with. This means a CD quality sample would take around 176K per second!




***The analogue sample on the left is represented by a sine wave. In reality the time-scale on the graph would be in thousandths of a second. At each time interval the analogue reading is taken and converted to its digital equivalent. This is represented by the right-hand graph***




***The fast filtering transform display can give a good indication of what frequencies require filtering out to clean up the sample...***




***...after filtering using the slow filter, the odd high frequencies have been removed entirely, leaving a richer, less "hissy" sample***

## The competition

At present there is no direct competition to Stereo Replay. The only other stereo sampler is from MPH, and was not available at the time of this review. Even if the sample editing software is used only for mono samples, it is still without any doubt the best software of its type available today.

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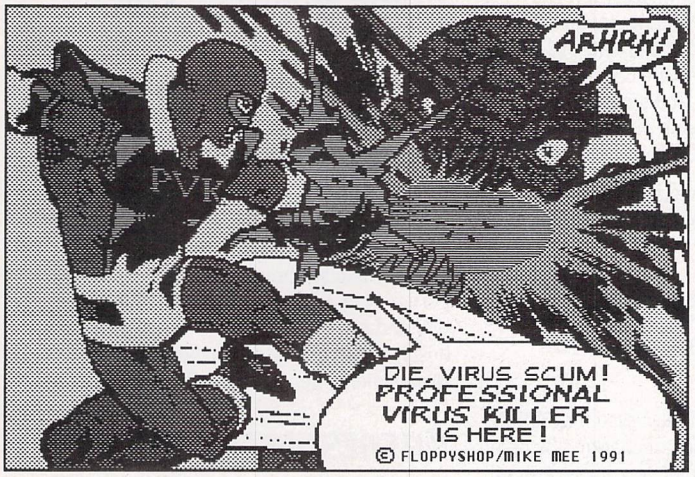


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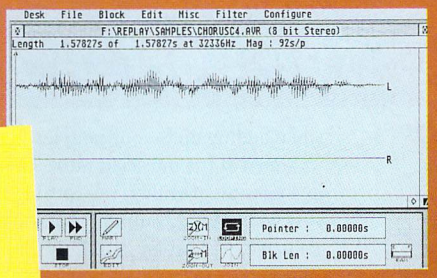
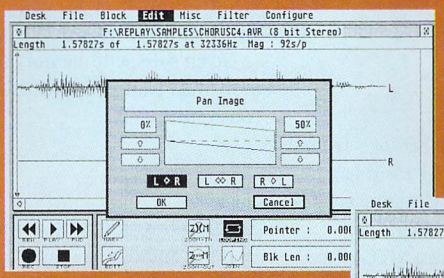



*This is a mono sample, converted to one channel of a stereo sample...*

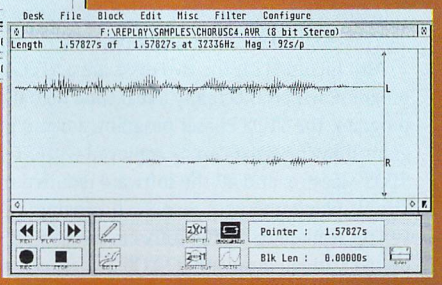
## Product Info

| Product | Supplier | Price |
|---|---|---|
| Daata Sound | Pandaal Marketing 0234 855666 | £39.95 |
| Master Sound II | Microdeal 0726 68020 | £39.95 |
| STOS Maestro+ | Mandarin 0625 859444 | £69.95* |
| Replay VIII | Microdeal 0726 68020 | £79.95 |
| Stereo Replay | Microdeal 0726 68020 | £89.95 |
| Replay Professional | Microdeal 0726 68020 | £129.95 |
| Pro-12 | A.V.R 0582 457348 | £245 |
| Pro-16 | A.V.R 0582 457348 | £350 |
| Audio Sculpture | SMG 0274 566155 | £49.95 |

* STOS Maestro is also available as a software only package at £24.99




*...then the left channel is panned 50 per cent over to the right...*




*...and the result – a sound that moves smoothly from the left to the middle*

# Daata Sound

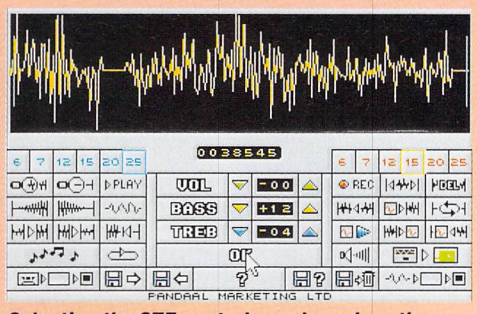
A new 8–bit budget sound sampler would have to be pretty good to elbow its way into the already crowded ST market. But Pandaal are giving it a try with Daata Sound.

It's packaged in a video-style box containing a "standard" size sampling cartridge, one double-sided disk and an A6 twenty page manual.

The cartridge contains, as on all except the Replay series, only one phono socket, which is connected to your sound source. The sampling software is provided in two configurations, one for low resolution colour, the other for monochrome monitors.

The screen layout of the software is of the familiar design. A graphic sampling window takes up the width of the screen and about one third of the height. Beneath this are a number of icons representing the available functions. The icons are all graphics only, making some of them a little difficult to guess at.

The manual is sufficient – just! As a budget sampler, the package is likely to be purchased by those who know little about sampling, and the manual makes no attempt to enlighten.




***Selecting the STE control panel overlays the main control panel with volume, treble and bass controls***

Each of the functions is given a one or two sentence description, there is a small Hints and Tips section, and a tutorial, which tells you which keys to press to record a sample, fade it in, then use it to produce a sequence.

The sequencer routine allows you to assign a number sample to a particular key from the numeric keypad. Thus, memory permitting, you can have 18 samples assigned. These samples can then be "recorded" into a sequence, and a "pitch bend" function allows the pitch of a recorded note to be adjusted.

So for example a single piano sound can be recorded and played over a full octave.

## Added extras

**A single sequence file was provided on the disk, containing a number of samples seemingly strung together at random. No other samples were provided, and no indication of how to include the samples in your own software.**

Unfortunately it does not allow semitones to be programmed, so it's white notes only please!

The sample editing functions are minimal. Using the two cursors, a section of sample can be identified, and this section can have a number of different functions performed upon it.

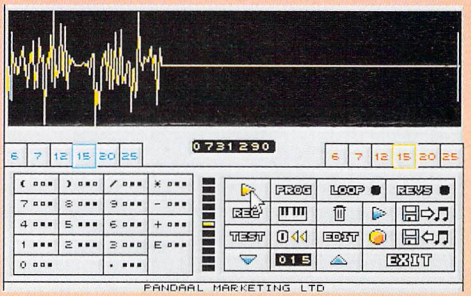
The graphic display can be zoomed in to allow more accurate positioning of the cursors, but zooming can only be performed once.

Fade in and out functions are provided, as are Echo, Amplify, Flip, Loop and Soften. None of the functions are user definable, so if you don't like the effect there's not a great deal you can do about it.

Parts of samples may be cut out, copied and pasted, and the buffer into which they are copied can be played. A function is also available to compress the sample by half. The sample replay speed then needs adjusting to half the speed.

The software is STE compatible, with STE owners having access to an extra control panel, allowing adjustment of the bass, treble and volume. This only seems to stay in effect while the panel is displayed – once the panel is closed output appears to revert to "standard" ST output, so the STE output could not be used with the sequencer.

The instructions for this section are confusing, as is the panel itself. To increase the volume, the down arrow must be clicked, which adjusts the number displayed between -40 and zero.

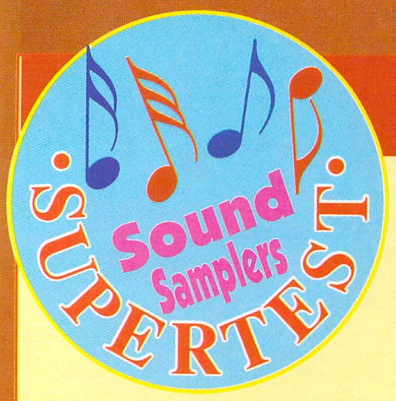



***The sequencer allows up to 18 samples each to be assigned to a key, and "recorded" into a sequence. Sequences can be Loaded and Saved, and Midi is supported, which makes recording somewhat easier for the musician***

## The competition

**At £39.95 Daata Sound is in direct competition with the identically priced MasterSound II, from Microdeal, which contains all the features of Daata Sound, plus many more.**

**At £69.95, STOS Maestro is somewhat more expensive, but may well appeal to STOS users who require samples in their programs. It is also available as a software-only option at £24.95, which may be sufficient if you have access to pre-recorded samples.**




# The best of the rest

## STOS Maestro

Aimed at the STOS programmer, the package can be purchased with or without a sampling cartridge. It contains a good number of effects, including echoes and reverb, and includes a low-pass filter.

Also included on the two disks are a STOS Disco program, which is actually a real time digital delay program, the STOS Phaser program, a demo program showing what can be achieved with STOS and STOS Maestro, and all the software required to add sample playing to your own STOS programs.

The availability of the software without the sampling cartridge means that STOS owners can add samples readily to their programs, as long as the samples can be obtained from elsewhere, such as PD Libraries. Source code is also provided for assembler.

## Replay Professional

With software in many ways similar to Replay 8, Replay Professional differs in one major respect – the cartridge samples in 8-bit resolution, but plays out at 12-bit. Although this may sound a little strange, it all becomes clear if samples are played together, for example using the improved drum sequencer which is included.

If two 8-bit samples are added, one bit is effectively lost from the resolution of each. So if the samples are first converted to 12-bit, nothing is lost when adding up to four samples.

Aimed at the musician rather than the hobbyist or games programmer, the cartridge can give some very good quality output. Additional filtering is available over Replay 8, and the drum machine allows four voices simultaneously. Also included in the package is the MidiPlay software, which allows you to assign up to 128 samples to individual or ranges of keys on your Midi keyboard.

Given sufficient memory (and patience!) 128 individual piano samples could be assigned to 128 consecutive notes!

## Pro-Series 12

Aimed at the professional musician, this sampler is 12-bit in and out, giving access to far higher quality samples than any of the Replay series. The software is still very similar to the Replay Professional version.

## Pro-Series 16

This top of the range 16-bit sampler gives you access to the best sampled sound available. The software used is almost identical to that used in Stereo Replay – indeed Stereo Replay can actually load in 16-bit samples and convert them to 8-bit, while Pro-16 can do the opposite, if necessary.

The quality available using Pro-16 is certainly ample for most musicians – indeed the software for this and other AVR samplers has been used to produce demo tapes by a number of bands.

## Replay 8

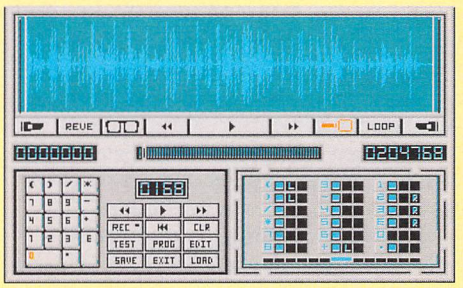
Running in medium or high resolution, the Replay 8 software takes the "standard" approach of having a fixed sample window at the top of the screen, with buttons available below for accessing the various functions. Gem drop down menus are also available, and the software has a very professional look to it. The package includes source code for playing samples in your own programs, and a drum machine program.

The sampling cartridge contains both mono input and output, giving the package the ability to use much higher frequencies than the majority of other samplers – though over 32KHz the sound must be directed through the cartridge. Currently only £10 less than Stereo Replay, however, it contains nothing that its Stereo cousin doesn't.

## MasterSound II

Although similar in many ways to Daata Sound, MasterSound II contains more features, and has a more professional feel to it. Source code is included for using samples from within all the popular Basics.

A good budget sampler and ideal as your first introduction to the pleasures of sampling, it has most of the features of other more expensive packages. A demo program is included, allowing you to load in a sequence and picture file – the music is then played over the picture. Its only real disadvantage is that it only works in low resolution colour.




***The MasterSound sequencer control panel. It functions in a similar way to Daata Sound, but the layout is less confused***

# Audio Sculpture

***You're probably wondering what Audio Sculpture is doing in a review of sound samplers – surely it's a Tracker program? Well, yes it is a tracker program, but it's also a sampler, and much more***

Several versions of Audio Sculpture have been available in the Public Domain for some time, and the imminent release of the commercial version has been eagerly awaited.

This version comes on two disks, one containing the software, the other example modules and source code for GFA, STOS and Assembler programmers. Also provided is a 32 page glossy A5 manual and an Audio Sculpture badge!

If you are like the majority of computer owners, you will ignore the manual and simply boot the disk. A graphic intro display – surprisingly silent – is as good as many PD demos available. Pressing the spacebar enters the program.

The basics of the program act in a very similar way to many other Tracker programs available on the ST and Amiga. If you've used TCB Tracker – and if you haven't, you can by getting hold of the July issue of *Atari ST User* – then the major functions will look familiar. Once you start using the program, however, you'll realise how much more it has to offer.

## Putting you write off

Before going any further, I must point out that the manual for Audio Sculpture is among the worst I have ever seen – and I have seen some pretty rough ones! Although printed on high quality paper in a format quite pleasing to the eye, it does give the impression of being laid out by someone trying their first hand at a DTP package!

The layout could, perhaps, be forgiven if the content was up to the quality of the software. Unfortunately it's not. Why oh why do people insist on writing manuals in a foreign language? Oh, and a bit of punctuation wouldn't go amiss either!

Now, on to the good news. Audio Sculpture as a program seems to perform excellently. Tunes can be recorded using either the ST or a Midi keyboard. The Midi keyboard, while successful, had a habit of ➤

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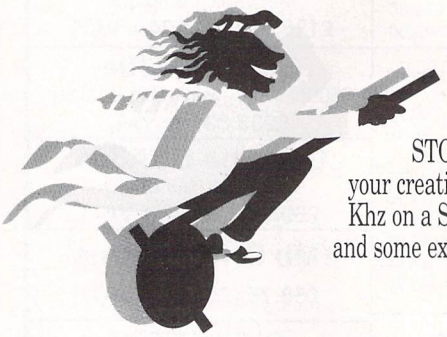

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**Both the screen layout and the file selector are reminiscent of other Tracker programs, though Audio Sculpture does have more features than the opposition. Here the program is playing one of the demo modules, Hymn**

dropping the occasional note, but was still usable.

There is an option to provide Midi out, which should allow each of the four tracker tracks to a different Midi channel. Unfortunately I was unable to get this to work during the review, though the fault could well be in my Midi setup, as data was being transmitted by Sculpture.

The sound output can be directed in a number of different directions, which should suit almost any setup. Currently supported are the standard ST sound chip, the ST Replay Cartridge, both the Replay Cartridge and the sound chip for stereo, both the Replay Cartridge and the printer for stereo, the printer port, Monster Stereo cartridge, the Stereo Replay cartridge, Replay Professional cartridge, the MV16 cartridge (as provided with the BAT game), the STE/TT DMA chip (in two modes, one allowing better quality but loss of some functions) and finally an STE 16-bit output, which requires a hardware modification to your STE.

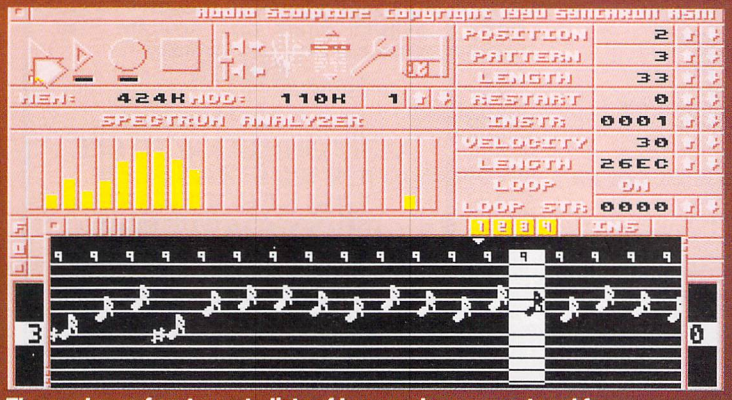
The four channels of music are represented by columns of Ascii characters and hexadecimal numbers. Each digit has a particular meaning. In this case the first three characters show the note. So C#1 is a C sharp in octave one.

Unfortunately even the musical scale loses something in translation, so there is no note of B, instead it is H. The next two characters represent the sample number in hex. The next three numbers affect the sample by applying a special effect. As an example, C#101C40 plays a C sharp, in octave one, on sample one, at a volume of 40, which is the maximum (the "C" is the special effect for altering the volume).

## Features

The range of effects which can be performed on the samples within Sculpture are excellent. Arpeggio, Portamento, Vibrato, Tremelo and Volume control are all supported.

Many people, of course, would prefer to be able to look at their music in a more conventional manner – on a musical score. This is possible with Audio Sculpture simply by pressing the Esc key. The score from any of the four tracks can be displayed, with the instrument number for each note displayed above it.



**Those who prefer staves to lists of hex numbers are catered for, though the editing facilities are not as good as Quartet**

The notes can be input from here, though only by "playing" the ST or Midi keyboard, not through using the mouse. It would be nice to see better editing facilities here.

Other features include the ability to "tune" the program in a similar way to many synthesisers. This means if you want to play along and find your guitar is slightly off key with your ST, just alter Sculpture's tuning to agree with your guitar.

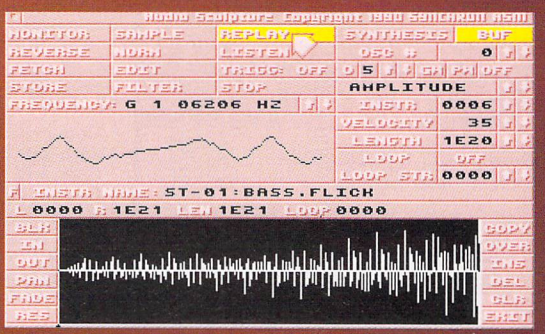
Regular users of Tracker software almost invariably suffer from Lost Sample Syndrome. You've created a great song, you save it, then you can't find the sample you used for that great bass sound!

Audio Sculpture goes some way toward preventing this problem, by keeping track of not only the name of the sample used, but also the name of the disk from which it was loaded.

## Getting your sounds in

What puts Audio Sculpture head and shoulders above the competition is its ability not only to edit samples loaded from disk, but to actually allow samples to be taken directly from a cartridge.

The sample itself is displayed in a window. Blocks can be marked by clicking with either mouse button, and editing then affects only the marked portion. This marked portion can be zoomed in on, so that it fills the entire window, and this process may be repeated until the maximum resolution is reached.




**The sampling section of the software is more complete than some budget sample-dedicated software. Here a sample has been extracted from one of the supplied modules and reversed, making a whole new sound**

Samples can be edited directly from Tracker modules, loaded and saved independently, or sampled using either the ST Replay, STOS or MasterSound cartridges.

This has one obvious advantage – a required sample can be made and immediately incorporated into your module. If it doesn't sound quite right, it can simply be sampled again, without leaving the program.

Loop positions can be set to create never ending sounds, and there is an option to snap the loop point to the nearest zero amplitude position which helps avoid clicks. Portions of samples may be reversed, and the volume adjusted either manually, or automatically made as loud as possible without clipping. The sample can even be directly edited using the mouse on the edit window to draw the waveform!

Filtering is available to remove high frequencies, and there is a trigger function which starts sampling as soon as the required volume is reached. There is even a chord function, which allows you to take, for example, a single piano note sample, and turn it into a chord by overlaying the same sample after shifting frequency. Blocks can be cut, copied and pasted, and overlaid to produce echo effects and so on.

A Synthesis option allows you to design up to eight oscillators which may be combined to produce your own sounds. Input to the synths may be either in the form of a sine wave, a sawtooth wave or a square wave, or you may select part of a sample as the input wave-form.

## Does it measure up?

Audio sculpture is an excellent piece of software. The number of features is far higher than any comparable package, and it does mean that this could be the only package of its type you require.

Software Management Group, distributors of the package, told me an updated manual may be provided, which would be free to registered users.

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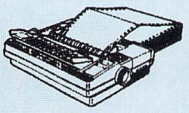

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# Aspects

## of the Atari ST

*Atari ST User brings you seven special pages devoted to your very own favourite ST subjects. There's something for everyone – every month.*


**MIDI AND MUSIC** **PAGE 136**

*Musician's dream or computer user's nightmare? Ian Waugh tries to keep in sync with Dr T's sequencer*

**EDUCATION** **PAGE 149**

*A new education software house is committed to quality AND low prices. You don't believe it? Pat Winstanley has news for you*

**COMMUNICATIONS** **PAGE 141**

*Taking your first steps in comms? With Eddie McKendrick as your guide you've nothing to fear. . . well, not much, anyway*

**EMULATION** **PAGE 143**

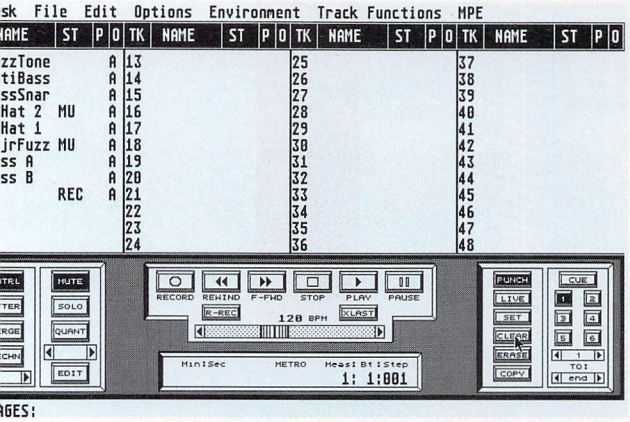
*The Mac learns to read ST disks. Gunter also gives you a sneak preview of some new emulation hardware*

**DESKTOP PUBLISHING** **PAGE 145**

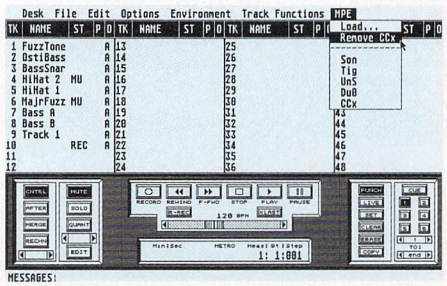
*Is FSMGDOS good for you? What do you do if your mouse goes mickey? What's the meaning of life? Charles Michael answers*

**BUSINESS** **PAGE 147**

*Phil Trory has severe misgivings about a get rich quick idea. Also, news from a real live business user and help with sales*




**KCS record screen**




**KCS record screen showing the modules loaded in the MPE**

# Oh my

Oh My Omega! After last month's overview of Dr.T's Omega bundle, this month we'll look at the parts which make up the whole. The main program is KCS (Keyboard Controlled Sequencer), Dr.T's premier sequencer, which has now reached version 4.0.

It boasts a very high clock resolution – 384 ppqn – and with some additional hardware you can access 32 or 64 Midi channels and sync it to the Fostex R8 multitrack recorder. The sequencer has 48 tracks and in Open mode you can create up to 128 sequences which you can play back at the same time.

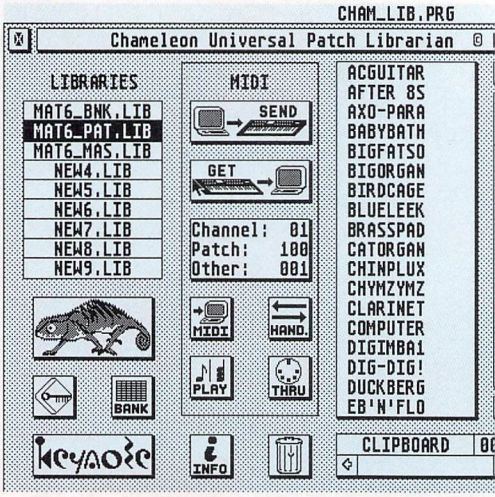
It has the usual assortment of editing functions although some of these can be rather numeric. It also has several powerful processing features such as the ability to scale velocity and scale and invert durations. It can invert pitch, too, and reverse the note order so that a tune plays backwards. Try this with jazz, drum patterns and Bach.

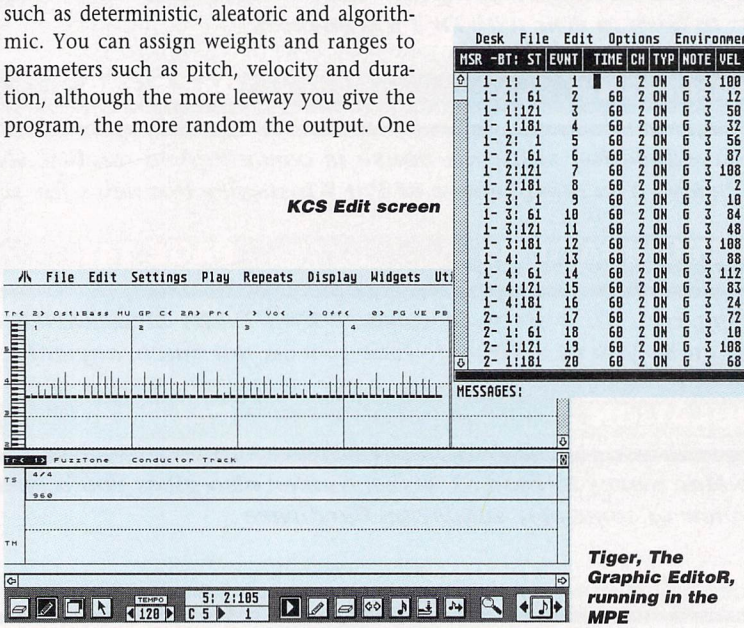
## KCS Level II

KCS Level II is KCS v4.0 with a few extra features. It uses more memory than v4, so you only need boot it when you want to use the extras. It supports polyphonic aftertouch and includes a Master Editor which can perform six functions. Some of these are very interesting. You can mix data, arpeggiate chords, copy and thin out controller data, scale the tempo and map a note on to another.

But Level II's main claim to fame is the PVG (Programmable Variations Generator). This is a fairly complex random note generator, although the manual prefers to use words such as deterministic, aleatoric and algorithmic. You can assign weights and ranges to parameters such as pitch, velocity and duration, although the more leeway you give the program, the more random the output. One particularly interesting function, In Between, creates a sequence which is "in between" that of two other sequences. Another, Ornaments, adds "little" notes to existing notes. This is fascinating stuff but the manual isn't particularly helpful. It tells you what the functions do but not how to use them. Shame, but experimenters will love it.

The other parts of the package are The Graphic Song Editor, Tiger and Quickscore. All can run as stand-alone programs or from




**KCS Edit screen**

**Tiger, The Graphic EditoR, running in the MPE**

# News Round-up

Attendance figures for this year's IMS (International Music Show), which we reported on last month, have just been published. They were considerably down on last year's figures – 4997 trade (5954 in 1990) and 13151 public (18762 in 1990) attendances.

*Education Day saw the worst fall from 2000 in 1990 down to 725, although the decision to charge admittance this year may have been a contributory factor. However, the music industry has been weathering the recession well and many exhibitors reported good business.*

Steinberg have bundled a top–level sequencer, Cubase, with the Midex Plus hardware to make the StudioPac. Midex offers SMPTE sync, four discrete Midi output ports giving a total of 80 Midi channels, two extra Midi Ins and four dongle expansion slots. The package also includes a utility disc containing a Fostex link utility and Microgroove patterns. The StudioPac cost £645 including VAT. More from Evenlode Soundworks on 0993 898484.

*Take Control and Titan Designs, developers of Music DTP (now into version 2) and high resolution graphic cards for the ST, have moved, to Institute of Research & Development, University of Birmingham Research Park, Vincent Drive, Birmingham, B15 2SQ. Tel: 021-415 4155.*

Dr.T's X-oR, the Universal System Exclusive Orchestrator – an editor and librarian to the rest of us – has been upgraded and now supports over a hundred instruments produced by over 20 manufacturers.

The distributors, Zone Distribution, have also taken on the Midiman range of products. These include the Fineline 24–channel 1U line mixer, SMPTE units, a 2–In/8–Out switchable Midi Thru box and quick release rack screws. More from Zone on 081–766 6564.

Hybrid Arts, the American software company which produces the much–respected Edit–Track and SMPTE–Track sequencers as well as other ST music software and hardware, has acquired a new UK distributor after being without one for two years. Support was previously handled by the European branch in German but now UK users and potential buyers can contact: Atlantic Audio, 9 Wharf Road, Gillingham, Kent, ME7 1NW.

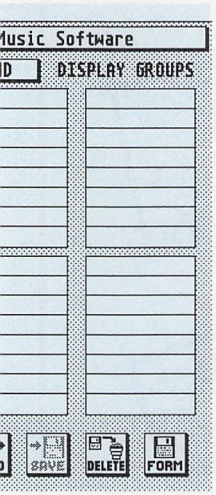
## Destination Jarre

Any Jean–Michel Jarre fans in ST music land? The Destination Jarre fanzine, now in its second year, is full of facts, figures and information about the man and his music.

Issue five is an extremely well–produced 20–page magazine. It contains a busy letters section, a review of the Mexico concert, a Zoolook review and article, information about Jarre's wife, Charlotte Rampling, and his father, composer Maurice Jarre. There's also a small ads section, a competition and the results of a readership survey.

The most popular Jarre album seems to be Zoolook although Rendezvous 4 is the most popular track. Destination Jarre is produced quarterly and costs £8 for a four–issue subscription (£10 in the EEC and £12 elsewhere). Excellent value for Jarre fans. More from co–editor Graham Needham at 75 Lavernock Road, Penarth, South Glamorgan, CF6 2NY.

# Omega




***A selection of Stiletto Oberheim Matrix 6 Pro-Sound voices in Chameleon***

within the MPE (Multi Program Environment) which we looked at last month.

Operating the Graphic Song Editor can appear a little fiddly – tracks must be copied from KCS to the Sequencer and then drawn into the Song Editor. Once they're there, however, you can manipulate them in all manner of ways – change their length, velocity, position and so on. You can even give sections of the music a percentage change of playing – very useful with drum tracks.

Tiger (The Interactive Graphic EditoR) displays music data in graphic form – notes, controller information, volume, velocity and so on – and lets you edit it by drawing on the screen with the mouse. This is really good – you can loop a section while you edit it. The manual is well written and includes a section called Guided Tour to get you started quickly.

Finally, Quickscore is a cut–down version of Dr.T's Copyist, although it lacks any form of on–stave editing and you can't add text, music symbols or lyrics to the score. You do have control over certain display options, however, and with a little judicious editing, you can produce good–looking scores.

Although it can run as a stand–alone program, it's far better running within the MPE, as it lets you flip from data to score fairly quickly. The drawing routines, however, are very slow – it can easily take 30 seconds or a minute to draw a multi–stave score. But if you can wait to check the appearance, the printed output is very good.

The programs which make up Omega give you a very powerful set of music tools. KCS isn't the most intuitive sequencer and has a few idiosyncrasies, such as insisting you record on consecutive tracks and only allowing you to change the Midi channel on which the track transmits from the Edit page.

The other programs have their strengths and weaknesses, too. The modular aspect of the programs lets you use only those functions which you need, although if you're thinking seriously about this package, think seriously too about upgrading your ram to two megabytes or more.

While the package is good value for money, it may be rather too complex for the newcomer to sequencing, although I know several musicians who think KCS is the best thing since moulded plugs on Midi cables.

If you are a computer person first and a musician second, it could be right up your street.

Dr. T's Omega costs £299. More from Zone Distribution, 5 Abbeville Road, London, SW4. Tel: 081–766 6564.

## Off the shelf sounds!

Spike your library with Stiletto Pro-Sounds. If you're not into fiddling with partials, operators, elements or any of the other component parts of synthesiser voice architecture, you need off–the–shelf sounds. Fortunately there are lots to choose from. Unfortunately, many cost £30 to £50 or more.

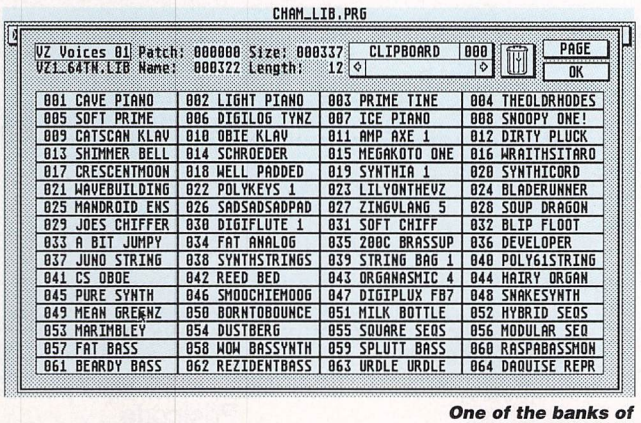
Stiletto have been supplying musicians and studios with sounds since 1987. They are developed in–house by professional programmers and musicians and the current list caters for over a dozen instruments including the Casio CZ, Ensoniq ESQ and Mirage, Kawai K1, Roland D10/20/110 and Yamaha DX7/TX7, TX81Z and DX100/21/27/FB01.

Each set contains between 64 and 160 sounds and all are very nicely priced at between £7.50 and £15.The three latest releases are Pro–Sounds for the Casio VZ (128 sounds, 128 operations), Cheetah MS6 (96 sounds) and the Oberheim Matrix 6/1000 (100 sounds).

The VZ sounds will be of particular interest to anyone with a VZ machine as it is not the easiest beast in the world to program. Stiletto are quite proud of the sounds – and rightly so. The new disks are £15 each and all disks come with a free Chameleon demo.

This is a universal patch librarian and my second most essential piece of music software – after Notator.

Buy them before the price goes up...More from Stiletto, 15 Galloway Street, Dumfries, DG2 7TL. Tel: 0387 50748.

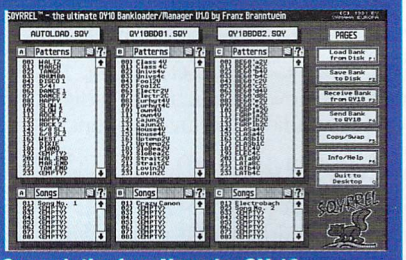



***One of the banks of Stiletto Pro-Sound Casio VZ voices in Chameleon***

## Free music software from Yamaha

*The QY–10 is one of Yamaha's latest musical gizmos. Nicknamed the Walkstation, it's a 28–note polyphonic, eight–part multi–timbral, 30–voice synthesiser with a 26–part drum kit, 76 built–in accompaniments and a eight track sequencer. The surprising thing is – it's only the size of a video cassette! It even has its own mini keyboard. All this for £249!*

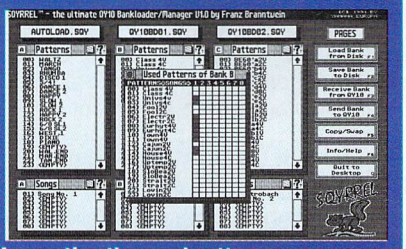
*If you have one of these miraculous*




***Sqyrrel, the free Yamaha QY-10 Manager main screen***

*devices, tell those awfully nice people at Yamaha and they will send you free, gratis and for nothing, a wonderful Bank Loader/Manager called Sqyrrel.*

*There are copy and swap options to help you organise the patterns and you can sort and print them, too. As well as offering an easy method of controlling your QY–10, the disk contains five banks*

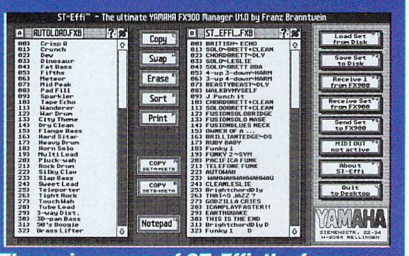



***Inspecting the used patterns of a bank in Sqyrrel***

*of new patterns. The disk also contains a program called ST–Effi, a manager for the Yamaha FX900 effects unit, complete with a new bank of settings.*

*The programs are of German origin and the cassette inlay is in German but don't worry – there is plenty of on–line help in English. The programs are well designed and very easy to use.*

*They come in a neat disk carry box, too. More from Yamaha Kemble Music (UK) Ltd., Sherbourne Drive, Tilbrook, Milton Keynes, MK7 8BL. Tel: 0908 366700.*




***The main screen of ST–Effi, the free Yamaha FX900 Manager***

***Is Dr T's sequencer a musician's dream or a computer user's nightmare - both? Read further...***

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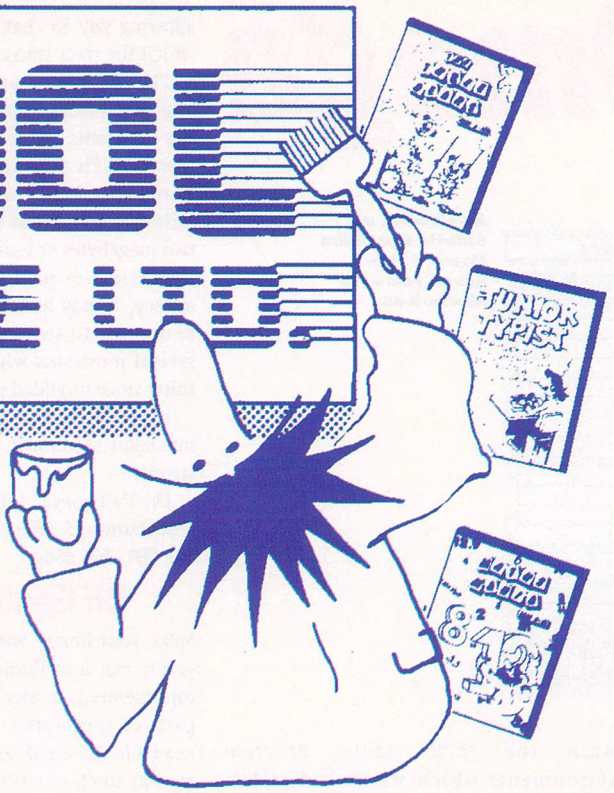


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# Rainbow's warriors

*Pat Winstan looks at two promising releases from new software house*

A brand new educational software producer hits the scene this month, and the results aren't at all bad. Rainbow Education is an offshoot of Exeter Software (tel:0392 77369/413104) and has been inspired by the success and accreditation of the Fun School series.

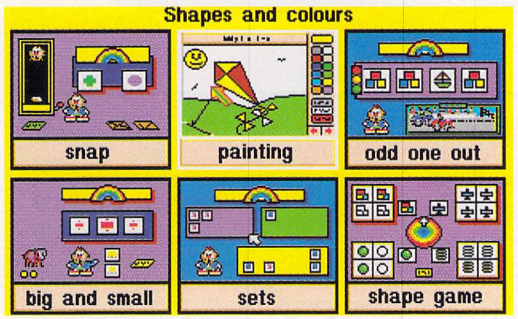
However this new label, according to its mentor Trevor Bruce, wants to bring the price of educational software down to budget levels while still providing the same high standards. Intended releases cover both pre-school and primary ages with maths, English and science as the topics.

## Shapes & Colours £7.99

**Pre-school**

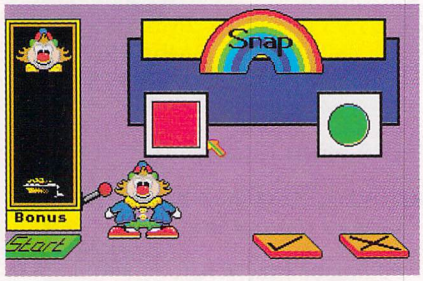
Aimed at under-5s, this package consists of six programs and claims to "prepare for the National Curriculum". Now it strikes me that virtually any learning achieved by this age group prepares for the NC in some form, simply because children hitting school for the first time are taught from scratch anyway to accommodate different family backgrounds and four to five year old attainment levels.

Thus all skills, be they tying shoelaces or reciting the alphabet, add to the learning-from-life which is what most four to five year olds do best. However, as a fun and reinforcement program, Shapes & Colours certainly does its job.



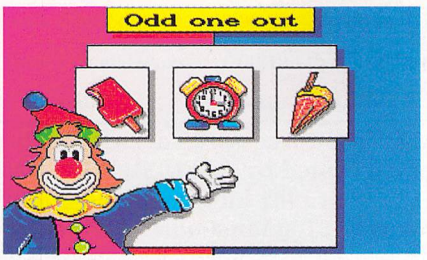

Throughout the package, Bobby the Clown is on hand to help the kids – and receive the typical custard-pie accolade when they beat the system.

Included in the pack is a "colouring book" which offers a variety of line drawings to be attacked. Unfortunately the palette is rather restricted - more an adult shading selection than the primary and secondary colours that kids are more conversant with.




Given that, there are six different pictures for the child to colour, and all control is by mouse – perhaps a little tricky for two to three year-olds, but fine for slightly older children. One snag is that while pictures retain their colours during a session, there doesn't seem to be any way of saving the creations to disk or printing them out for posterity. Next comes Sets, where a rag-bag of jumbled objects is offered for the child to sort into two like groups. Each screen achieved adds a piece to a jigsaw, later revealed as a whole to be one of those "Mousetrap" like contraptions which sends balls over obstacles culminating in a bucket of cold water waking Bobby the Clown.

Odd One Out has a fruit machine theme where the child spins reels then clicks on the oddball. If correct, his or her car moves forward, and if wrong the (computer) opponents does – the idea being to win the race.




Big and Small is rather similar to the previous task with three objects shown at a time. Bobby the Clown points to either the big or small box and the child must choose the object which matches his question. A correct answer adds a coin to Bobby's piggy bank, and when he's saved enough the clown buys – and messily eats – an ice cream.

The last selection, Shape Game, while fun, really doesn't seem to have any purpose for education. Each player picks a type of counter with its own picture. The computer then spins a dial which ends up pointing to one of the player's counters. This player has his or her board area filled by one each time a counter is picked. The aim of the game is to be the first to collect four counters.

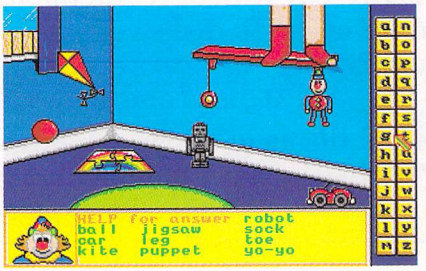
Unfortunately absolutely no skill is required on the part of a player. Perhaps allowing a player to spin after answering a question of some sort would be more useful. This would then combine both luck and skill since the spinner might choose someone else's counter by accident, and would help teach a child to cope with disappointment at an age where gaming rules and learning to lose gracefully are important.

## First Letters £7.99

**Pre-school (but 5-7s will benefit too)**

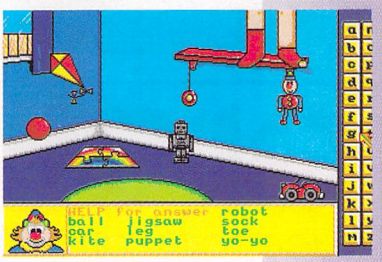
This program is intended to introduce children to "phonetically hard letters" and works on a sort of reverse I-spy principle. The setting is a home complete with garden and garage consisting of twelve separate screens. Each screen contains ten objects which animate in turn.

The child's task is to work out the first letter of the animated object then choose that letter from an onscreen alphabet. The keyboard can also be used, which is handy for slightly older children coming to grips with both upper case letters and the qwerty system.




Graphics are bold and – usually – clear. Animation of inanimate objects such as apples and mugs is beautifully done and highly imaginative and amusing at times, such as a monkey – I think – playing a violin from behind. Some objects, though, defy identification without the use of an included room by room word list both in the instructions and onscreen via use of the Help key.

If a wrong guess is made, the correct letter flashes onscreen, but its associated word is only given when a correct answer is made. For small children a great deal of adult help will be needed and the program will be used more as an animated ABC book. Older children, right through to junior age, will also find something for them.




It's a shame that an option hasn't been incorporated to allow older children to try spelling the word rather than simply picking the first letter. This would give the advantage of extending the useful life of the program, and really shouldn't be all that difficult to achieve.

## Conclusion

So have they succeeded in their aims? So far just these two packages have been released, with another two due by the time you read this. Judging by the first batch they are certainly worthy of consideration, but a few snags need to be ironed out before they achieve the polish to challenge the chart toppers.

All in all, a worthy attempt to help out families both by educating the brood and keeping the bank balance happy. I'm sure that with parental feedback, Rainbow Education will work on teething troubles and incorporate improvements in their future releases to become a force to be reckoned with in the ST and Amiga educational market .

### Fun School 4

*The latest in this excellent series is due out soon, and from a sneak preview I can tell you that it looks every bit as good as its predecessors - full review shortly.*

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# Get online

*Eddie McKendrick takes his fir tentative st into comms*

The initial port of call for most people venturing into the wide world of comms is a local bulletin board. These services are typically housed on home computers and contain text messages and a library of files.

The messages can be about any subject that the person running the board, referred to as the sysop, sees fit. Similarly, the online files library can span as many categories as he has space, or time, for.

Some boards devote themselves entirely to special interest groups, such as religious organisations or charities.

Others may provide special closed user groups (CUGs) to cater for these minority interests.

## The sysop set-up

Bulletin boards are a labour of love for their operators and it is rare for a charge to be made for providing the service.Understandably perhaps, some people find it difficult to comprehend why sysops tie up their computer and modem, not to mention hard disks and the like, just to provide a system for other people to call. There is no easy answer to that question, but more and more people are setting up boards, so there is a definite attraction.

Most bulletin boards conform to a uniform serial communications format, making it easy to switch between the many services available.

The usual serial communications settings required to take advantage of BBS services is 8-N-1. We will explain these settings in a more detailed look at the nuts and bolts of comms over the next few months. For the moment it is enough to set your communications software's serial parameter settings to eight data bits, no parity one stop bit. You should also find out the maximum speed of your modem and set the baud rate accordingly.

Most BBS in the UK cope with speeds from 300 baud up to 2400. There are some that will cope with much higher speeds, but most sysops cannot stretch their budget to mega fast modems to receive your call.

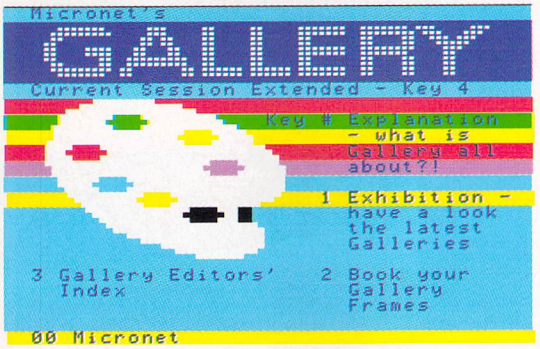
## The faster they come

It is worth remembering that no matter how fast your modem, the board can only respond as fast as the maximum speed of its own modem.

After getting the settings side of things organised. it is time to "make that call". Most good comms packages for the ST include a phone book utility, allowing numbers to be stored for simple auto-dial access.

It is well worth inputting board details into a directory if your software has one, rather than just using the ATD command.

If you are using a phone book for example, the dialler software will cope with numbers that are engaged by pausing for a defined period of time and then automatically re-calling for you. It's a lot less tedious than having to issue dial commands manually to the modem each time until the line becomes free.




After sending the dial instruction via the comms software there should be immediate activity from your modem lights. Most modern modems also have a built in speaker which allows you to track the progress of your call audibly. Hopefully within a few seconds you should be online. If you're not then something simple has probably gone wrong.

## Don't panic!

If it doesn't work straight away, don't get frustrated, just check the following...

If your modem fails to respond to the dial instruction, check to ensure that the serial cable between the computer and the modem is connected.

If the modem lights flicker but you cannot hear a dial tone, check that the modem is connected to the telephone socket.

If your modem doesn't have a speaker, simply plug a telephone into it and pick up the handset. No dial tone means your modem is not connected to the line.

Should you get a dial tone and hear the modem sending a series of beeps down the line, but no dialling taking place, it means that you are on an old pulse dial exchange.

Locate the dial prefix section within your software's modem set-up screen and set this to ATDP, then try again.

If you can dial out but not get a connection and simply hear the other modem making noises of different frequencies - called carrier tones - you have probably set your speed wrongly.

Each frequency relates to a different baud rate. The modem at the BBS end will first try its lowest speed – usually 300 baud – and then work its way up to the maximum. Your modem will wait until it recognises the tone for the baud rate it is set for.

If your modem fails to latch on to the host modem's carrier this means that it did not hear the tone it was waiting for. This is usually because the speed setting at your end is too high. Reduce your baud rate setting and try again.

## Registration

After coaxing your modem to talk in a civilised manner to the BBS things become more straightforward, and fun! Your initial connection to any new BBS will probably involve some sort of registration procedure.

The BBS software will ask you a series of questions and your answers. Let the sysop know who you are and where you are calling from. You will also be asked to select a secret password. This will be used by you to gain access on all your subsequent calls, so it is important that you pay attention to the onscreen instructions.

There are a few simple tips to bear in mind when registering on any BBS. First and foremost always be honest! If you give false details everything may seem OK, but clever BBS packages have a habit of randomly asking you to verify a particular detail before you are granted access. What was that false date of birth you gave again?

## Getting personal

The next unwritten rule is to never give away masses of personal information. Some sysops are just plain nosy. A name and address is fine, as is a phone number or your date of birth.

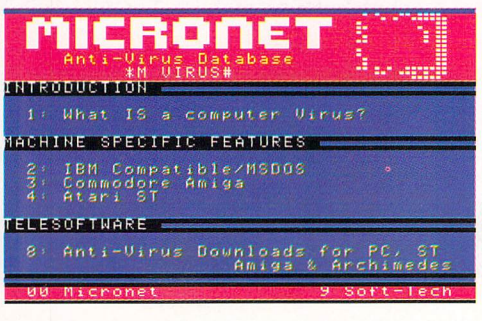
Never be tempted to give in to requests for credit card numbers or any very personal information that you would normally refuse to tell a stranger. Be especially wary of innocent questions like: "What other BBS's do you use?".

Many people get into the bad habit of using the same password for all boards they call. Make sure you don't.

In the unlikely event that a sysop is less than honest, he could start to use your accounts on other boards. It doesn't happen often – but it does happen.

To start at least, you must remember that the sysop is a stranger. He is not official, just another person like you who happens to run a board.

Given time he may become a good friend. But it does take time.



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# I wanna' be...

**The Apple Macintosh learns to read ST disks, and sneak previews of exciting new emulation hardware**

One of the most marvellous features of the Spectre GCR Macintosh emulator is its ability to read, write and format Mac disks in an ordinary Atari disk drive.

This is no mean feat, for although the two types of floppies are of identical 3.5in size, Apple use a completely different, variable-speed disk controller in their machines. Once in Mac mode, however, your drive will no longer be able to read ST disks, and it is completely impossible, of course, to read Mac disks while running under Tos.

This poses a dilemma for all those Spectre users who wish to transfer ST files to Macintosh applications and vice versa. To solve this, Gadgets by Small have included the Transverter utility.

Transverter works very well, but it can be cumbersome to use. For a start, you need MFS-formatted floppies or a separate MFS hard disk partition to make it work, and files can only be "transverted" one by one. An alternative provided by Version 3.0 of the Spectre software is to use the Apple File Exchange, but this works only with Dos format disks and is even more tedious to use.

How much easier life would be if the Mac could be taught to read ST disks directly – not only for Spectre owners but also for those of us who would like to take their files back to Mac-infested workplaces!

## DOSReaDA

And now the good news: it *is* possible after all, thanks to a desk accessory, cleverly named DOSReaDA. Intended mainly as an alternative to the Apple File Exchange and DOSMounter for Mac and PC users, the author has also provided for Atari ST owners – probably the only commercial Mac program to acknowledge the existence of the ST! It works like this:

Once installed as an accessory using the infamous Font/DA Mover, DOSReaDA is instantly available from either the Finder or from within any Mac application. Just click on its Apple menu entry and when the DOSReaDA file selector window appears, shove your ST disk in to the drive.

My eyes nearly popped out when I saw the directory of my common-or-garden ST disk, especially since the manual had warned that the utility will not work with MacPlusses but only the high-density "SuperDrives". Yet another complement to Dave Small's incredible emulator.

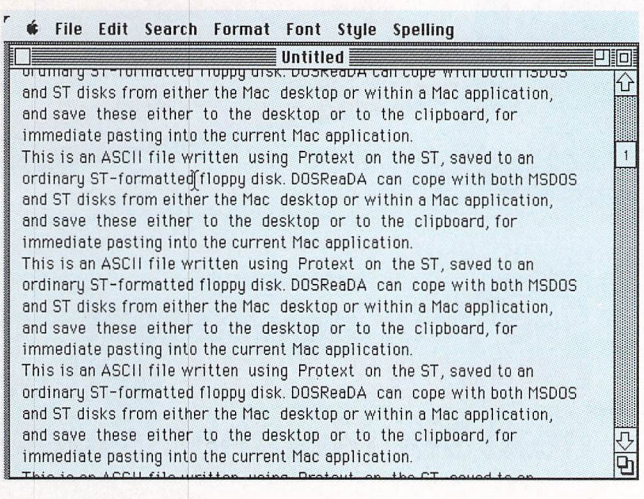
You then have the choice of copying a file to the Desktop as a disk file, or to the clipboard for direct pasting into an open Mac application. The default setting is for text files, but with the Text option disabled it is equally possible to transfer other files – I tried it with TIFF greyscale pictures created by Retouche Professional.

Remember, though, that the Mac operating system will not immediately know the type of file thus imported, so you need to go into ResEdit to change the file information to – in this case – "TIFF", for Mac software to be able to identify and load the data. In other words, copy anything but text files to the Desktop first.

DOSReaDA has its limitations. It cannot write ST disks, it does not work with hard disk partitions, and it handles only double-sided floppies in standard Gem format. Even NeoDesk-formatted disks will lead to erratic functioning, and non-standard formats are definitely out.

But it can be very convenient indeed, when you suddenly realise that you need an ST file and cannot bear quitting Spectre, rebooting and going through the Transverter procedures, to be able to access your Atari floppies so painlessly. At a price of £29 including VAT it represents extremely good value.

The accessory is available from MacLine at Wren House, Sutton Court Road, Sutton, Surrey, SM1 4TL. Tel. 081-643 4626.




**MacWrite had no problems with a Protext Ascii file pasted into "Unnamed" from the clipboard**

## Troika

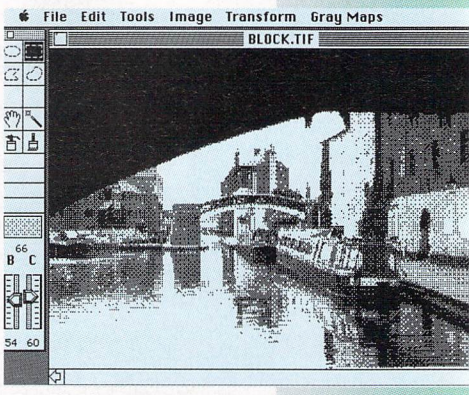
The ultimate solution for emulation addicts has been announced by German company Beta Systems, manufacturers of the SuperCharger Dos emulator. The "Troika Workstation" is a neat tower-housed version of the ST incorporating both Macintosh (presumably Spectre GCR) and PC-AT (definitely SuperCharger SC-plus), as well as 3.5in and 5.25in floppies, a 105Mb SCSI hard disk and a multisync monitor. A 16MHz option is also available for the ST and Mac modes.

No details of price and availability yet, but watch these pages.

## 386 barrier broken

It had to happen sooner or later: the first Dos emulator based on the Intel 386 processor is out. Vortex moved one step ahead in the emulation arms race by announcing ATonce-386SX.

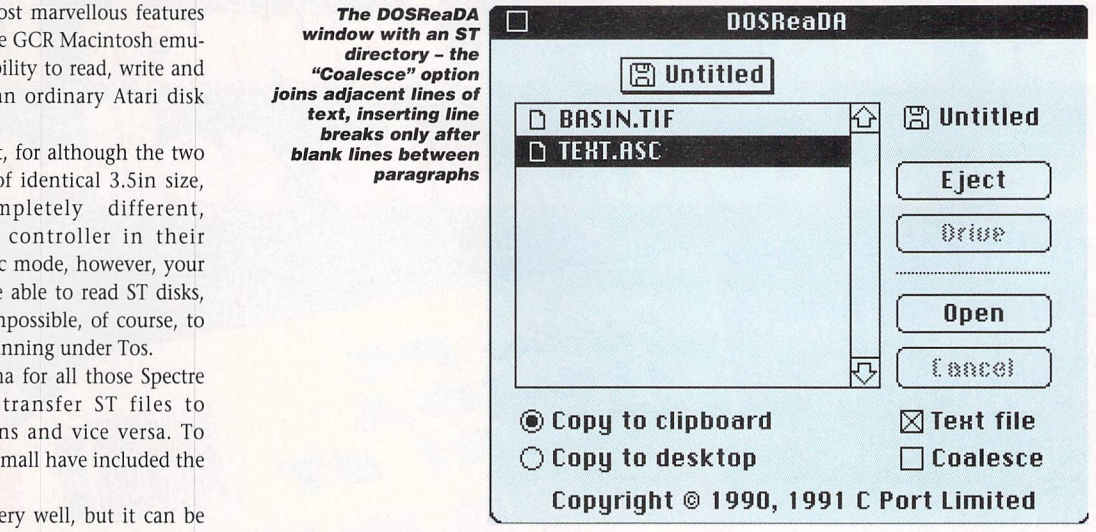
Clocked at 16MHz, the new emulator claims a Norton SI rating of 15 when using the optional fast ram also offered by Vortex, and 11.5 with ordinary ST ram. It supports the 80387SX-16 arithmetic co-processor, EGA and VGA screen modes (monochrome only), and all the features of the ATonce 286 emulator.




**The Birmingham canals, a TIFF picture transferred from Retouche Professional straight (via ResEdit) to Digital Darkroom. DOSReaDA's "Text" option needs to be disabled for this**

The 386SX is a somewhat down-market version of the Intel chip, but if the German retail price translates into anything like its straight sterling equivalent of about £265, then Silica – UK distributors of the Vortex emulators – should have an attractive product on their hands.

There is a snag, though. The ATonce-386SX is at present dedicated to the Mega STE, and at the time of writing there was no sign of Atari's latest machine on the UK market yet...




**The DOSReaDA window with an ST directory – the "Coalesce" option joins adjacent lines of text, inserting line breaks only after blank lines between paragraphs**

# Last month's launch issue was a complete sell-out!

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# FONTS FEARS

The saga of FSMGDOS continues. The latest news at the time of writing is that Atari will be introducing its font scaling module very soon.

As reported in this column, it will use Imagen's UltraScript system which approximates to the font handling parts of PostScript. This would give scaleable font handling to any Gem program written to make use of it. The system has been used in Fleet Street Publisher for the last couple of years.

This is all good news, as it opens the way for professional quality fonts on the ST which are not restricted to a specific application. The same fonts would be available to DTPs, word-processors, graphics programs, spreadsheets, databases – in fact all programs which support FSMGDOS.

There is a downside to all of this, though. The font scaling module is currently over 128K long. This is about 121K longer than the current Gdos and will make a significant difference to the memory requirements of an ST using it. Current calculations give a minimum system as needing 1Mb of memory – and that's without the fonts themselves.

## Overlays

Although scaleable fonts take up a lot less space on disk – you're only storing a single font outline and not a set of pre-defined bitmaps for each font size – they can take more memory. This is because the module – UltraScript in this case – required to scale the fonts and produce the bitmaps which are downloaded to the printer needs workspace in which to construct them. With only a few fonts on a DTP page, the memory requirements can push the 1Mb limit.

The only way around this is to heavily overlay the application software which uses FSMGDOS, to cater for machines with lower memory. This inevitably slows down the software, particularly if the overlays are being transferred to and from floppy disks.

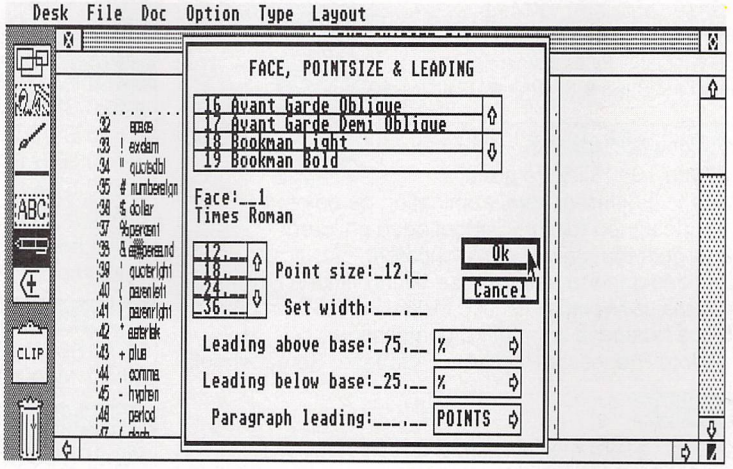
So it looks as if a typical FSMGDOS program will need a machine with 2Mb or more of memory to run comfortably. Still, memory prices are now quite low and the cost of a 1.5Mb upgrade can be as little as £180.

The next thing to consider is the range and price of fonts themselves. Atari maintain that Imagen have supplied them with a "black box" font module, and are reluctant to provide details of the font format it uses. Without this information, users may be restricted to Atari's supply of fonts and, depending on price, may find building a type library expensive.

Prices in the PC market, where the Adobe Type 1 font is the most popular scaleable format, can be as high as £50 for a single type family. Fortunately, though, there's a prolific supply of low-cost and public domain fonts, starting as low as £1 per font.

Fonts are notoriously prone to pirating, so a good price structure is very important. They need to be cheap enough for users to feel that they're not being ripped off, but expensive enough to be perceived as the product of the hard work which they are.

Imagen need to be pressurised to release details of their font format, as Adobe were, to ensure third-party suppliers can generate new or translate existing fonts from other sources into an ST-compatible format.



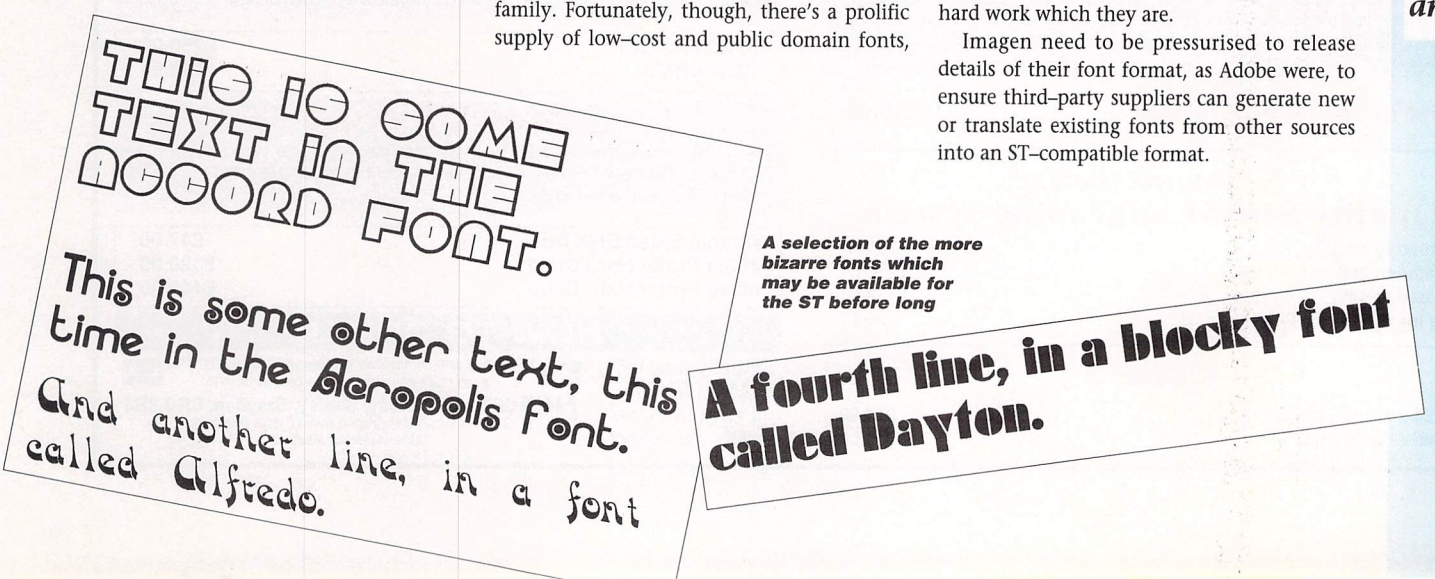

***Fleet Street Publisher has used the UltraScript system proposed for FMSGDOS for over two years***

## Mouse maintenance made easy

*Is your Atari mouse playing up? Is the screen pointer jumping around the screen? It's most likely that the two wheels bearing on the mouse ball have become dirty and are not making smooth, constant contact with it. If you're careful, it's quite possible to overhaul the mouse by cleaning these wheels. Here's how:*

***1. Turn the mouse upside down and turn the ball retaining plate anti-clockwise until the embossed pointer is opposite the "O" (open) marker. Turn the mouse over and the plate will fall out.***
***2. Turn the mouse upside down again and you'll see three white rollers projecting through the sides of the black plastic ball-retaining cup.***
***3. Use a piece of lint-free cloth, i.e. a Jay-Cloth – not a duster – sprayed with a small amount of light, non-wax cleaner such as Sparkle. Wipe each roller along its length with the cloth, removing any particles of grease until the band of dirt is removed. You can turn the roller freely to ensure that you clean its complete surface.***
***4. Once the rollers are clean, drop the ball back into place and refit the retaining plate, turning it clockwise until the pointer aligns with the "C" (closed) marker.***

*The same technique can be used with almost any make of mouse, and should be repeated whenever your mouse starts to play up. The use of a mouse mat will usually reduce the amount of dirt building up on the rollers.*




***A selection of the more bizarre fonts which may be available for the ST before long***

***Will FSMDO be any good anyone, and what do you if your mous has gone mickey? Cha Michael has answers***

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1 Meg 3.5" Internal Sony Drive .....£49.95
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**REPAIRS WITHOUT DIAGNOSTIC FEES**

520/1040 (STFM/STE) ● FIXED CHARGES ● FAST TURNAROUND....£59.95
★ We pick up faulty computer from your premises for only £5.00 + VAT

**POWER SUPPLIES WITH ONE YEAR GUARANTEE**

STFM/STE Power Supplies (Service Exchange) .....£44.95

**MEMORY UPGRADES WHILE YOU WAIT!**

1. 520 ST/STM/STF/STFM to 1 Meg.....£59.95
2. 520 ST/STM/STF/STFM to 2.5 Meg.....£159.95
3. 520 STE to 1 Meg .....£29.95
4. 520 STE to 2 Meg .....£89.95
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★ We specialise in Surface Mount Chips
★ WE PROVIDE PICKUP SERVICE FROM YOUR PREMISES FOR ONLY £5.00 + VAT

**MEMORY CHIPS AT LOW LOW PRICES**

16 x 256k x 1 Bit DRAM .....£29.95
16 x 1 Meg x 1 Bit DRAM .....£89.95

**EMULATORS**

PC SPEED & Fitting .....£99.95
AT SPEED C16 including Fitting .....£249.95
● 16 MHz Clock Speed

**ProGate HARD DISKS for your ST**

PROGATE 20.....£279.00
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PROGATE 40.....£339.00
PROGATE 40DC.....£419.00
PROGATE 60.....£429.00
PROGATE 80.....£479.00
PROGATE 80DC.....£559.00

★ All prices include VAT and Next Day Delivery
★ Please call for special deals on Printers and other Atari Products

# FEED YOUR ST!

## MEMORY UPGRADES

*HCS Computer Peripheral Supplies*

*2 Year Guarantee on memory!*
*14 Day money back guarantee!*

### HCS STE MEMORY UPGRADE KITS.

STE Kits come with either SIMM or SIP type modules. SIMM modules have edge connectors, SIP have pins. All types plug into 4 sockets under the top of the case. SIMM are most common and are supplied by default, these will be swapped if necessary. Trade in is paid as a refund after you have upgraded your computer. All kits come C/W illust. instructions 2+4 Mb comes C/W FREE multi-tasking software.

| STE KITS | NORMAL PRICE | WITH 512K TRADE IN | WITH 1024K TRADE IN |
|---|---|---|---|
| 512K TO 1024K | £22.00 | – | – |
| 2 MEGABYTE | £80.00 | £70.00 | £60.00 |
| 4 MEGABYTE | £150.00 | £140.00 | £130.00 |

### STF(M) MEMORY UPGRADE KITS.

There are 2 basic types of upgrade. The low cost solder in type comes complete with sockets, capacitors, resistors and instructions, or, the much easier to install Xtraram Deluxe kit which fits inside the computer to allow upgrading to 4Mb using SIMMS like the STE uses.

**Solder in upgrade kit to 1Mb** **£30.00**

### Xtraram *Deluxe*
### Quality SIMM upgrading system

| | |
|---|---|
| Populated to 1/2 Mb | £65.00 |
| Populated to 2Mb | £110.00 |
| Populated to 4Mb | £159.00 |
| Fitting for above (Ex. Post) | £20.00 |

### CHIPS

| | |
|---|---|
| 16 x 256 x 1 Dram Chips | £24.00 |
| 16 x 1 Mb x 1 Dram Chips | £70.00 |

## EMULATORS

### PC EMULATOR

PC Emulators sit on top of the microprocessor of the ST. When in use, they take over control of the processor. This allows speed and a high degree of compatibility. PC Speed runs 4 times faster than a PC. The AT Speed 8.3 times. The AT Speed coprocessor socket allows the extra chip to accelerate numerical calculations 5000% (Five thousand!).

| | | |
|---|---|---|
| AT SPEED | Supplied | £220.00 |
| | Fitted | £245.00 |
| PC SPEED | Supplied | £90.00 |
| | Fitted | £120.00 |
| AT SPEED STE ADAPTOR | Supplied | £25.00 |

### MACINTOSH EMULATOR

Spectre GCR allows the ST to emulate the MAC using the ST's own processor (as used in the Macintosh). It simply plugs into the cartridge slot and the disk drive port. (It also has a through port to allow a second drive). It will run up to system 6. The versions supplied will be up to date, from GADGETS.

| | |
|---|---|
| SPECTRE GCR | £250.00 |
| 128K ROMS | £70.00 |

## DISK DRIVES

The double sided disk drive kit replaces the internal single sided drive in the STFM. The PROTAR hard drives supplied are of the highest quality and are ST Format GOLD winners of 1991.

| | |
|---|---|
| Double Sided Disk Drive | £47.00 |
| 40Mb Protar Hard Drive | £320.00 |
| 80Mb Protar Hard Drive | £446.00 |

## HOW TO ORDER

Prices include VAT.
Add £1.50 P&P .
Please call before sending your computer

Telephone orders and enquiries welcome on Tel/fax: 081-777 0751
Please make cheques/postal orders payable to:
**HCS 35 Hartland Way, Shirley, Croydon, CRO 8RJ**
*Goods normally despatched within 2 days of receipt.*
*Trade-in paid as a refund*

E&OE

# Ignore the chain-gang!

I often get letters offering me the chance to make my fortune, mostly as harmless as they are unlikely to succeed. The latest, however, is a variation on the old chain-letter.

The idea is that you buy a "report" from each of four people on the list at £5 a time. Then you put your name at the top of the list and move the others down, the last one dropping off the bottom. You then send the new list to 200 people and, if "only" five per cent of them order reports and send out 200 further letters, you stand to make £50,000 by the time your name is pushed off the list.

For anyone with a computer the letters would be easy enough to produce and ST owners, with Christmas bills to face, might be tempted. Don't be! Even if the scheme is legal, it has to start with four people, each sending out 200 letters.

If you are on the first mailing, by the time you drop out there would be over 800,000 letters in circulation. If you start at the third batch, the figure is over 80 million (think about it). Worse, if the take up is one per cent, which is just as likely, your return drops to £150, for which you have laid out £20, plus postage, stationery and time.

If you get one of these letters, send it to your local trading standards office, or put it in the bin.

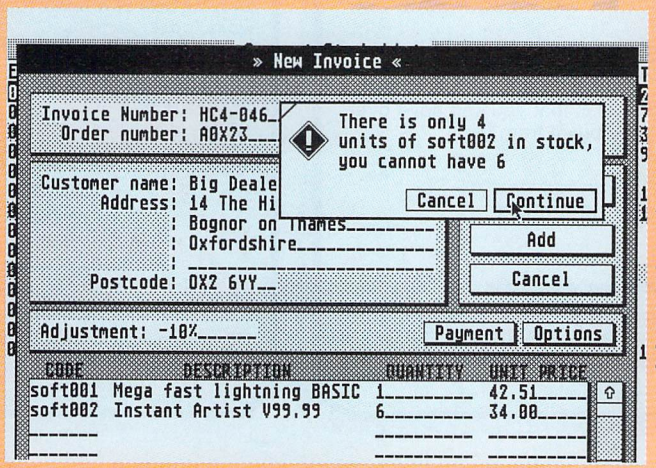
# Sales Controller

*Phil Trory considers the temptations of riches, hears from a real, live business user and offers help with sales*

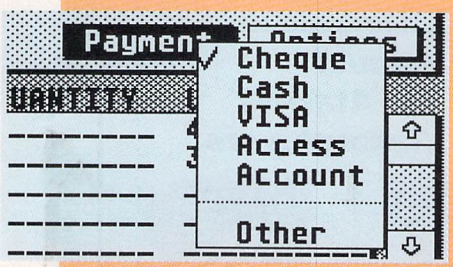
A useful addition to the range of business shareware is Sales Controller, by Andrew Brown. The package enables you to set up lists of products and suppliers and to track stock, prices and mark-ups.

You can also create and print invoices, print price and stock lists and use the names and addresses in the database to run off orders for stock and chase late payments. Invoices can be created for over the counter sales, as well as account customers.

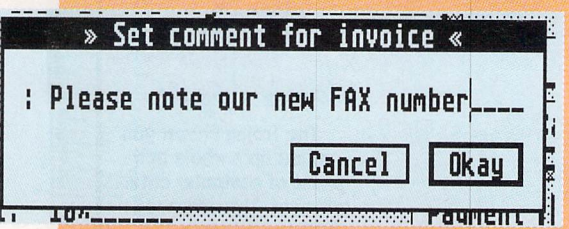
All in all, it is a very professional package and would be ideal for a wholesale operation. A limited PD version is available from Goodman Enterprises and other libraries. The full package costs £30 from Andrew Brown, 2 Ullswater Drive, Wetherby, W. Yorks, LS22 4YF.



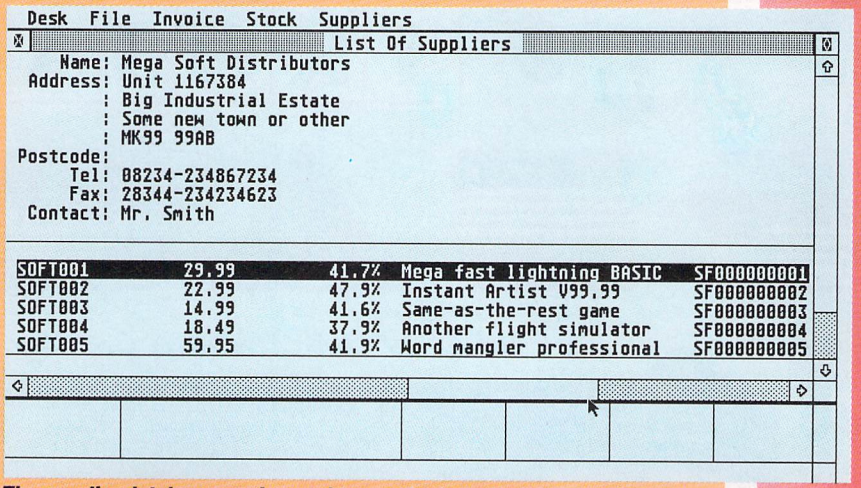

***The invoice form has space for full customer details, which can later be used to chase payment and send mail shots. The product price and description are transferred automatically from the stocklist and the order is checked against available stock***




***Payment terms can be selected from a dialogue box***




***A comment line can be added to an invoice to highlight new facilities or special offers***




***The supplier database can be used to reorder low stock items. The cost price is used to calculate the mark-up. A separate product list holds the selling price and tracks stock against minimum and maximum levels***

# You're not alone

Having had my enquiries rebuffed by one well known dealer with the words "What business use?", I was delighted to receive a letter from Richard Choroszewski of the Neptune Shipping Agency in Callington, near Plymouth.

Shipping agents spend a lot of time copying the same information from one form to another, a process that is tedious and prone to error. Neptune found that all the information about a job could be entered into Superbase on an ST and then printed out on all the different forms needed for customs, invoices and delivery instructions.

From one ST six years ago, they now have a 386 PC acting as file server to STs, Megas and a TT, all on a Bionet network. The users like the system, the reports are easy to set up and customers get an accurate and fast service, at a competitive price.

Unfortunately, as the system is used more and more, Superbase is starting to protest at being used as a multi-user database. When two users try to write to the same record at once, the result is a corrupt data file, which can be recovered, but is still annoying.

One solution would be to run updates as a batch process at quiet times, but this takes away the benefit of working with the latest information. Alternatively, updates could be send to a holding area and one machine – a 520STFM would do - could be dedicated to look for updates to post into the database.

## STITCH UP YOUR BOOKIE . . . for only £24.95!

SAVE £32.55

Pro-Punter is a remarkable piece of software that gives you a much higher than average chance of winning on the horses.

Officially proven to the racing press and other magazines by sending time and date franked letters by Post Office mail, Pro-Punter has shown that it can predict winners with remarkable accuracy.

And it is also cautious with your money. If it thinks there is any doubt about the outcome of a race it will advise you not to bet.

For a short period, the best news of all is that you can save over £32 off the recommended price if you buy it from us.

| | |
|---|---|
| RRP | £57.50 |
| Our Price | £24.95 |

**SAVE £32.55**

BACK TO SCHOOL WITH SPELL!

## Passing an exam . . . applying for a job . . . whatever you want to do in life you need to be able to SPELL!

There's mounting alarm about the appalling standards of spelling among Britain's schoolchildren. MPs, teachers, parents and employers are all stressing the vital importance of being able to spell correctly.

Yet most homes have what could be the ideal means of teaching spelling – the computer.

Instead of zapping aliens it could be turned into the best weapon of all to deal a body blow to bad spelling. With the help of a brilliant new software package that not only makes practising spelling painless but also loads of fun as well.

SPELL! is unique. It lets the user learn at his or her own pace. They can take as long as they like – or take on the computer in a high-speed challenge!

And this one package is ideal for everyone – with the lowest age group suitable for under-5s, while the more advanced words will stretch even the most able students.

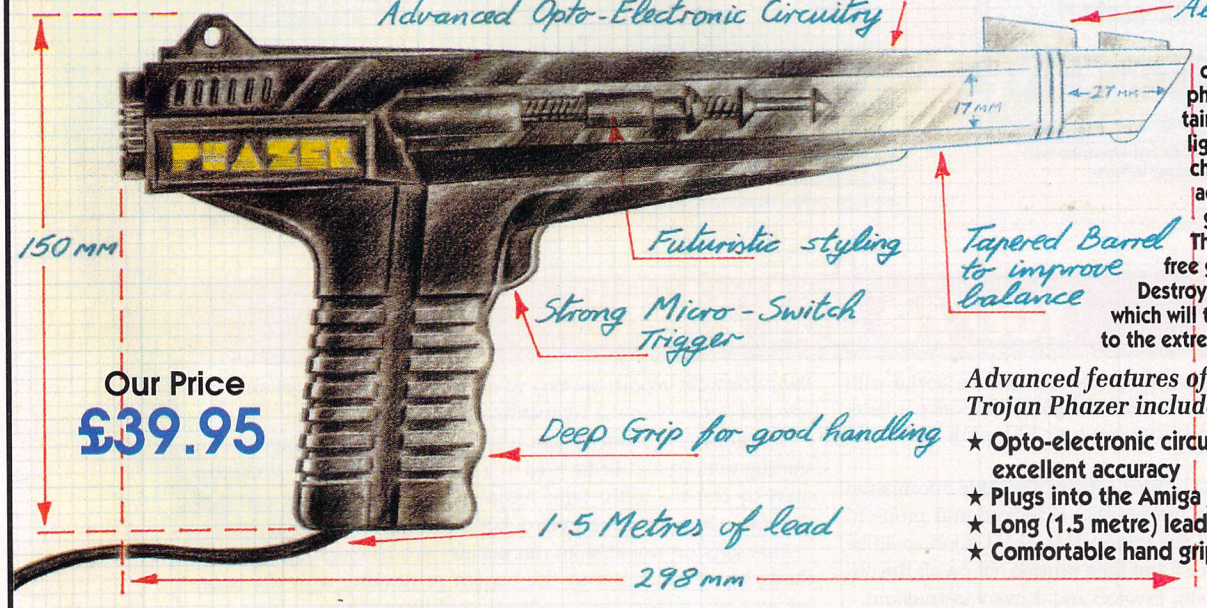
***It includes five different tests, each making use of more than 5,000 words – so much variety that you'll never get bored.***

- 5 DIFFERENT TESTS
- OVER 5,000 WORDS
- FOR AGES 5 TO 15

***SPELL! only costs £8.95. It is now available on disc and tape for six of the most popular home computers. Please use the order form on Page 151.***

## The TROJAN PHAZER

***A must for Atari ST Gameplayers***




**Our Price £39.95**

**The Trojan Phazer gun opens up a whole new phase of computer entertainment. This advanced light phazer presents a challenge of skill and accuracy for Atari ST gameplayers of all ages. The pack includes two free games, Orbital Destroyer and Skeetshoot, which will test your shooting skills to the extreme and a full manual.**

*Advanced features of the Trojan Phazer include:*

- ★ Opto-electronic circuitry to give excellent accuracy
- ★ Plugs into the Amiga joystick port
- ★ Long (1.5 metre) lead
- ★ Comfortable hand grip

TROJAN SOFTWARE

**Other Games Now Available, See Order Form for Details**



To order, turn to the Reader Offers order form on page 151 of this issue

# Unleash your imagination for half price!

**STOS and all three add-ons for only £49.95**

**OR order STOS Compiler, STOS Sprites and STOS Maestro for only £34.95**

**STOS – The Game Creator** is the number one best selling package which has enabled thousands of ST owners to create stunning games quickly and easily. Commercial releases like Fun School 2,3 & 4 and Prehistoric were all written using STOS!

The package comprises three discs containing STOS Basic, sprite editor, room designer, character set editor, icon editor, music editor, screen compacter and three superb games, plus a 280 page manual packed with examples and a quick reference card.

Whether you've never written a game before, or you're a competent programmer, you'll find that STOS is the perfect way to design your own entertainment or educational software. In addition you are free to sell your masterpiece as you like.

*"STOS is amazing"* **–ST Format**
*"Highly recommended"* **– ST Action**
*"Go out and buy it"* **– ST World**

**STOS Compiler:** Turbo charge your STOS programs so they run up to twice as fast as before. Create standalone PRG files which you can select from Gem – and compile the sprite editor so you can create bigger Sprite files. Comes with a clearly written 21 page manual.

**STOS Maestro:** Add dramatic sampled sound to your games and make them bristle with atmosphere. Use any of the 50+ sound effects included. Provides 13 new instructions for STOS.

**STOS Sprites:** More than 600 ready-made characters for use in your STOS games: Spaceships, explosions, flying saucer, missile silos, Spitfire, prop plane, biplane, submarines, battleships, wizard, goblin, dragon, hang glider, cars, trucks, motorcyles, Porsche, skateboarder and many more.

**STOS Products are also available separately.**
**See the Order Form on Page 151 for details.**

# ProFlight

**ProFlight is the most realistic military flight simulator for the home computer, based on the Tornado fighter which has just seen front line action in the Persian Gulf.**

**Only £34.95**

Feel the excitement of being at the seat of a jet capable of climbing to 30,000 feet in less than two minutes and test your skill at firing deadly missiles during dog fights with enemy jets.

Unlike other programs, ProFlight doesn't forget its primary role as a simulator and its secondary job of being a shoot-'em-up, made accurate by using exact flight equations to mathematically model the flight of the aircraft and its missiles.

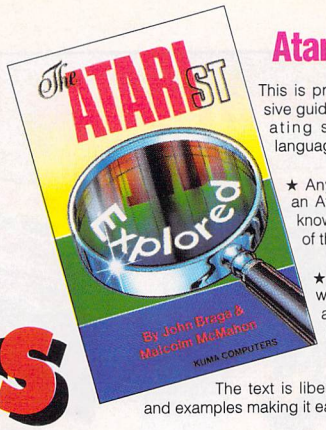
You are tested at everything real pilots face each day but helped in your task with a comprehensive manual written by a Tornado expert.

**To order, please use the form on page 151.**

# ATARI ST USER

# Reader Offers

**To order, please use the form on Page 151**




## Atari ST Explored

This is probably the most comprehensive guide available to Atari GEM operating system and main ST/STE languages. It is designed for:-

★ Anyone considering purchasing an Atari ST or STE and wishing to know something of the capabilities of the system

★ The intelligent user who wishes to explore the remarkable GEM operating system and to appreciate its power and versatility.

The text is liberally illustrated with diagrams and examples making it easy to follow and understand.

This book is essential reading for anyone using or considering using an Atari ST/STE

**Only £9.95**

## Master Sound 2

### *Capture any sound you hear and replay it in seconds*

It's so easy to use: Simply connect the sampler to your ST or STE, load the software and immediately you have the ability to capture sounds with amazing accuracy.

Connect your compact disc player or personal stereo and digitise sounds to incorporate into your own games and tunes.

The supplied software provides complete control over the sampled sounds: Cut and paste them, flip and fade them and you're still only using a tiny fraction of the sound processing tools available.

Best of all, the comprehensive instructions will soon have you creating your own public domain demo disks complete with IFF picture files.

The perfect sound sampling package for beginners and experts alike.

Master Sound 2 is a complete hardware and software sampling system for only **£34.95** (RRP £39.95).

**"Is it real or is it Master Sound?"**
*– Amiga Computing, May 1990*

## HiSoft – Your 2nd Manual

Want to know more about the secret, and not-so-secret workings of your ST? Your 2nd Manual, written by Andreas Ramos, contains all you'll ever need to know – how to do repairs and recover lost information, hints and tips, short-cuts, and much more. Also included are two free double-sided disks – a Public Domain Disk containing lots of goodies, and a HiSoft Demo Disk with full demo versions of five great programs. So what are you waiting for? We have limited stock – buy today for only **£12.95**

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In 1989 Western Europeans threw away over **128 million** printer ribbons. They weighed over **9,000 tonnes** in total and would reach **right around the world** if laid end to end.
A used ribbon cartridge is being thrown away somewhere in the UK **every second** of every day.
You can help put an end to this environmental waste and save some money at the same time thanks to ***RE-INK***, a revolutionary new spray which brings new life to exhausted fabric printer ribbons.
***RE-INK*** is cost effective and simple to use. Simply open up your plastic ribbon cartridge, spray a few squirts of ***RE-INK's*** special ink and lubricant formula and your ribbon is good as new – sometimes even better!

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★ ***RE-INK*** – treated ribbons give **clearer, blacker** print than new ribbons
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★ ***RE-INK*** can extend the life of your printer with its special **lubricant** oils

*BEST OF ALL, **RE-INK** IS AVAILABLE IN THIS SPECIAL READER OFFER FOR ONLY*

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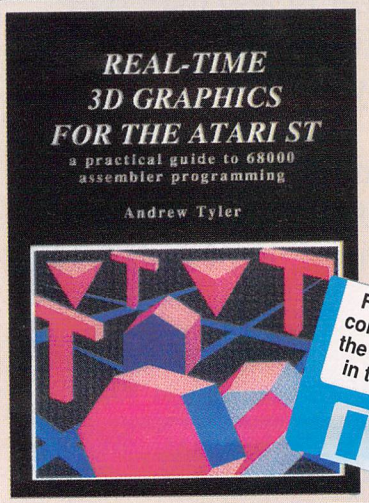


## INTERESTED IN HIGH PERFORMANCE GRAPHICS PROGRAMS?

### *Then here's how to write them*

This accurate and up-to-date book from SIGMA Press shows how to produce vivid 3D solid graphics. Not just pretty pictures, but everything you will need for your graphics project, even to writing a flight simulator. Contents include assembler programming, screen mapping and all the transformations you will need to produce superb full-colour graphics.

**At Only £12.95**

this represents a superb value reference book for the serious ST User

# BINDERS

Using a system of strengthened steel rods these handsome binders will hold 12 issues of your favourite magazine securely in place. Why rummage through cupboards and book cases for dog-eared back issues when you can keep them safely together in one place?

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Keep your ST free from dirt and dust with these smart dust covers. Made from rugged PVC, bound with strong cotton and sporting the distinctive Atari ST logo, these are the perfect way to protect your micro.

**ONLY £4.95!**

# DISK BOXES

These sturdy closeable boxes will protect your disks from damaging dust particles

Each one also features the Atari ST User logo and can hold up to 50 disks.

**ONLY £4.95!**

## NEED SOME EXTRA DISKS?

**There's always a demand for spare ST disks – and at Atari ST User we have lots we will be happy to sell off at a really exceptional price. They are all disks that have been prepared as monthly cover disks, but they are brand new and have never been used, so you can safely reformat them and use them for any purpose you like. Look at these prices**

**5 FOR £7.50!**
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**TO ORDER FILL IN THE FORM ALONGSIDE**

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## RE-INK SPRAY New

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*(No stamp needed if posted in UK)*

Products are normally despatched within 48 hours of receipt but delivery of certain items could take up to 28 days

**Order at any time of the day or night**

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ST11

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**A subscription to *Atari ST User* will bring you 12 months of the best news, reviews and features for the ST, delivered direct to your door. Plus, as a special thank you for your commitment to *Atari ST User* we can offer you a great choice of subscriber bargains. Whether you take your computing seriously or prefer to play top-rated games, we have something for you from our Six of the Best package of subscriber offers. Subscribe TODAY and choose one item from the selection below, and remember – these offers are exclusive to subscribers.**

### MIG 29

The definitive flight simulation, Mig 29 Fulcrum sees you flying a variety of missions based on real life scenarios. Included in each software pack is a 128 page manual, full instructions and a giant poster.

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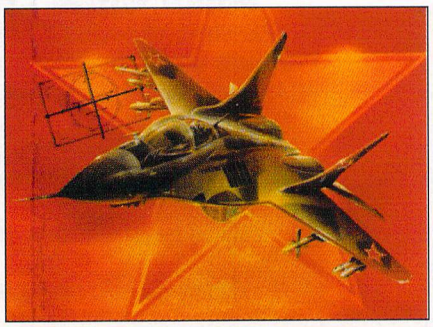

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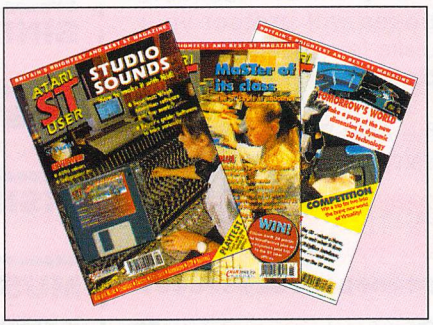


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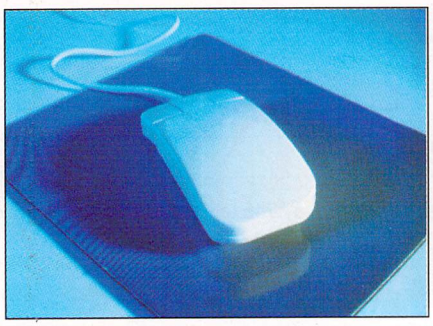

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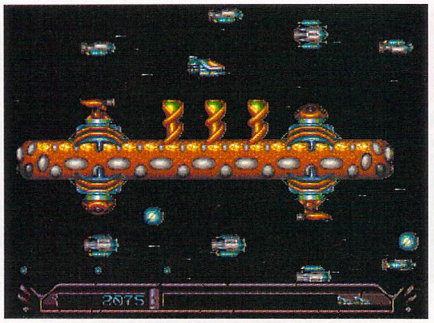

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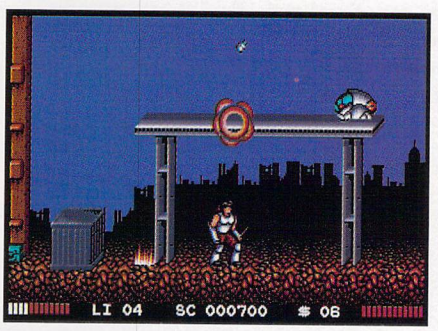


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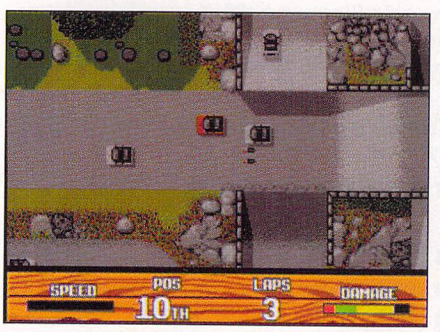


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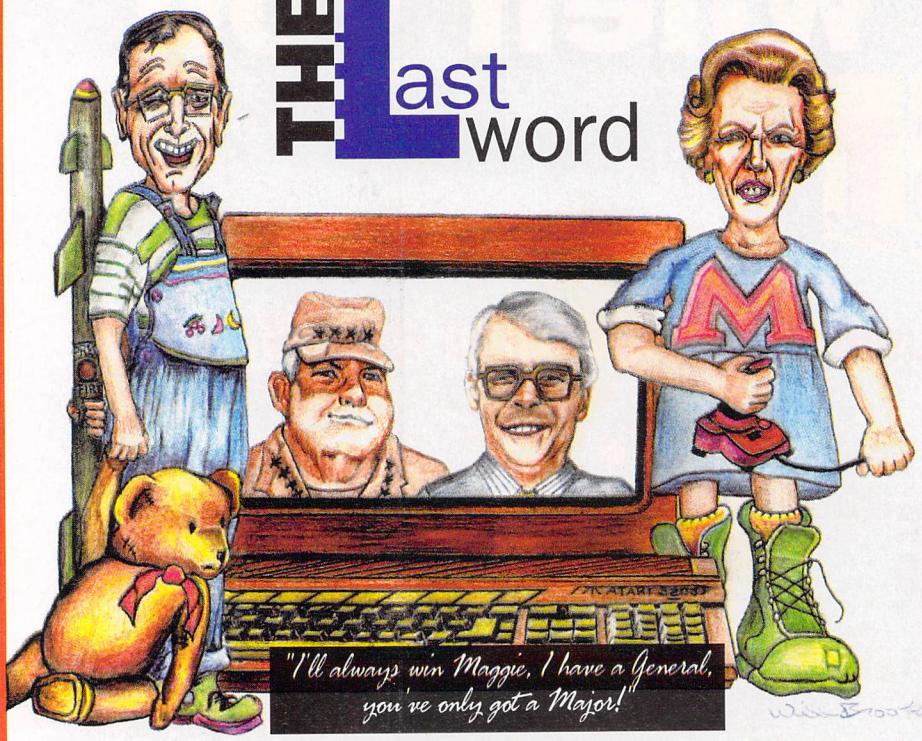


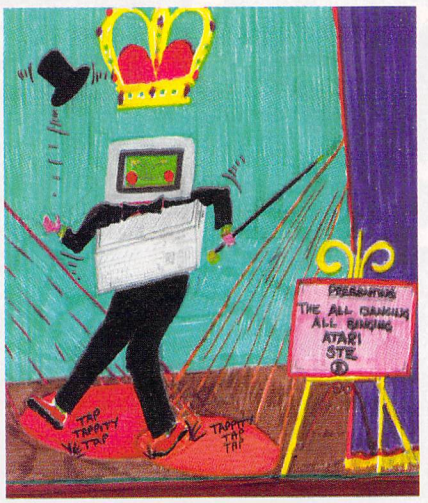

## Cartoon Capers!

It's time to announce some more lucky *Atari ST User* Competition winners. The competition in question this time is our 4096C one. The artistic exploits of three readers have won them the chance to exploit 4,096 colours on their STs. Each winner will receive a 4096C upgrade board and a copy of Deluxe Paint, the perfect paint package to make the most of the ST.

We asked you to draw us a cartoon featuring the ST in some way. The entries have been pouring in thick and fast (mainly thick it has to be said) but we have managed to salvage a few high quality winners. So congratulations to **W Brooke from Norfolk**. We think your Maggie and George cartoon is good enough to be cover artwork (Shame we are not a political magazine – Ed).

**D A Wood** is also a winner, thanks to his monstrous encounter with the ST, and finally congratulations to 12 year old **Steve Downes** who picks up the last pile of prizes for his "all singing – all dancing STE".

Sorry to everyone who didn't win, but better luck next time eh?

## Two disk or not to disk?

Our more observant readers will have noticed two things. Firstly, there is only one pellet of plastic sellotaped to the cover and probably most importantly, we are a meagre £2.99 again.

What did you think of our double disk issue? Do you think a second disk cram packed with utilities and demos is worth the extra 76p we charged?

Like the extra charge or not, it has given us an idea for a competition. What we want you to do is write down ten things you can do with 76p. They can be funny, clever, downright boring even, but we are interested to know how 76p would change your life.

Send your entries to 76p, The Last Word 69, *Atari ST User*, Europa House, Adlington Park, Macclesfield, SK10 4NP.

You had best deduct 24p from the 76p in order to pay for a stamp. The best entries will win a "suitable" prize.

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## Next month's ATARI ST USER

The next action packed instalment of STU will be in the shops on Thursday November 12, 1991.
You can't afford to miss it.

# HARLEKIN 2

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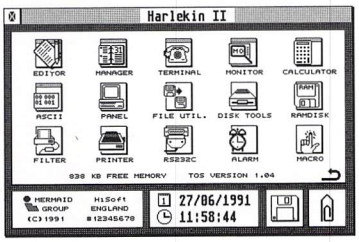
Harlekin 2 is a unique collection of utilities and applications for your Atari ST and TT computers. All programs are available from a single desk accessory, providing maximum convenience while taking up only one slot on the Desk menu:




- *complete editor with search and replace, block-marking with the mouse, external clipboard with cut copy and paste, full page setup options for printing, word wrap and more.*
- *extremely powerful appointment diary/calendar/ideas organiser called the Manager. This allows you to make notes of any size and assign dates, times, priorities, icons and alarms to them. Then print out your notes by day, month, year etc. for a complete time management system.*
- *dynamic printer spooler that takes just as much memory as it needs, comprehensive printer filter.*
- *full macro processor allowing keyboard shortcuts for Harlekin's modules and extensive keyboard macros, all totally under your control.*
- *communications package allowing X-Modem and Y-Modem protocols plus full modem set up and an extensive dial directory.*
- *many, many more utilities too numerous to mention in this small space, plus a 150-page, wire-bound manual.*

Harlekin 2 is available now at a price of £59.95 inclusive. Upgrades from version 1 cost £24.95; just send your master disk back to HiSoft, together with your remittance.

# HighSpeed Pascal 1.13

Version 1.13 of this new, already immensely popular compiler is now available. Additional features are:

- *inline assembler*
- *help desk accessory*
- *i/o-mapped maths co-processor support*
- *faster, improved editor*
- *more compact libraries*
- *absolute-address variables*

Upgrades from earlier versions cost £7.50 inclusive, or £2.50 from version 1.1.

For those not in the know, HighSpeed Pascal comes from Denmark, is extremely fast and friendly to use and is very closely compatible to the immensely popular Turbo Pascal on the PC, even including the graphics unit from the PC.

Compilation speed is roughly 20,000 lines per minute with excellent code generation for the ST and the TT.

# ProFlight 1.2

We are pleased to announce the release of version 1.2 of ProFlight, our immensely popular Tornado flight simulator, loved by reviewers and users alike.

This new version of our Tornado flight simulator includes improved colour graphics, the ability to save your cockpit set-up, a pause key, more control over the view angle and more … it even works on the TT!

A1 RATED

Registered users can upgrade by sending their master disk back, together with £2.50.

# HiSoft C

The ideal way to learn the difficult C language is with an interpreter and HiSoft C for the ST has all you need:

- *try out your new C programs quickly and easily*
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HiSoft C is already widely used and well received by its users and reviewers alike.

So take the hassle out of C language and learn the talking about everybody's

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# Your FirST BASIC

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The comprehensive reference guide and tutorial to the popular FirST BASIC package which is supplied with your new Atari ST computer.

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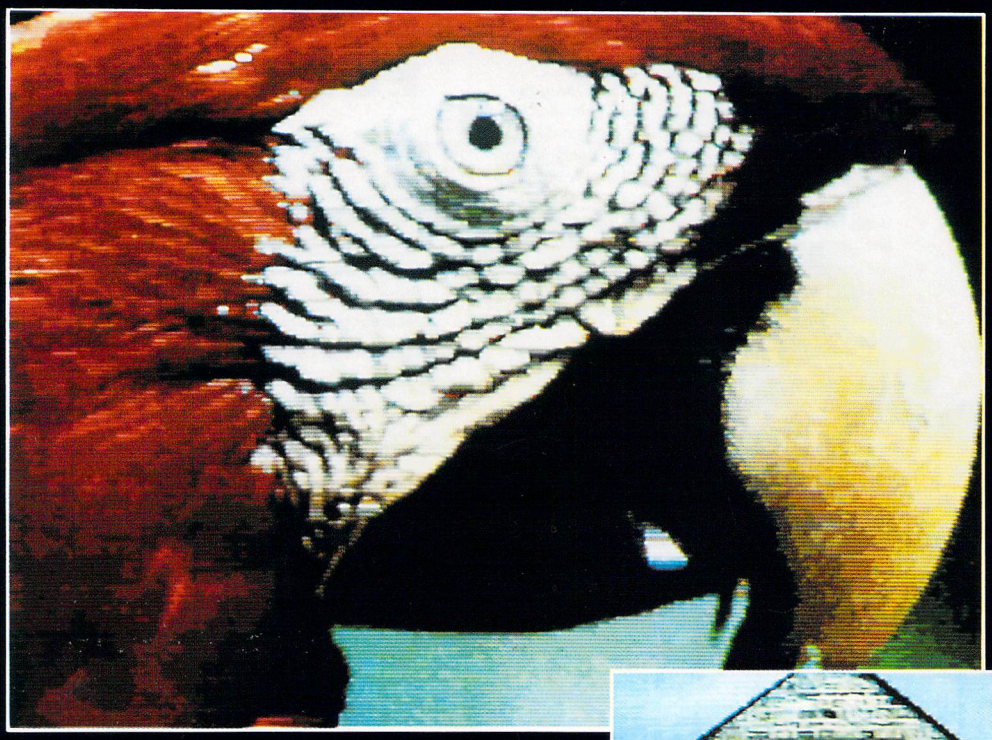

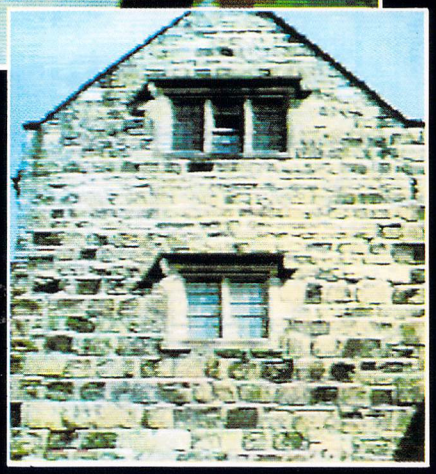

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