ATARI ST USER

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SEX, LIES AND VIDEO GENLOCKING?

PHILIPS

a brace of cheap genlocks and the best DTV advice money can buy...

ATARI ST USER

USERDISK JULY...29

**A LOAD OF OLD BALLS?
NO, IT'S THE WORLD'S FAVOURITE, SUPER-BREAKOUT!**

MAKING MUSIC LIKE MOZART (...AND MOTORHEAD) WITH MUSIC CONSTRUCTION KIT

SEX, LIES AND VIDEO GENLOCKING? P.19

All of Atari's products were represented and there were plenty of opportunities for visitors to try out hardware both old and new. It was big, bright and the first major Atari-hosted user forum. A complete show-case for Atari's business, home and entertainment products.

Thanks to the strong manufacturer link, the Atari 90s show put a whole range of Atari products on display, from the Lynx and video game consoles to the complete ST range, the new TT, and even a Transputer Workstation!

All of the systems were up and running and it was an ideal opportunity for anyone to get hands-on experience of the hardware products creating the interest. Several specialist seminars were held throughout the show covering DTP, Portfolio, Lynx, a new Atari product update about

ATARI '90s SHOW

the TT and STE, Bulletin Boards and ST programming (by HiSoft).

Atari held a press conference on the first day but apart from the launch of the company's ABC386 PC clone, and some marketing plans for the Portfolio and Lynx little else was revealed. The 520STFM Discovery pack will get a good push but there's little planned for the other ST models.

Signa put on a show of computing muscle with an impressive line-up of networked STs, plus a few PC fileservers, a Stacy to control the Calamus Linotron interface and the Linotron 300 image-setter itself. The BioNet 100 Ethernet network could be seen running at full tilt on STs and PCs with MSDOS and Unix running on the ST nodes as well.

Any terminal could print documents on the Linotron from Calamus and once processed, the high-quality results were most

ABOVE: The amazing Lynx hand-held games machine demonstrated in a four player link-up

BELOW LEFT: Simply bristling with bargains on the lower floor of the show

BELOW RIGHT: This old 520ST has never looked so good...

impressive. In addition to the complete DTP system of Calamus and Outline Art running on Mega STs with A3 screens, Signa was also showing off the latest version of its Chili Desktop Video system complete with 16 million colour genlocking, frame grabbing and hi-res image editing.

Slightly more down to earth, was the friendly, low-cost word processor Script, specialist document processing in the form of Signum 2 and a range of fine image scanners.

Gasteiner previewed a clever new RAM upgrade for 520 and 1040STs designed by GE-Soft. This plug-in device promises to be one of the most painless RAM upgrades - just plug the board into the video shifter socket and off you go. The board was in prototype form and wasn't actually seen running. Gasteiner also showed a replacement mouse - based on the same mechanism used by Naksha. And the price? About £20.

Third Coast Technologies was busy throughout the show selling discount hardware, budget hard disk drives, and a range of RAM upgrades imported from the USA and Germany. Two surprises were displayed in the form of the GST40e Genlock and a new 68030 processor upgrade board from Pro-VME.

Third Coast was taking orders for the GST40e at an introductory price of £199 - by far the cheapest Genlock available for the ST. Production costs however, have already driven the retail price of this device up to £249. GST 40e works with STEs without the need for an internal shifter chip kludge, but other STs need an extra plug-in board to enable the Genlock to synchronise with the ST's video signal.

Pro-VME's 68030 board was kept under lock and key in a glass cabinet. This impressive device uses a 68030 processor running at 25MHz with a 128K instruction and data cache, a socket for a 68882 math co-processor, and a standard 68000 CPU for compatibility. The designers claim that the '030

board will make an ordinary ST run more than twice as fast as a TT using the same processor running at a modest 16MHz. Because TOS was not written with the 68030 in mind it has to be patched in order to run with the '030 CPU.
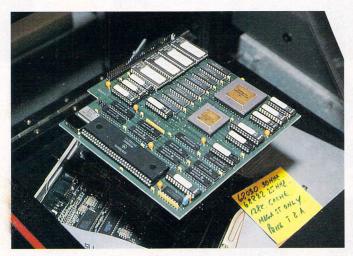
Pro-VME has managed to obtain the rights to supply a modified version of TOS 1.4 fitted to the board as standard. Contact Third Coast on 0257 472 444.

Pandaal Marketing (0234 855 666) was demonstrating its new range of scanners with revamped software (see full news report), plus the latest Master Sound II sampler. Frontier Software previewed its multi drive interface and duplicating soft-


A show of networked computing might from Signa, plus the best in Desktop Publishing and Desktop Video

Condor's multi machine - an ST, PC and Macintosh all in one box with a hard drive and second floppy too!

RAM upgrades for ordinary STs could soon be as easy as plugging in one board like this prototype from GE-Soft

ware which can take up to 32 floppy drive mechanisms copying up to 32 double-sided disks simultaneously in under a minute.

The floppy interface/duplicator will be available shortly for £199 (excluding disk drive mechanisms). A pre-production sample of Frontier's next major product release was also given an airing - the Printer-Q buffer. This expandable centronics printer buffer can take between 64K and 1Mb of RAM and has an RS232 option to facilitate automatic conversion between serial and parallel and vice versa, in addition to buffering. Printer-Q should be available by October at around £120 for the 128K version.

GFA Data Media was well represented again with boss Les Player supported by the men behind the GFA User magazine and GFA support line. On show was GFA Draft Plus version 3 and the latest version of GFA BASIC 3 with STE support giving easy access to the STE's graphics and sound facilities. GFA Data Media, 0734 794 941.

The awesome 68030 processor upgrade from the designers of HyperCache. Make your ST run faster than a TT!

HiSoft was also attracting plenty of attention from ST programmers with its comprehensive range of products including the awesome Lattice C version 5 compiler. It wasn't all programming however, the Spectre GCR Mac emulator was seen running on a Moniterm A3 screen and looks even better - and more compatible - than ever. HiSoft is on 0525 718 181.

Condor Computer demonstrated the surprising Troika multi-standard machine - an ST, Macintosh and PC all in one box. Connected to an ordinary ST, the specially designed system case houses Spectre GCR, Supercharger, a hard disk drive, a 5.25" floppy drive and a special cooling fan designed to cool Troika and extract air through the ST's upper venting grill which sits

below the system box. All cables are tucked neatly out of sight.

Troika retails at £1399.95 for the basic model with a 48Mb hard drive. Bigger RAM and hard drive options can be requested for an extra charge. Phone 0734 810 066 for more details.

Radio Service Co., or The Atari Workshop as it would prefer to be known by 'USER readers, was showing the German-built Tower Power replacement casing in which you can fit any model of ST.

A very neat looking 520ST (yes, the old one!) was demonstrated with its new casing, remote keyboard and monitor on an adjustable arm. Kits starting from £129.50 can transform your ST. Atari Workshop, 071 708 5755.

With barely 8000 visitors through the doors (plus a few dozen through a fire exit at the back of the building), the Atari 90s Show had a lower than expected attendance. Despite this, most of the exhibitors felt that the quality of visitor was high and that most were knowledgeable and keen and loaded down with disposable cash.

The visitors themselves were also very pleased with the show: plenty to see, plenty to do, plus a few good bargains as well. Don't miss next year's Atari Show if you want to keep in touch with the latest in Atari hardware and software. At last, the annual computer shows are starting to lose their box-shifter image and provide some intelligent coverage - let us hope that the trend continues and next year's show is as good. ●

Music DTP now even better

Take Control's impressive publishing system for music notation Music DTP, is close to a major upgrade which will incorporate the eagerly-awaited real-time direct input MIDI facilities.

Music DTP is a page make-up system for musical notation, rather like a conventional Desktop Publishing package. The new facilities enable MIDI data to be converted directly into music notation for manipulating with the program's page make-up functions.

The 'typeset' music can also be converted into MIDI data for conversion back to music from paper. The new software allows .IMG files and .GEM vector graphics to be imported - you can even have mediaeval plainsong notation.This unique package uses GDOS and can drive a range of printers, producing outstanding results on 24-pin devices or the Atari Laser. Contact Take Control on 021 706 6085.

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Minix gains speed and user-base
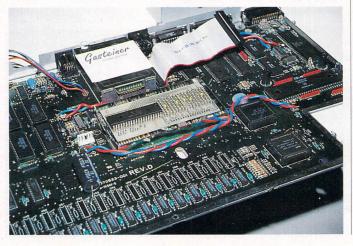
Minix, the Unix work-a-like replacement operating system for STs, has undergone a significant upgrade to version 1.5 to provide increased speed and improved functionality.

Unix is a true multi-tasking command-line based operating system that normally requires multi-megabytes of hard disk space and RAM in which to operate. Published by Prentice Hall, Minix is a slightly trimmed-down version of the operating system written for use on microcomputers with modest memory and disk capacities.

Although originally pitched as a teaching vehicle for use in the academic environment, Minix has been accepted world-wide as a popular, potent and low-cost Unix-like development system. ST applications will not of course, run under Unix/Minix, but there is a substantial selection of utilities and applications written for the operating system, enabling it to be used as a serious ST operating system and educational tool.

Minix is also lucky enough to have good UK support in the form of the Norwich-based Minix Centre. A quarterly magazine is mailed to registered Minix users and a knowledgeable support scheme is active. The Minix centre can supply the operating system complete with source code for itself and the utilities supplied, for about £100. Version 1.5 contains over 180 utility commands and includes ANSI and POSIX C libraries and there are now versions available for the Amiga and Macintosh. If you can't afford the true AT&T Unix, 'phone the Minix Centre on 0953 89345 and try out a truly affordable alternative.

• The Minix centre can supply hard disk drives for the ST ranging from 20Mb to 256Mb. These come pre-configured for Minix although they can be ordered for use under the normal TOS operating system.

FAST 32MHz TT DEYLAYED

Atari's 68030 TT has been tweaked to run with a 25 or 32MHz processor clock speed to boost performance, but problems will hold back the machine until September. A number of reports suggest that the new 68030 TT has received a significant performance boost in the form of an uprated processor clock speed rising from 16MHz to 25 or even 32MHz.

The processor clock speed determines how quickly the TT can process machine instructions and has a major effect upon the overall speed of the machine. The 'normal' ST has an 8MHz clock speed and the current TT specification provides a 16Mhz clock which, in comparison with rival 68030-based systems, is not very competitive in terms of raw processing power. The added performance should make ordinary ST programs run at least 5-7

times faster, with some '030-optimised programs notching up a huge 10-fold speed increase over the 68000-based ST.

The Dutch ST press has already carried reports about the 32MHz TT and several develop-

ers in Germany, the Netherlands and Belgium are reported to have taken delivery of the souped-up TTs. It is not known whether the 32MHz machine will be the base spec TT or a different model to the present 16MHz version

(which has taken so long to appear other manufacturers have started producing much more powerful 68030-based hardware).

More serious however, are reports that the Germans have run into problems with the 32MHz machine and production is not likely to reach capacity until September. This sudden change in specification strongly suggests that Atari have recognised the need to give the TT more competitive performance and have taken a late decision to adjust the hardware and boost the clock speed. As expected, Atari UK would neither confirm or deny these reports, electing not to talk about the machine until it is working and almost in the shops.

Absence of a strenuous denial would suggest that a super fast 32MHz TT will be a reality - when the problems are sorted out. ●

ATonce '286 PC emulator set to topple the V30's

Although more than capable in its own right, the ST emulates other computers very successfully. IBM PC emulation in particular, has enjoyed widespread popularity with many home, business and education users capitalising upon the low-cost PC transformation any ST can make to enable it to run MSDOS.

Current emulators are based upon XT specification hardware using an 8086 CPU - no match for the ST itself - and provide only modest performance when compared to the faster PCs. But now German company Vortex, has produced a new generation of PC emulators for the ST.

ATonce as its name suggests, emulates an IBM AT by using a contemporary Intel 80286 CPU running at 8MHz. Performance is a leap ahead of the V30-based PC emulators with a claimed Norton speed rating of 6.5. PC-Speed, SuperCharger and pc-ditto II all reach a Norton rating of about 4, making ATonce around 50% faster.

The emulator makes extensive use of the ST's existing I/O facilities, including support for serial and parallel ports, a standard Atari mouse, battery sustained clock, and sound generation.

With a 1Mb ST, you'll have 704K of RAM available to DOS and any extra memory in 1Mb or more machines, can be accessed in full from DOS right up to the 4Mb maximum.

Video support is CGA, Hercules, Toshiba T3100 and Olivetti G0317 - EGA, the PC video standard which is closest to the ST's low resolution mode, will not be supported in the first version.

It's a safe bet however, that Vortex is working on the popular display standard and once available the emulator will be unbeatable.

The ATonce circuit board is an internal solder-in design which

The new ATonce PC AT emulator - set to cause a storm in the highly charged PC emulation market

remarkably, is smaller than PC-Speed installed in a similar way. STE and Mega ST owners can use optional adapters for plug-in convenience. But will this increased performance cost even more than present emulator designs?

Indications are that ATonce will undercut all existing hardware PC emulators. UK distributor Silica plans to launch the product at an introductory price of £199 rising to £249 after a couple of months - still fiercely competitive. No date has been set.

Silica expect to offer an official fitting service with complete guarantee protection. For the ultimate in PC emulation, contact Silica on 081 300 3399.

• Hans Sack, designer of the PC-Speed emulator, has developed an 80286-based version of his highly successful PC emulator. AT PC-Speed is likely to appear in the UK during July with a price of £20-£30 over that of the current XT version.

Just to add fuel to the fire, Sack is reported to be working on an even faster '386 version, ready for release by Autumn this year.

For more information on the PC-Speed range, contact Gasteiner on 081 365 1151. ●

16-BIT FAIR GOES TO NOVOTEL

Due to the popularity of the 16-bit Computer Fair, organiser Westminster Exhibitions has announced the dates for the third 16-bit Computer Fair.

The next show, is to be held at the Hammersmith Novotel - a slightly more endearing venue than the Royal Horticultural Halls.

The much awaited event will take place between 4th and 6th January 1990. For more information call Westminster Exhibitions on 081 549 3444. ●

Silica steps up training and support

Major Atari dealer Silica, has increased its technical support capacity to seven full-time staff. This will enable Silica to expand its range of training courses to cater for beginner, intermediate or advanced ST system usage, plus individual application training. For more information about training and technical support, call the Silica Atari team on 081 309 1111. ●

Font Designer

PCG's sophisticated PostScript font designer could eventually support Calamus and PageStream outline font formats. The PostScript page description language has been a very important element of the Desktop Publishing revolution but despite this, the ST has managed to go from strength to strength in the low-cost DTP market with relatively little support for PostScript. Now, with the UltraScript PostScript emulator and the new PostScript-based version of Fleet Street Publisher, the standard is starting to gain importance for the ST DTP scene.

PCG has produced a PostScript font editor with a remarkable specification giving total control over almost every aspect of font design and character specification to a high degree of accuracy. Users can build a 'parts library' to store character components such as serifs, which can be used to speed up the production of a font, encourage consistency and even make the font information more compact and efficient.

The program has numerous other features including stem guides, Adobe Illustrator-like curve control handles, live on-screen curve redraw, scaling, character composites, and a vast amount more. The program handles PostScript Type 3 fonts, UltraScript fonts, and there's a capability to use the faster and more compact PostScript Type 1 fonts.

Fleet Street Publisher 3 should be supported with its UltraScript-based font system, and PCG hopes to offer Calamus and PageStream compatibility in the future. Font Designer is available now for the extraordinary price of only £50 - a useful tool for those who need to edit or create PostScript fonts, or wish to develop fonts using PCG's own font description language. And it's a handy utility for those wishing to explore the fascinating world of typography and font construction. A demo version is available for £3.50. To find out more about the product, call the company PCG on 0229 836 957.
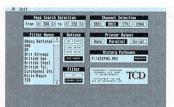
TELETEXT BOOM FOR ST SOFTWARE SCENE

The Microtext Teletext decoder is based around an auto-tune Television receiver and gives full access to all Teletext transmissions on the four UK TV channels

ProShare now has a Teletext module enabling down-loading of share price information via the Microtext receiver. The data can then be fed into ProShare for graphing and analysis

Importing share data from Ceefax or Oracle into K-Spread 4 opens up possibilities for share data processing. Note one of the Ceefax share pages in the screen - live Teletext inside your spreadsheet!

Less than a year after its launch on the ST, the Microtext Teletext adapter has generated a considerable amount of interest among ST owners and software developers.

The Teletext receiver acts as a low-cost data capture device that takes information broadcast alongside ordinary TV pictures, then feeds it into software for further processing. So far, most interest has been shown in the stock and share data listed by Ceefax and Oracle Teletext services and updated six times a day.

The first program to link up to the Microtext adapter (£129.50 and it's a television receiver too...) was the share analysis package Market Breaker, which can take share data through the Teletext receiver directly into the software. Market Breaker costs £69.95 and is available from the manufacturers of the decoding hardware, Microtext.

The latest development sees two existing software packages emerging with special Teletext options to facilitate automatic data capture over the airwaves. ProShare will shortly have a separate Teletext download module which is designed to capture share information from sources such as the ordinary share price listings pages on Ceefax into ProShare readable data files for instant analysis and graph plotting. They then show share performance, highlight trends, and even suggest ideal trading opportunities.

Registered ProShare owners will receive a free upgrade and the price remains at £49.95.

Hot on the heels of ProShare is Kuma's popular spreadsheet package K-Spread 4, which will also have a Teletext share data capture facility. K-Spread will enable share data to be fed directly into the program for instant and automatic calculation using almost any conceivable user-defined formula. With the power and flexibility of K-Spread 4, this is possibly one of the most versatile ways of processing share data.

K-Spread 4-T will cost just a little more than the standard version and registered K-Spread users can upgrade for a small fee. Having this automatic capture facility removes the need for tedious keying-in of data. It also promotes the ST, in conjunction with Microtext and any of the software packages described here, as a serious tool for automatic share monitoring and analysis - ideal for private investors, or anyone interesting in monitoring the share market.

If you're interested in the Microtext Teletext receiver or Market Breaker, contact Microtext on 0705 595 694. TC Developments produce ProShare, phone 0937 61145, and Kuma is on 0734 844 335.

• Microtext is currently putting the finishing touches to the International version of its Teletext package, which will soon be suitable for use throughout Europe.

New scanners from Pandaal

Pandaal Marketing (the marketing division of Kempston Data) has released a new range of image scanners with improved scan software. The new hand-held resembles the original Daatascan model, has a scan width of 105mm and works up to a maximum resolution of 400dpi.The £199.95 Daatascan Professional package also comes with new scanning and image handling software featuring a neat and friendly user-interface with performance to match.

The original 200dpi Daatascan Personal is still available for £169.95 and comes with the Daatascan Plus soft-

The new Daatascan Pro software is a fast and flexible image editing utility

ware. An upgrade to the Pro software will be offered at a later date.

On the way from PML is an ingenious A4 scanner which can be used free-hand or will automatically feed documents using a base holder with a built-in motorised roller. This will be supplied with the Daatascan Professional software. PML could also be releasing an interface to the Canon A4 roller scanner. No price has been set for either. PML is also offering a bundle deal comprising Daatascan Personal or Daatascan Professional with Timeworks DTP for £199.95 and £229.95 respectively. Further details by contacting the company on 0234 855 666.

Stacy - Further development work to improve battery-bashing power consumption has ensured short supplies

Stacy supplies held low during redesign

Atari's lap-top ST the Stacy, has still not reached full production despite being in demand the world over. At its launch, the machine was justly praised for performance, compactness and low price. But unfortunately, a hard drive equipped Stacy can run for barely half an hour on its 12 C-size batteries. This is clearly inadequate and Atari UK has made a few unofficial noises to register the company's own surprise at the machine actually reaching the production stage.

To correct the situation, Atari is reported to have taken the major step of re-designing the Stacy motherboard so that it consumes less power and runs for a target 3-4 hours average use on one battery pack. This will be achieved by using low-power CMOS chip technology, low-power floppy drives, and a possible revised LCD screen and back-light.

Stacy will not change radically although there could be a rechargeable sealed lead acid pack or high capacity NiCad cell available as an option. Because of the strong demand for this desirable product, Atari is still supplying Stacys in small quantities, but as a mains-operated portable rather than a 'use anywhere' battery-powered machine.

The music market is the biggest taker and all of the Stacy owners who talked to 'USER were quite prepared to have the machine even as a mains portable. Expect to see the revised machines selling in vast quantities towards the end of the year.

1040STE 'BUSINESS AND PLEASURE' BUNDLE LAUNCHED

Atari has launched a new ST bundle based on a 1040STE. Called the Atari 1040STE EXTRA pack, this new promotion is intended to offer an attractive all-round package for those wishing to use their personal computer for leisure and productivity use.

The 'extra' refers to new features of the STE including the blitter, faster TOS1.6 operating system, stereo sampled sound, hardware scrolling, 4096 colour palette, extra controller ports and easy memory expansion to 4Mb.

The STE is bundled with a range of software placing emphasis on the 'productivity' angle with a selection of serious software, plus in the shape of Prince (ARC's strategy game), HyperPaint and STAC, the adventure creator.

Productivity software is based on earlier versions of Kuma's popular K-series of products,

A new STE pack from Atari - includes a 1Mb machine together with a range of good software, all for £499.
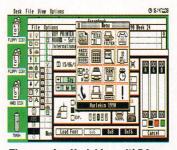
albeit renamed as ST-Word, ST-Base, ST-Calc and ST-Graph - word processing, database, spreadsheet and business graphics. Kuma will offer an upgrade path for users wishing to trade-in any of the K-software for the latest release versions. This is an ideal opportunity for owners of the original ST to upgrade to an STE, and garner some good software.

HARLEKIN GOES COLOUR

Harlekin is a jack of all trades and quite remarkably, a master of most of them too. Unfortunately, the wonders of this neat utility have been limited to those with a mono monitor. But now Danish creators The Mermaid Group, has produced a version which runs in colour in medium resolution.

The new version works a treat with any colour monitor and even if you're using a TV set most of

The amazing Harlekin multi-DA - now in glorious technicolour

the big bold icons are quite easy to work with. UK distributors HiSoft, will supply the new Harlekin in one package containing both versions for high res mono and medium res colour use.

Existing registered Harlekin owners are offered a free upgrade. The retail price remains at £49.95 - not bad considering all that's in there. HiSoft awaits your mazuma on 0525 718181.

HiSoft upgrades popular packages

HiSoft's popular Devpac 2 assembler has been revised and improved along with other key ST products in a new round of upgrades. Five popular products from HiSoft have been updated and official upgrades are now available. The TurboST software blitter is up to version 1.8 and boasts greater compatibility and performance, plus support for the Moniterm A3 screen.

Spectre GCR advances to 2.65 giving faster Mac disk recognition, full MultiFinder support, improved SLM804 laser handling and compatibility with the A3 screen. The HiSoft BASIC and

Power BASIC interactive compilers are up to version 1.3 with a couple of bug fixes and some new features taken from the Amiga version.

The highly acclaimed DevpacST2 assembler reaches version 2.2 to offer

a number of major enhancements including faster assembly, 30% faster linking, improved optimisation and error trapping, and better support for command line interface users. The debugger now gives instant disassembly listings and has better searching functions.

Registered users of any of these products can upgrade by returning their master disks to HiSoft together with a £5 upgrade fee. Unregistered users should register to ensure they don't miss out on new developments. HiSoft, The Old School, Greenfield, Bedford. MK45 5DE, 0525 718181.

⚛ ATARI ST and C= AMIGA

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£349.00
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PowerPack includes:
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★ All leads, manuals PLUS MOUSE and free mains plug!
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520STFM DISCOVERY PACK
£279.00
NEW!!

NEW! fantastic value for money pack includes:
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★ UTILITY PROGRAMMES inc STOS GAME CREATOR, NEOCHROME painting package and FIRST BASIC programming language
★ ST tutorial programme and 'DISCOVER YOUR ST' beginners guide to the ST computer
★ PLUS MOUSE, MOUSE MAT, MANUALS, ALL LEADS, METACOMCO BASIC AND MAINS PLUG!

1040STE BUSINESS PACK
£449.00

★ Includes the new 1 megabyte 1040STE keyboard plus over £200 worth of business software including WORD UP wordprocessing software, featuring glossary and mail merge, K-Spread 3.0 spread sheet and SUPERBASE PERSONAL Database software. Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.

MEGA 1 BUSINESS PACK
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Features:
★ Separate Keyboard and System Unit
★ Inc. all software supplied with 1040 STE Business Pack.
★ Blitter chip installed for faster graphics
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Competition Pro 5000 Joystick....£13.95	Box of 10...................................£13.95
Competition Pro with Autofire......£14.95	Memorex Disk Box
Konix Speedking Joystick............£11.95	For 40 3.5" Disks.....................£8.95
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Plain blue Mouse Mat....................£4.95	Control Centre Atari or Amiga £44.95

Contriver Amiga and ST Mouse with FREE holder and Mouse Pad £20.95

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Star LC10 including interface lead for ST/Amiga.......................£169.00	
Star LC10 colour including interface lead for ST/Amiga.........£219.00	
Citizen 120D including interface lead for ST/Amiga................£139.00	
SEIKOSHA 80 COLUMN PRINTERS – AMAZING PRICES	
Seikosha 9 pin NLQ including interface lead for ST/Amiga.....£139.00	
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£399.00

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★ A further £230 worth of Games Software, including BUGGY BOY, MERCENARY, BARBARIAN, WIZBALL & six more games.
★ FREE MOUSE MAT JOYSTICKS and 10 BLANK DISKS.
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Features:

★ Amiga A500 + TV Modulator	★ Maxiplan 500 spreadsheet
★ Midi Interface + Software	★ Amiga Logo, BBC Emulator
★ Kind Words II word processor	Deluxe Paint II
★ Page Setter DTP	★ Mouse Mat, 10 Blank disks,
★ Super Base Personal Database	and disk wallet

AMIGA 1 MEG BAT GAME PACK
NEW
£499.00

1 Meg Bat Games Pack includes:
★ Fitted 1 Megabyte Memory Expansion + Real Time Clock Card
★ Everything listed for the A500 Bat Game Pack
★ DRAGON'S LAIR 1 MEG MEGAGAME!

EXTERNAL DISK DRIVES

Atari SF314 1 Megabyte..£139.00	
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Access   **VISA**

LAVADRAW

Atari Germany plays an active role in software distribution by giving promising third-party products its seal of approval and re-packaging them in Atari's standard blue-and-white boxes.

First Word Plus, the Adimens database and Calamus among others were introduced to the market in this way. The adoption of Lavadraw as the 'official' monochrome art program therefore, generated considerable excitement - another heavyweight joining the crowded field of German painting and drawing giants?

Like MegaPaint, STAD and Creator (the other monochrome-only offerings from Germany), Lavadraw aims primarily at the Desktop Publishing market. The size of the work area is related to the intended printing device (up to DIN A4 at 300dpi for lasers), and all operations take place at output resolution. Scanners can be driven from within the program and Lavadraw includes its own high-quality bitmap fonts, as well as a utility to convert Signum fonts. It's even possible to call a word processor of your choice as an external application, import text, and then reformat it in Lavadraw's own text editor.

In addition to the now common file formats (.IMG, Degas), Lavadraw can read and write Calamus raster graphics (.CRG) images. The basic drawing functions (lines, circles, polygons and so on) are provided in two versions, object-oriented and bitmapped. The advantage of the former is that they can be used over the entire page, while the latter are restricted to the size of the current screen. Unfortunately, most of the extensive armoury of clever effects provided by Lavadraw - projections, distortions, patterns and frame generation, sine waves, skewing and solarisation are similarly restricted. This also applies to a lasso which automatically tightens itself around the contours of the object. Unfortunately, the lasso can't be used with scanned images larger than 640*400 pixels.
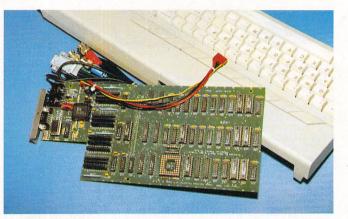
The normal GEM user interface is all but ignored in favour of a vast array of icons and a non-standard, pictorial menu bar which enables access to desktop accessories. A range of printers is supported, and additional modules are available for loading and editing GEM metafiles, large-screen monitors, and further image processing functions, as well as additional scanner drivers (the basic version supports only the Hawk and Spat models) and font packs.

Lavadraw is a little disappointing when compared with Mega-Paint, Creator and even STAD, but watch out for successor Graffiti, rumoured to do for monoart what Calamus did for DTP.

Lavadraw costs DM148 (about £50) from Atari Computer GmbH, Frankfurter Strasse 89-91, D-6096 Raunheim, or its creators K&L Datentechnik, Bahnhofstr. 11, D-3551 Bad Endbach, Tel. 010492776-8145.

The icon panel is called up or hidden with a right mouse click. On the right, there's a panel indicating the position of the current screen

A reduced full-page view can be superimposed on the current picture to help you to find your bearings

The ISAC colour board for Mega STs. Provides s a full A3 colour screen when hooked up to a suitable Multisync monitor

ISAC colour board

Fed up with 512 colours, restricted by the ST's 320 by 200 colour resolution? STE colour resolution still not good enough? What you need is an ISAC video board and a big multisync monitor. ISAC plugs into the expansion bus of a Mega ST, providing a selection of new screen modes with far greater resolution and more colours.

Produced by American company Image Systems Corporation, ISAC requires TOS 1.4 or 1.6 to run, so you'll probably have to obtain one of the elusive TOS upgrades before being able to use the board with your system. Atari's own monochrome video board and A3 screen also requires TOS1.4 - both TOS1.4 and the A3 screens are not yet widely available in the UK.

ISAC provides a non-interlaced 1024 by 768 pixel resolution in 16 colours, plus a faster duochrome mode with the same resolution. There's a palette of 4096 colours to choose from and the blitter is fully supported. The board has a 68881 math co-processor socket - an option that can be used to increase the performance of some programs (DynaCADD is one obvious example).

Image Systems claims that most well-behaved GEM applications will work with ISAC, making use of the extra resolution and the board is supplied complete with leads and driver software. The 50Hz multisync monitor however, is not supplied but you can use a cheaper VGA standard monitor to get an 800 by 600 resolution.

ISAC is in need of a good UK distributor to provide proper marketing and support for the product. Contact Image Systems Corp., 11543 K-Tel drive, Hopkins, Minnesota 55343. USA. Tel: 0101 612 935 1171.

Up, up and away?

Every holiday season, the safety of air traffic control systems seems to become a matter of intense public interest. Apart from the increasing workload for the control tower staff, the efficiency and reliability of the computer systems deployed has given rise to concern.

In Frankfurt, one of Europe's busiest airports, you'll find an unexpanded 520ST with two floppy drives. Worried? Visions of rows of bombs and quick resets while the sky traffic descends into chaos? But don't cancel your continental holiday or triple your assurance policies just yet, for the ST in question doesn't actually guard the life of a single passenger, but serves as the Frankfurt link in the AFTN and SITA communication networks between major airports, sending and receiving notifications of delays, cancellations and flight restrictions.

To cover any eventualities, a backup system of slightly higher specifications complete with hard disk and SLM804 laser is maintained by a secretary who generates correspondence using First Word Plus and Calamus. "Vorsprung durch Technik", as they say...

HyperLINK multimedia database

HyperCard caused a storm in the Macintosh world and although initial excitement has long since died down, there's still no ST version of the this freeform information management program. But now JMG Software International, is developing something along the lines of HyperCard.

To be called HyperLINK, JMG's new package combines hypertext features with graphics, sound and data manipulation. The idea is to provide a totally configurable environment in which text, graphics and sound can be browsed, read and played with the minimum of complication - a kind of Multimedia database with a super-friendly front-end which enables you to build your own HyperLINK-based application.

Hypertext is a system of data handling which involves presenting text in small linked topics for easy extraction and cross referencing. Essentially, it's all about making information easier for users to extract from computers. This technique also applies to graphics and sound.

HyperLINK enables all forms of data to be controlled with external links to other storage devices, such as Atari's CDAR 504 CD-ROM drive.

Other possibilities exist such as connecting two STs together with a serial or MIDI link so that data and peripherals can be exchanged and shared. And once developed, HyperLINK applications can be compiled to a stand-alone program for distribution as a complete tailored system.

This unique multimedia database and hypertext system should be available towards the end of the year.

JMG Software International Inc, 801 Mohawk Road West, Hamilton, Ontario L9C 6C2, Canada Tel: 0101 416-575-2867.

MEGAFLOPPIES ON THE ST

Disk formats used by the ST and IBM PC and clones are so similar, that swapping data between the machines presents few problems, provided the PC involved has 3.5 inch drives and the disks are formatted on the PC.

There's a very different situation however, with PC ATs and PS/2s using high density disks with a 1.44Mb capacity - although they appear similar to the uninitiated, the data recording density used by high density floppies is just too much for ordinary low density ST floppy drives to cope with - consequently, high density floppies can't be used.

German hardware hackers of course, relish challenges and so it was only a matter of time until the German publication known as ST Computer magazine published detailed instructions for connecting a TEAC high-density drive to the ST, complete with a listing of the necessary formatting routines.

The trick consists of making the ST's floppy disk controller chip running at twice its normal clock rate of 8MHz by tapping the shifter for its 16MHz - this is the same method as that employed by the HyperCache CPU accelerator.

The hack had hardly been published in ST Computer magazine, when the first commercial vendors of 1.44Mb drives for the ST appeared on the scene. Interested? Then contact the following people who, for DM 49 (approx £17) will sell you a complete kit (with German instructions) minus the actual drive mechanism: Digital Data Eicke, Nordring 9, D-3000 Hannover, Tel. 01049511-637054.

Or you can ask ST Computer for copies of their January and February 1990 issues. ST Computer, Heim Verlag, Heidelberger Landstr. 194, D-61 Darmstadt, Tel. 010496151 56057, Fax 010496151 55689

...and start enrolling for that German beginner's course!

PD resources pooled

The vast range of Public Domain software for the ST has spawned a rapidly growing number of rival PD libraries, often run from a back bedroom with different catalogues and confusing price structures.

Quality control is not always what it should be, and there have even been rumours of virus attacks caused by PD disks obtained from less reputable suppliers.

In the world of MSDOS, the trend has been to distribute PD and shareware through large, commercial libraries. This has tended to push up prices, but has reduced the role of fly-by-night cowboy outfits and all but eliminated the virus problem. Small wonder that in Germany, where so much of the better PD for the ST originates, similar moves are afoot.
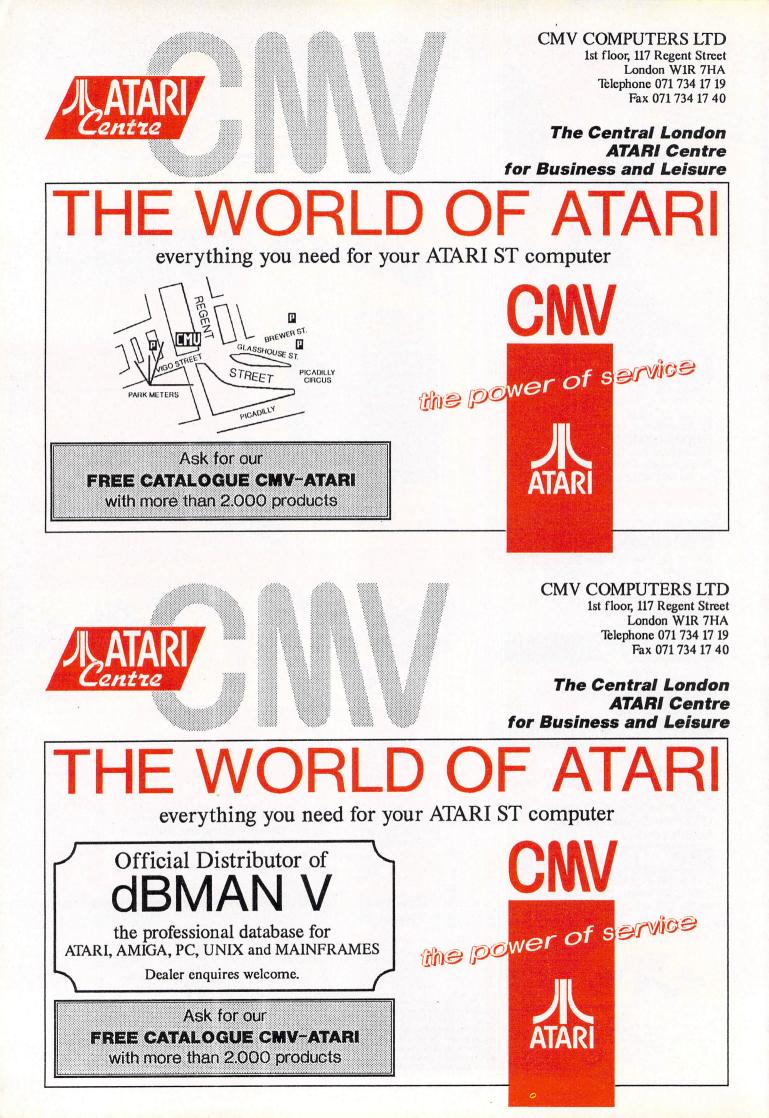
Two libraries in particular, have come to dominate the scene: the PD Pool association of 30 or so dealers who advertise a combined collection of 120 double-sided disks in the computer press, all properly documented, thoroughly tested, and guaranteed virus-free, and the PD library run by the leading ST magazine ST Computer, comprising 270 disks.

There's even a glossy, monthly journal specialising in ST PD called 'Atari PD Journal fur die Praxis', which reviews new software, keeps track of updates, and publishes helpful application hints and tips. Some of the more idealistic PD purists may scoff at this degree of commercialisation, but there can be little doubt that the average user benefits from such improved organisation. The PD journal, as well as a catalogue and disk ordering service, can be obtained from Heim Verlag, Heidelberger Landstrasse 194, D-61 Darmstadt, Tel. 010496151-56057, Fax 010496151-56059.

EMULATION WARS

With PC-Speed and SuperCharger, German companies have pretty much monopolised the MSDOS emulation market. But not content with providing access to the PC-XT standard, the latest development is the appearance of AT emulators.

Vortex, known in this country for its hard disk drives, has just released ATonce, which incorporates a real Intel 286 processor in place of the NEC V30 used by the current emulators.

Hans Sack, designer of PC-Speed (which claims 20,000 sales in just under nine months), is promising AT-Speed in time for the big Atari Show in Dusseldorf this August. Meanwhile on the horizon, looms the 386-based Delta Module from Omega Systems - as yet unseen anywhere but in Omega's advertisements. Watch this space!

Split at Branch Always

Co-author of some of the famous Shareware 'Quick' utilities Ignac Kolenko, has left Branch Always Software, the commercial venture started a year ago by Canadian PD and shareware duo.

Branch Always - manned by Darek Mihocka - will continue to serve existing registered users with further development of utilities for the ST. Quick ST II and Quick Tools will continue to be supported.

The split has been an amicable one and Kolenko has re-affirmed his support for the Atari community, but states that BAS was taking up too much of his spare time. Both Ignac and Darek have done much to promote shareware with solid programs and good support to back them up. Despite this move, expect to see Branch Always Software produce a few more gems for the ST.

World Newsdesk...

Gunter Minnerup: Respected freelance journalist, Gunter is German and ideally placed for news from the ST scene

J J Leiberwitz Jnr: Brother to Harvery and budding ST journalist

John Molsen: Canadian freelance with a sound knowledge of all things ST

SEX, LIES AND GENLOCKS

Denied on the ST because of technical difficulties, affordable video genlocking has at last arrived. Swathed in designer clothes, haircut and accent, Roland Waddilove shouts lights, camera, action!

Since the beginning of the '80s, desktop video (DTV) has been the medium for effects-hungry music promo and film makers looking for an outlet. Cheap, powerful computers and a variety of electronic gizmos enabled video jocks at Channel Four and the Beeb to produce a dazzling array of gosh-wow 'kiddie' TV shows and teen-tune outings with snazzy video titling. One of the most popular chart music programs is Saturday morning's The Chart Show, featuring pop videos with a computer screen overlay providing information on the band, video, single and so on.

This overlay effect is produced using a device known as a genlock. Clever electronics mix a TV picture or signal from your video recorder and computer output together on the same screen to startling effect. You've got the powerful, cheap computer, what's to stop you from achieving stunning video success? Well until very recently, synching a TV or video signal with the output from the ST was impossible without serious hardware modifications. To achieve the synchronising, an external sync pulse must be used to alter the ST's phaselock. Do this however, and you can seriously mess up the synchronisation between the ST's horizontal and vertical scanning - starting to see the difficulties?

BUT WHAT IS DTV?

In simple terms, desktop video means using a computer, such as your Atari ST, to enhance a video production. Using computers in the film industry isn't a new idea and as far back as 1976, George Lucas used computers to control the movement of cameras in his production of the classic sci-fi escapade, Star Wars.

Five years later the home computer revolution began with the ZX81, and although Sir Clive claimed it could run a nuclear power station, it wasn't exactly suitable for desktop video applications. Another five years, and the availability of 16-bit computers meant the video world would never be the same.

Unfortunately, you can't just take the ST's monitor port output, feed it into a video set-up and expect to see a meaningful picture on the screen. The signals produced by the picture frame generating circuitry in the computer need to be synchronised and locked (genlocked) to the video signal before the two can be combined and displayed on a monitor or TV screen.

Strictly speaking, there's no such thing as a genlock. Genlocking is what you do to two pieces of video equipment to make them compatible with each other, but often the word is used to name the hardware which performs synchronising of the sources.

To further complicate the process, the video recorder or camera sync can't be altered and VCRs can't keep to a constant sync speed. The solution is to make the computer video circuitry beat in time with the VCR's electronic pulse by altering the sync of the computer video signal so that it matches the VCR sync. Unlike other STs, the STE is able to accept an external sync and the Third Coast Technologies GST 40E genlocking device makes good use of this ability.

Ordinary STs have to be opened, stripped down to the bare circuit board, the shifter chip prised out, a small PCB fitted into the socket and the shifter chip piggy backed on top of the new PCB. A lead from the PCB is taken out of the case and connected to the genlocking device. The sync speed of the >

1. The video source can be a VCR or camera like the one here
2. You can manage with one monitor, but it's easier with two
3. A VCR is essential for recording your work
4. A simple keyboard like this can be used for adding the soundtrack
5. Music and sound effects can be recorded onto cassette then dubbed onto video
6. Your ST. The more memory you've got the better off you'll be
7. A sound sampling cartridge is a useful extra for adding special effects

THE DYNAMIC DIGITISING DUO

Product: ST Video Box
Supplier: Interactive Media Resources
Telephone: 0902 25444
Price: £389.50
Configuration: All STs (except STEs), mono and colour

The ST Video Box is massive compared to the Third Coast Technologies device and has so many leads your desk resembles a plate of spaghetti. Because the Video Box is designed to be used with STs other than the STE, you need to fit a small PCB inside the ST's case. Luckily, this operation doesn't involve soldering, but it does mean that you'll have to take apart the ST and strip it down to the bare circuit board (invalidating your warranty in the process).

The shifter chip is located inside a metal box glued to the circuit board. Find this, open the lid and snip off the hinges. The shifter is then prised out of its socket and replaced with a small PCB supplied. The shifter chip is then plugged into the new PCB and the ST re-assembled. A ribbon cable from the new PCB runs out of the cartridge socket.
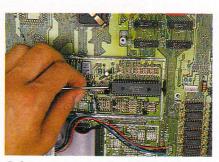
This procedure is not a difficult task, but if your computer is still under warranty then I'd suggest asking the service department of your local computer store to do the work for you. The ST will work normally when the add-on has been fitted so once the work is done, it can be left there permanently.

Unfortunately, the shifter chip in the STE is soldered in to the ST's motherboard so you can't use the ST Video Box in its present form with that particular ST.

Now you can start plugging in Video Box leads. One connects to the ST printer port, another to the ST monitor port, the shifter chip cable to the Video Box, an ST monitor and a video monitor to the Box and the camera or VCR to the video and audio in - phew!
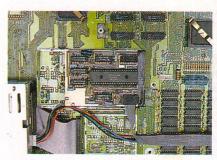
The ST Video Box from IMR is massive in comparison to the tiny GST 40E from TCT. The Multidat unit from IMR is a handy video splitter that takes the ST's monitor output and pipes it down four separate cables to four different monitors. Great for shop windows and shows

Before you can use the ST Video Box you must strip down your computer to the bare circuit board and prise out the shifter chip...

...and slot this tiny PCB into the socket. The shifter chip is then plugged into the socket on the new PCB

Using the Video Box is straightforward, simply boot the supplied program and select the mode of operation, start your video and begin editing. A video picture will appear wherever black is painted on the ST screen and the other colours are overlaid on top of the video picture. The reverse of this is also possible, so that black is displayed on-screen and the video appears wherever any other colour is painted.

With one of the popular art packages it's a simple matter to paint over the video picture, add titles or even create some simple animation.
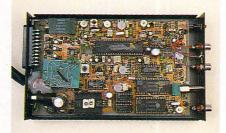
Product: GST 40E
Supplier: Third Coast Technologies
Telephone: 0257 472444
Price: £249.99
Configuration: All STEs (STs with optional adaptor), mono and colour

The GST 40E is small, neat and very easy to set up (if you have an STE). A cable from the back of the black box plugs into the STE's monitor port and the STE monitor plugs into a smaller black box in the middle of the cable. Connections on the front of the unit are for video in (camera or VCR) and video out (to a monitor or another VCR). There's an audio plug, but it wasn't wired up on this pre-production version.

The guts of the TCT genlock. Notice that the audio socket hasn't been connected

Visitors to the recent Atari show at the Novotel in London had a sneak preview of the GST 40E in action as it was up and running on the Third Coast stand.

Switch on the micro with the boot disk in the drive to sync the video sources, and you're ready to start work.

Apart from the boot disk with the synching software, nothing else is supplied. That isn't a problem however, as most of the stuff you'll need such as art and graphics and music programs can be found in the public domain.

If you have an ordinary ST rather than the all-new, housewives' choice STE, then you'll have to fit a small PCB into the shifter socket on the ST's main circuit board. Fitting is a fairly simple procedure, exactly the same as for the ST Video Box.

TIP STRIP

● If you haven't got flying erase heads on either your VCR or camcorder, and your video editing produces nasty glitches, then try fading out to a solid colour like black or white just before the glitch and fading in after it. Fill the ST's screen with any colour apart from zero just before the glitch, then clear it afterwards.

● If you are shooting an 'old world' scene from yester-year and there's an unsightly satellite dish or TV antenna on the roof of a cottage you're filming, it's quite easy to remove it and you don't need a ladder and hacksaw! Shoot the scene as normal and when you get back to the studio, look at the part of the picture where the satellite dish is.

Boot up your art package and choose a palette colour to match the background around the dish (the STE is better than an ST as it has 4096 colours compared to 512 - so you can match the shade more precisely). Now simply paint over the offending item then fill the rest of the screen with colour zero.

The video picture will be displayed over the whole screen (through colour zero), except for the TV dish which you've cleverly painted out!

● If you're buying a video recorder for DTV purposes, choose one with flying erase heads for glitch-free editing. Video heads also take time to get up to speed so a machine that can pre-roll the tape to allow the heads to accelerate up to speed will give smoother edits.

● If your art package hasn't got the font you want for titling, use a hand scanner to scan in text from a magazine, newspaper or book. The letters can be grabbed as separate blocks, touched up and saved to disk. Then paste them onto the screen to make up titles.

● Special effects used in videos are sometimes discovered by accident. Try dubbing a scene from a video many times so that the quality drastically deteriorates and the colours start to bleed. The scene could be the view through the eyes of an alien or monster, or perhaps a hallucinating patient after a knock on the head.

STs video circuitry can then be speeded up and slowed down as necessary to match the other video sync from the VCR or camera. Not a job for the faint of heart!

SILICON SLIDE SHOW

Computers have a wide number of uses in all fields of video production, overlaying graphic displays, animation, sound effects and music. Views through the eyes of a robot can easily be simulated. Remember The Terminator? Schwartzeneggar's bionic eyesight was simulated by overlaying a computer generated grid and a few rapidly changing numbers (and the F word…) on top of the video display. Looked great, right? But you can do that with your ST.

What about the roars of attacking space ships in Star Wars or the Star Trek movies? In Star Wars they were sampled sounds of the roaring of lions played backwards! You can do that on your ST too.

Channel Four's Chart Show features pop videos overlaid with menu bars and pop-up windows displaying gossip and info on the stars. You can even do that using an ordinary ST!

The list of effects is endless given an insight into the trickery. You could present a yearly company report on video, including the technical data such as sales, profit and loss accounts directly from the spreadsheet and cutting to scenes of speeding production lines or packed shop floors (or guys lolling about puffing Gauloise - it all depends upon where you work).

All manner of electronic equipment in sci-fi videos can easily be simulated on the ST using graphics and simple animation programs. Radar scanners, missile targeting systems, radioactivity counters and so on.

The range of educational videos that can be produced is enormous. Anything from engines to flowers can be labelled, taken apart, drawn diagrammatically, shown moving or growing and so on.

DUB CITY

Once you've produced a video, you'll want to edit it (not with scissors and sticky tape - you'll ruin the equipment). The editing process is carried out electronically.

For glitch-free editing you need to have flying erase heads on either the VCR or camcorder. Flying erase heads printed on a camcorder or VCR are the electronic equivalent of go-faster stripes on cars.

To find out if your VCR or camcorder has them, try stopping a recording then starting again on a new scene. Replay the tape and watch for the display momentarily freaking out when the old scene is cut and the new one appears. If this happens then you've got problems.

You can edit the video as you take it, rewinding the camcorder tape to cut off the end of one scene and start recording the new one at the desired point. However, the usual method of editing is to play the camcorder and copy the sections you require on to a VCR. The camcorder is known as the slave deck and the VCR becomes the master. The process is called dubbing.

Making a dub like this is always necessary, and further dubs may be required when overlaying the computer displays and adding the soundtrack. Every time you make a dub the picture quality degrades by about 10 per cent so you have to try to keep dubbing to a minimum.

MIXING GRAPHICS

Genlocking devices generally work in a very simple way. One of the 16 colours in the ST's low res palette (chosen from either 512 on an ST or 4096 on an STE), will appear to be transparent when the video and computer pictures are overlaid. Usually it's colour zero.

Where colour zero appears on the screen, you'll see the video picture and where any other colour appears, you'll see the computer graphics. This is the way the Third Coast Technologies genlock works. Interactive Media's ST Video Box is also able to perform the opposite function, too. Only colour zero can be seen and where there are any others on the ST screen, you'll see the video in the combined display.

Once you've connected the necessary hardware, you can get the software up and running. But what software do you need? The package you'll use most is a paint program and the public domain Neochrome will cover most of your needs. Any art program will do, but the more text facilities it has, the more suited it will be to DTV.

Your first task after editing the video is to generate titles credits. Boot up Neochrome, Degas or your chosen paint package, select a fairly large text size and type in your titles. Remember that videos on televisions are usu-

Atari ST User
Productions

563   UNDO
STYLE   SIZE
✔PLAIN   6
  BOLD   8
  ITALIC   12
  UNDERLINE   14
  OUTLINE   16   28
PICTURE.NEO   ALIGN ◄ ■ ►
                FACE SYSTEM

Video titles are best produced on a computer, even though some camcorders have the facility to do this. Neochrome is able to generate text in a variety of styles and sizes, and it's free!

ally viewed at a distance of about 10 feet, so once you've entered the titles stand back about 10 feet from the ST's monitor and check that you can read them.

Be aware of the background that the titles are to be displayed over as you may encounter colour clash problems. Printing titles in green and overlaying them on top of a cricket pitch is likely to give your viewers eye-strain as they desperately try to read them. Pure colours like flaming red or brilliant white often don't look too good when genlocked and overlaid on video so choose colours which are a slight departure from the original for your titles.

Outlined fonts (letters with a black border), are good for making computer text stand out from a video background. If your art package doesn't have large enough fonts then you may be able to use a magnify facility to enlarge small letters. Large letters look good if they're anti-aliased, too. This means softening the edges of letters by choosing a colour midway between the letter colour and the background, then smoothing out the large steps of capital letter As, Ws and Vs.

Use programs such as Mandarin's STOS to design and animate sprites. STOS also has dozens of fade commands that will enable

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*Whatever your computer,
Contriver fits perfectly*

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w o r l d w i d e

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LEFT: This is the largest typeface available in Degas Elite and it's just the right size. Unfortunately, it has a very blocky appearance so is unsuitable for video titles RIGHT: The appearance of the letters can be vastly improved using the magnify facility to zoom in on each character. Smoothing, rounding and anti-aliasing can be carried out by hand to give a much better look. Notice the difference between the characters on the left and the previous title

Computer animations can be overlaid on top of video pictures to produce interesting effects. Mirrorsoft's film director can be used to create simple animation effects, like this cute John Crumpet Butters lookalike...

you to fade from one screen to another. Try hooking up your genlock and then fading to and from colour zero to dissolve the video display - it's just like Top of the Pops!
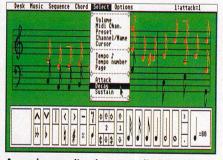
When your ST is genlocked to a video source its speed will be altered, and so too will the speed of animation or fade. Always check the speed with the genlock switched on.

SOUND AND VISION

If your VCR has an audio dubbing facility, you'll be able to add sound effects and a music track without affecting the video information. If it hasn't, you'll have to make an extra dub to add the sound effects and music.

Videos will almost always need music or special effects to make them really stand out. Turn down the volume on your TV next time you're watching a horror movie and you'll notice that it's far less scary without the special effects. The creepy sounds are used to build up a tense atmosphere.

Music can be generated via several

sources, from simple music programs such as Kuma's K-Minstrel to Cubase and a professional MIDI system. If you're not very musical, try to get a music program that enables you to bung notes onto a stave. With this facility, you can buy sheet music and copy it into your ST.

Make sure that the music you choose suits the scene that it's to accompany. Romantic music during girlie love scenes and spooky music during the neck biting (actually the two are probably interchangeable). Time the scenes with a stop watch and write the music to fit the length exactly.

Don't cut the music at the same instant as

the video cuts to a new scene as this looks odd. Cut the music either just before or just after.

The cost of the genlocking hardware has never been lower and the price of camcorders and VCRs is falling rapidly - even budget video equipment now comes with a host of advanced features ideally suited to DTV applications. Super-VHS quality pictures, flying erase heads for professional editing, audio dubbing for adding your own sound track, they've got 'em all. With a genlock and your ST, the only limitation is your own imagination. Stretch out and have some fun... ●

A music soundtrack can easily be added if your VCR has audio dubbing facilities. The sound will be re-recorded without affecting the video information. If it hasn't then you'll have to make an extra dub to add the sound track. Here, Kuma's K-Minstrel is being used to enter music which can then be replayed and recorded onto the video

A sound sampler can be used to record and replay special effects. STOS Maestro is being used here to create some sampled sound effects for a video production

OK, BUT WHAT DO I NEED?

• **Computer:** The more memory the better, you can then use simple multi-screen page flipping techniques for smooth animation.

• **Video cassette recorder:** Audio dubbing, flying erase heads and remote control are all advantages. If you don't have access to a VCR, pop along to a video movie rental store. These guys often have VCRs for hire. Typical charges are around six clams per night.

• **Genlocking device:** The Third Coast Technologies or Interactive Media Resources genlock. Both are good and fairly cheap.

• **Camcorder or video camera:** A camcorder with flying erase heads is the best for editing. VHS, S-VHS or S-VHS-C is the format to go for. Ignore bargain basement Beta equipment as it's out of date and rarely used. If you can't afford a camcorder (and not many people can), hire one for the weekend from one of the many high-street TV/Video rental

stores. Typical prices are around £25 for a weekend, but be prepared to leave a large deposit and have plenty of identification documents with you.

• **Art package:** Neochrome is free and easy to use. Degas Elite is cheap and one of the best.

• **Music package:** There are many good music packages around, though the best require MIDI equipment.

• **Sound sampler:** You'll need this for adding special effects.

• **Microphone:** Essential for documentary-type voice-overs. Any old mic from Aunty Jessy's reel-to-reel will suffice.

• **Lighting:** Natural daylight is fine, but there may be times when it's simply too dark (midnight for one, 3-15AM for another). Adding lighting opens up studio work.

USEFUL EXTRAS

• **Graphic and animation packages:** CAD, ray-tracing programs and the Cyber series of 2D and 3D graphic packages will be useful.
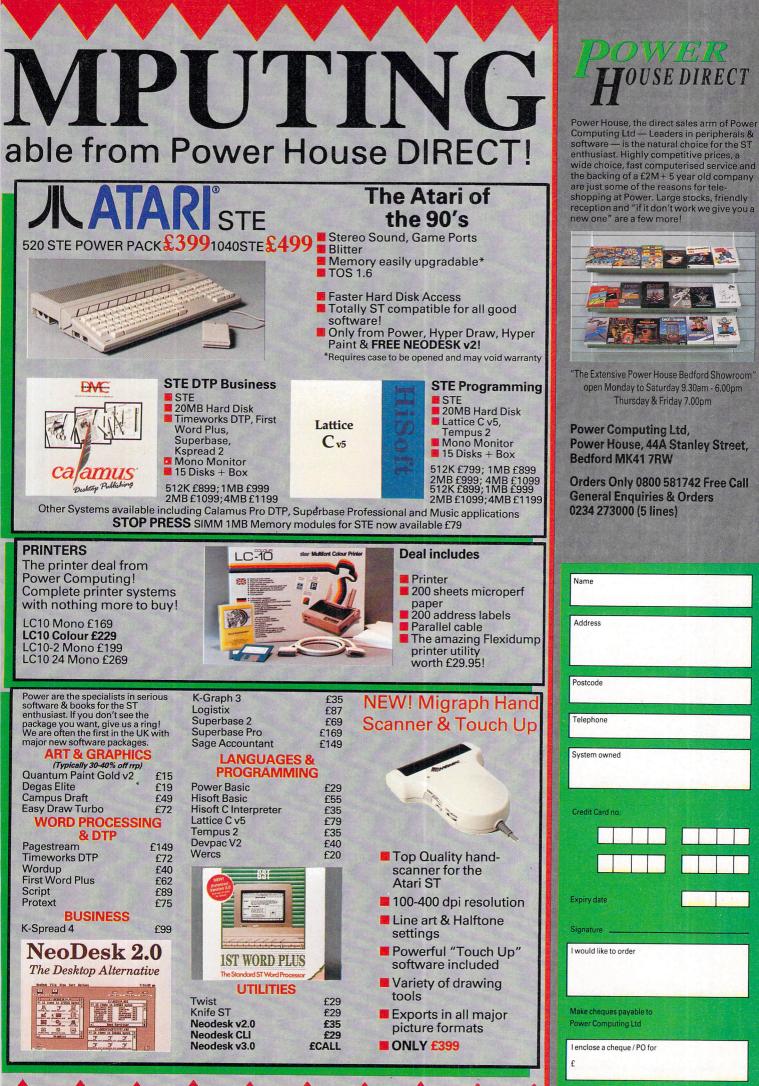
• **Digitiser:** This is useful for getting video images into the computer's memory. The images can then be manipulated, stretched, rotated or animated and pasted on top of the video picture.

• **Scanner:** Get 2D images such as photographs and drawings into the computer so they can be manipulated in various ways. You could point your video camera at the picture and digitise it, but the quality of the image won't be as good as a scanned one.

Digitisers and scanners may be useful for effects or getting graphs, charts and documents into the computer. Rombo's Vidi-ST is a cheap, easy-to-use piece of kit that will cover most of your digitising needs

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STU8

USERDISK
AUGUST '90

NITRO

An absolutely fantastic playable demo of the latest Psygnosis creation. Stunning graphics, sexy sounds and three complete levels (including a breath-taking night level) which will leave you quivering with excitement!

SAMPLE PLAYER

Two superb sampled sounds to add to your bulging library of special effects. And there's a ready-made Fast BASIC sample player subroutine to insert into your own programs.

DEGAS DISPLAY • RUN TIME

Why waste valuable disk space with 32k graphic screens when you can save them in compressed form? Can't decompress them? Well now you can, with three handy routines written in comprehensive HiSoft BASIC and powerful, clean 68000 machine code.

FILE SELECTORS • RUN TIME

Give your home-grown programs the professional touch by incorporating a tasty GEM file selector. More ready-made routines in Fast BASIC, HiSoft BASIC and C - save the hassle of programming them yourself and learn by example.

BENCHMARKS

How fast are so-called fast formatters that claim to improve disk performance? And is a hard drive really worth 500 clams? Find out with this powerful disk drive performance test.

TEST CARD • RUN TIME

Do not adjust your set... the picture isn't blurred, you just need glasses! For those with 20/20 vision here are two test cards to fine tune your monitor or TV. And as an added bonus, you can use it with your desktop video too.

SUPER BREAKOUT

Just another brick in the wall? Forget the Arkenoid clones, boot up the ultimate breakout game and join the demolition crew. Bags of screens bristling with aliens, crazy bricks and balls, balls and more balls!

FLEXDEMO

The ST's built in screen dump function is fine if you want all your dumps the same size. Using Flexdump however, you can dump quickly, slowly, roughly or with immaculate accuracy at the touch of a GEM dialog button.

MAGBASE

The most deadly database ever devised will help you keep track of all the amazing articles in your bulging binders of Atari ST User. Super search facilities enable you to find any article in any issue in microseconds.

XBIOS

Whether your taste in music is Donavan or Dvorak, Minogue or Mozart, you'll be able to rap with the best using this powerful music construction kit. Click tadpoles onto telegraph wires and pump up the volume!

NITRO'S ENORMOUS!

This month's stunning playable demo is massive! We had to archive (compact) the game just to get it on the disk. This means that you'll have to de-archive it before you can run it but it's such a good demo we know you won't mind. It's hassle, right? But archiving means we can squeeze even more goodies on the cover disk! Don't know how to de-arc a file? Follow these simple steps:

1. Double click on RAMDISK.TTP and type 300 into the box
2. Copy ARCX.TTP to the RAM disk (drive D)
3. Double click on the RAM disk (drive D icon) to open its window
4. Double click on ARCX.TTP (on drive D) and enter A:NITRO.ARC into the box
5. Copy everything on drive D to a new, formatted disk
6. Re-boot and double click on NITRO.TOS to play the game
7. Enjoy!

FLEXDEMO.PRG
Configuration: All STs, mono colour

Flexdemo is an incredibly powerful program which enables ordinary dot matrix printers to produce high (or fast or low) quality dumps of Degas and Neochrome pictures. Page lengths are available in the range 1mm to 10 metres in increments of approximately 0.3mm yielding a massive number of dump dimensions.

Up to eight identical screen dumps can be placed across the page so that multi-web tractor-fed labels can be used. You'll also find that ribbons which you'd normally throw away, can produce quite acceptable hardcopy using Flexdemo's multipass print.

The program comes with nine different printer drivers so no matter what make of printer you have, it will be possible to produce perfect dumps. Colour printer? No problem, there's also several colour drivers on the disk, too.

When you consider the staggering flexibility, the three pass select option, eight densities (dependent on printer) and upright, sideways, inverted, mono, enhanced and all combinations of these options, you have to admit that its pretty handy.

With dozens of options to choose from, you can fine tune the output to suite your printer

. . . .

DSKBMARK.PRG
Configuration: 1Mb RAM, mono and med-res colour

How fast is your hard disk? OK, maybe you can quote the manufacturer's access time to the nearest millisecond, but how does that translate to the real world? And what about hard disk caching programs and floppy disk formatters that claim to improve the performance of your disk system?

Here's a simple little trinket (HDBMARK.PRG) written in HiSoft BASIC that will put your hard or floppy disk drive through a rigourous performance test. The program loads and saves 500k of data, writes 30k of data forwards and backwards and performs a complex seek test. The timings for each test are displayed on screen.

To give you a baseline to compare with your own system, here are the figures for a standard format, double sided STE floppy disk:

Write 500k block of memory	= 78.8 s
Read 500k block of memory	= 27.9 s
Write 30,000 bytes forwards	= 82.4 s
Read 30,000 bytes forwards	= 58.9 s
Write 30,000 bytes backwards	= 155.5 s
Read 30,000 bytes backwards	= 133.6 s
Seek test	= 216.0 s

Improvements can be made by switching off the write verify function and using a fast formatter to skew the tracks. There are many PD programs to do this, try 'em and see what difference they make.

NITRO.TOS
Configuration: All STs, lo-res colour only

Dust off your crash helmet and fireproof suit and prepare to burn rubber with the hottest car racing action ever. Nitro is the latest racing sim to roll off the Psygnosis electronic press.

At first sight, Nitro looks similar to Super Sprint, but there's a host of extra features that give the game an enormous amount of player-appeal. There's a night driving level which is extremely tough - all you can see is the small area of road lit up by your headlights!

Play continues until you run out of gas and there are many items to collect during the game. Keep a sharp look out as you're speeding along the roads. To collect an item, run it over!

Gas Barrel = +100 gas
Money = +1 money
Nitro Boost = short boost of speed
Bright Bulb = double headlight
Dark Bulb = other cars lights go out
Sun = screen lights up

You can spend any money you collect in the parts shop and customise your hot rod with a high-speed engine, super acceleration, extra traction, gas, nitro boost and even a totally new car in case you've wrecked the old one (and there's so many thrills and spills you probably will!)

The screen scrolls up or down, but to make progress, move up the screen. And as a fantastic added bonus, up to three players can join in the fun at the same time - two drivers using joysticks and one sitting at the keyboard.

Control is straightforward, joystick movements are obvious and here are player three's keyboard movements:

Left z
Right x
Accelerate right-Shift
Nitro Booost (if fitted) ?

To start the game, press the accelerator (joystick fire or right-Shift) then move left and right to see cars. Press again to select a car.

Nitro is probably the best playable demo we've ever given you - make no mistake, this is the big one!

MAGBASE.PRG

Configuration: All STs, mono and med-res colour

Desk File Edit Options

```
BINDER : ATARI ST USER            1990
MAG.   :   3/90   VOL: 5   No: 1

Number : 2                              [↑]  [Alter]
Title  : GAMES REVIEWS_____  [Add]
Detail : NORTH AND SOUTH, AQUANAUT, TIME, TURBO OUTRUN_____  [Delete]
Type   : GAME REVIEW_____           [Search]
Page   : 19__                              [Print]
                                        [↓]  [Exit]
```

Forgotten when that important article appeared? MagBase searches through all your binders and selects the issue and page it's on

Faithful followers should have 54 glorious issues of Atari ST User, but can you remember what's in them? MagBase helps to jog your memory. 'USER's a goldmine of useful information, hints, tips and help - make sure you don't lose out by keeping track of your magazine contents with this powerful, custom designed database program.

MagBase can be used to store brief details about every article in each month's magazine. A number of magazines can then be stored in a binder. Powerful search facilities enable you to search for specific items in separate mags, whole binders or right from issue one!

When a .MAG file is loaded from disk its window appears on the desktop, displaying the binders contained in the file. A binder may be opened by double clicking on its name (more than one .MAG may be opened on the desktop as each is given its own window).

Each magazine contains a number of articles which can be accessed by double clicking on the appropriate magazine name. The article form then enables articles to be added to the list, deleted, altered, printed and so on. A new mag file can be created by using the Open File menu option and entering a filename which doesn't already exist on the disk.

SBREAK.PRG

Configuration: All STs, mono only

Many types of breakout-like game exist, why bother with another one? Because all of the existing games are missing something - they have some great ideas but are lacking others. And nearly all games work only in colour. Super Breakout contains most of the best ideas of the existing games and many new features to boot. Over 40 brick types all with special features. And there are bonuses, dozens of monsters, different level types and so on.

You can continue on the level where you were killed, there's high-score files, and the program remembers players and knows what their current status is. Level files can be changed easily, added and edited and there's a special level editor to

SAMPLE.PRG

Configuration: All STs, mono and colour

Sampled sound effects make a tremendous difference to programs particularly games, where they're used extensively. On this month's disk you'll find several more sampled sound effects, including a particularly sweet drum pattern. There'll be more next month so you'll soon build up a library of exciting effects to include in your own software or simply experiment with.

To replay the samples you need a suitable utility (also on the cover disk - thoughtful, right?) In fact, there are two versions: a Fast BASIC and a HiSoft BASIC listing. To replay the samples you'll need to boot up HiSoft (or Fast) BASIC and load SAMPLE.BAS then SAMPLE.BSC.
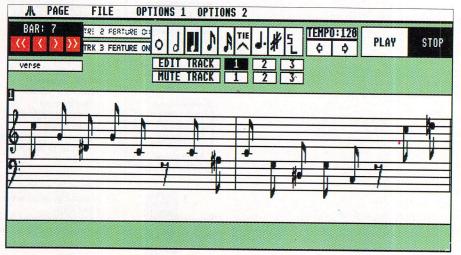
Run the program and use the file selector to choose sampled. Click on speed from the options in the alert box, crank up the volume on your monitor and stand well back. The samples are at 10kHz and are best when replayed at this reasonable speed.

Make music like Mozart (or Motorhead...) with maestro David O'Connell's powerful song editor. With the Xbios Music Construction Kit, you can easily include superb music in your home grown programs. Using around six commands, you can load music into your BASIC program, written with this program and it will play in the background while your software runs uninterrupted. And by including a few more commands, you can detect the
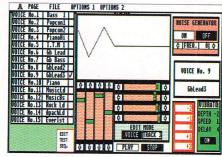
end of the music and either restart it or load in more music.

Don't worry if you don't can't compose to save your life because you can simply buy some sheet music and copy it into the

XBOISMSK.PRG

Configuration: All STs, mono and colour

program. There's a bevy of pre-defined voices but if you need something out of the ordinary for a special effect, you can flip to a voice designer and create your own. The program is entirely GEM-based and all you do is click on a note (a tadpole) and paste it on the stave (the telegraph wires) - couldn't be simpler!

Left: Enter your music on the stave using the mouse

Above: Create your own voices and save them to disk using the voice editor

RUNTIME

ISSUE TWO

Crammed from cover to electronic cover with programming ideas, help, advice and solved problems, RunTime is the World's first magnetic media magazine totally dedicated to ST programmers...

PROGRAMMER'S CLINIC

If you have an embarrassing silicon problem then come along to the friendliest clinic around. All appointments made in the strictest confidence.

GAMES WRITING

Whether you're an experienced STOSer or new to the game, you'll find a wealth of hints, tips and help for arcade action programmers.

DEGAS DISPLAY

Software is increasing in size faster than disks are dropping in price, save your pocket money by cramming more graphics than ever onto your floppies.

FILE SELECTORS

This month's Screenfull challenge has been met by a bundle of GEM file selectors. Chop out the code and insert it into your own programs.

GEM PROGRAMMING

Part 2 of the series delves even deeper into the VDI jungle. We reveal the hidden secrets of printing various text styles and sizes on the screen - and much more!

CLIP ART

Clip-art pictures for you to cut out and paste onto your DTP pages, and sound samples that can be included in your next arcade masterpiece.

Each month cover disk submissions arrive by the sack load and poor old Postman Pat's (and his black 'n' white cat) back must be under a tremendous strain. The overwhelming majority of programs are superb, but the storage capacity of ST disks is limited to around 800k which means that only a small number of programs make it to the 'USERDISK.

One of the reasons why programs take up such a lot of disk space is that they require one or more graphic screens. These are stored in either Neochrome or Degas format and occupy over 32k of disk space.

Since each screen is 32k long, requiring just two means that 64k of disk space is eaten up, even before you start writing a line of program code! What's needed is a way of reducing the amount of space the graphics occupy.

A Degas compressed screen is typically around 12k to 16k long - less than half the size of a standard screen. If compressed screens could be substituted for standard ones, you'd half the disk space required.

Saving compressed screens from Degas is easy, loading them into your programs isn't! But now, we present two amazing utilities that will load and display compressed screens. Just think, you can have lots of breath-taking screens featured in your programs without using valuable RAM memory. We've also provided fully commented source code so you can incorporate the subroutines into your own programs and learn how to construct your own routines - aren't we nice?

SCREENFULL

RunTime's Screenfull is an exciting new challenge. Programmers must write a program (or just a subroutine) that will fit on one standard monitor or TV screen. The program can be a game, utility, graphic designer, music and MIDI editor or even a business program, as long as the source code fits in just one screen, the choice is yours.

This month's Screenfull submissions are all supplied by programmer Janice Murray and demonstrate how to call up GEM's file selector to input a filename from within your own programs. It doesn't matter whether you use HiSoft or Fast BASIC, or even dabble in C - we've catered for all three languages.

Give your programs the professional look by including these tailor-made source code subroutines into your own programs. It couldn't be simpler!

TEST CARD

Don't miss out on the desktop video revolution! These two handy utilities will display your very own custom designed test card. Use them straight from the disk or modify and re-compile the source code to make something completely new. They are also ideal for tuning up duff, out of focus monitors and televisions - but don't go poking your digits into the back of them unless you're auditioning for Death Wish V. RunTime's editor Roland Waddilove, examines the VDI To see what can be achieved using a few simple VDI functions.
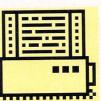
GETTING STARTED

RunTime apears as folder on side one of UserDisk July. To start reading the magazine, simply double-click the RunTime folder, then double-click the magazine icon. After a few seconds, you'll be presented with an opening screen consisting of a title page and standard GEM menu bar.

All the articles, features, news and reviews appear under the menus. For example, there might be a feature about accessing upper memory using C. To read this, select the correct menu from the bar, pull down the highlighted bar and release on the correct feature. Soon, you'll see a new screen consisting of the first page of the feature and a row of icons (show below) at the foot of the screen. You can now begin reading. If you wish to return to the menu, print a feature and so on, use these icons...

This is the icon which enables you to return to the opening GEM menu bar. Click this if you want to stop reading the current feature

Use this icon if there's a particular page of the feature which interests you and which you wish to have on paper

If you need to print the entire feature, tutorial and so on, this is the icon you need. Click here to send the complete feature to your printer

Often, as you're reading a feature, there'll be an associated picture which helps to illustrate a point. Click this icon to see the picture

Everyone, even learned programmers need help occasionally, if you find that some friendly advice is needed, click the cross

play test...

A Gargantuan grab-bag of gaming guff!

A} SALES CURVE ANNOUNCE STORM LABEL

The first game to appear on the new label will be a conversion of a Jaleco coin-op. Saint Dragon is an impressive little six-level blaster. The game is being developed by Random Access, the same team responsible for the totally brilliant Silkworm, so expect to see something just a little bit special. Saint Dragon should appear sometime in September.

As if they weren't busy enough already, the team is also working on a project known as SWIV. The game will basically be a vertically-scrolling version of Silkworm in which the helicopter and jeep will almost leap out of the screen. The team has developed the continuous loading feature first used in The Ninja Warriors. SWIV will feature continuous play with no real obvious end of level. SWIV is booked in for an October unveiling.

Heard of Jaleco's Big Run coin-op? The news is that Big Run will be an early 1991 release on the Storm label. Accompanying it will be yet another Jaleco tie-in, Rod-Land. This is a cutesy platform-style game in which you'll assume the role of a pointy-eared fairy armed with a magic rod. The storyline is far too smultchy to go into, suffice it to say this will be another sickly sweet game.

WORLD CUP YEAR '90
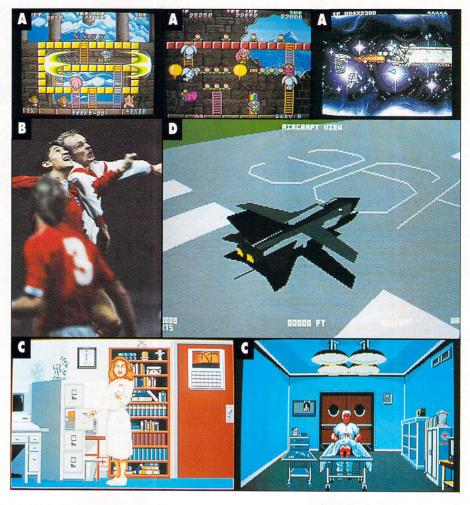
Empire has decided to bundle together the best soccer games to form a stunning compilation known as World Cup Year '90. The ST Version is available any day now and costs £24.99. Three award-winning games feature in the pack. Kick Off, Anco's brilliant footy game needs no introduction, ask any reviewer what they think is the best soccer game going. International Soccer in the meantime, provides frantic midfield action for up to four players. With night games and variable wind and weather conditions it will keep even the most demanding supporters busy. Finally, ST owners will be able to sample the ups and downs of being a football manager. Tracksuit Manager puts you in the hot-seat as you attempt to guide a team to victory. The game features nearly every aspect of managing and will keep you busy for hours on end.

B} GRANDSLAM'S ENGLAND

Grandslam has actually managed to acquire a licensing tie-in for its offering. The London-based software house has called upon the talents of the entire England squad to help with the game. Apparently the England title isn't just a selling point. The game features digitised pictures of all your favourite players, and you can alsomake the action a little bit biased. The squad is composed of twenty-two players and true to life, if one of your key players is injured then winning will be decidedly trickier.

According to Grandslam's Sales Manager Duncan Lowthian, "With this game, football fans everywhere will be able to re-run the World Cup to their hearts' content and then play many international games again, even after the World Cup; a real dream for all football fans."

England is scheduled for release around the end of June priced £19.95.

C} A MATTER OF LIFE AND DEATH

Life and Death is a simulator with a difference. Like most flight sims, you enter your name on the duty roster but instead of assuming the role of a captain or major, you'll be looking for the post of duty surgeon and while the military is killing people, you'll be trying your best to save them. Armed with a scalpel and lots of other medical equipment you'll be called upon to perform a number of life-saving operations. Read your patients' charts, take X-rays, perform blood tests and ultrasound scans. Ultimately you'll be able to make god-like decisions which determine whether your patient lives or dies. One thing's for sure, you'd better be a good Doc or Mindscape will have to release a morgue attendant simulator. Life and Death will be on the shelves as you read this, priced £24.99.

D} FIGHTER BOMBER MISSION DISK

Once again you'll be able to take to the skies in one of six world-class fighter bombers. The new mission disks pit you against a number of different strategic situations. For instance, a secret meeting of terrorist leaders is taking place aboard a submarine, can you evade the surrounding SAM sites and destroy the surrounding flotilla? Maybe you'd prefer to liberate your own airforce base from an invading tank command. Whatever mission you decide to take on, you'll need all your wits and skills to survive. Activision is planning to take to the skies with the new Mission Disks sometime in July.

ENTER THE FOURTH DIMENSION

Hewson is confident that the Fourth Dimension will be one of the year's finest compilations and, unlike all of the others that will be released, the Fourth Dimension will feature three previously un-released titles. Insects in Space is a classic shoot-em-up arcade game in which you must foil the invasion of - not surprisingly - alien insects. Mazemania sees you assuming the role of Flippo. While travelling around a maze of tunnels, you must turn various tiles the same colour. Extra power and bonuses are awarded for collecting icons. Finally, Firelord is a classic arcade-adventure which sees you attempting to put paid to an evil queen who's cast your home land into turmoil.

The Fourth Dimension should be available at the end of June. This collection of un-released titles will set you back £24.99.

E) ELECTROCOIN FLASHES

You know when you go into the arcades to play the latest coin-ops there's usually a plaque on the top of the unit which tells you what the game's called? Electrocoin is now offering you the chance to collect these desirable items. Each release the company makes carries a special token inside the box. Simply send off the token and wait for the postman to deliver your very own flash. Electrocoin's

boss Luther DeGale, commented, "We believe top flashes will be very popular with our customers. They have long been popular collectors' items but will now be much easier to obtain. Many computer users will stick them on their walls where they will make a splendid alternative to posters, one advantage being that they are smaller." Time Soldier will be the first flash available and the game itself should be out now, priced £19.99.

F} HARLEY DAVIDSON: THE ROAD TO STURGIS

Many Americans dream of racing across the Wild West with the wind in their hair and hot leather between their legs. Now you too have the chance to retrace the classic Route 66 trek across the States riding a 1340cc Harley Davidson Hog.

The aim of the game is to travel from your home city to the town of Sturgis in South Dakota. Along the way, you'll meet up with other bikers and be able to listen to their far-out experiences. How's about entering the five Harley contests? There's the drag race, slow ride contest and hill climb events to win. You'll be allowed to customize your machine to suit your attitude, custom-paint your helmet, drape pelts from your machine and choose your own jacket. The game also features varying difficulty modes. You can take the high or low road but watch out for hairpin bends, police speed traps and the like. Eventually you'll be able to challenge for the title 'King of the Road'. Harley Davidson: The Road To Sturgis will be available in July priced £24.99.

G} YOLANDA
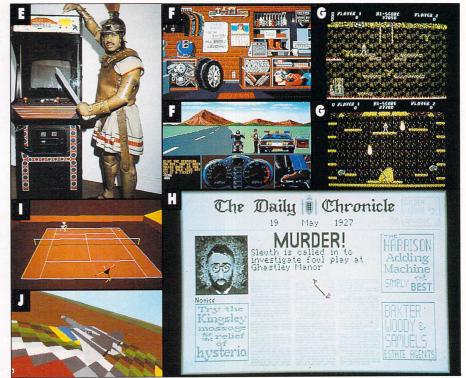
Yolanda is billed as the fastest and most difficult platform game ever. Having played the game in question during a recent visit to Millennium HQ, I'd say the company's claim is definitely valid. The game is based on the Steve Bak classic Hercules. But Yolanda is the offspring of Hercules and much improved and enhanced to meet the expectations of today's coin-op kids. Yolanda is a battle of speed, reflexes and wit against a truly tough game, spanning some fifty levels with the twelve tasks of Hercules cleverly interweaved in the action.

Apparently, Hercules was cursed by the goddess of death, Hera and then shunned by all of mankind. In Yolanda, your only hope of lifting the curse is to battle through this relentless and merciless action and complete all twelve of tasks, and there's even a random test selector which enables you to choose which task to attempt next. Yolanda has been designed by one of the most experienced and respected game designers in the industry, Steve Bak. Bak has structured the game to challenge the very best arcade fanatics and this finger-blistering romp is destined for an August release, priced £19.99.

H} MURDER

U.S. Gold has recently called upon the talents of Jason Kingsley to produce its latest game, Murder. Unbelievably, Murder boasts some 31.5 million unique murder possibilities and with each murder, you have only two hours to solve it before Scotland Yard muscle in. Set in a pre-war mansion house, you're surrounded

by a cast of stock characters such as dapper gents and flapper ladies, who float around doing very little except having love affairs and arguments over inheritances. Of course, there's also the inevitable butler.

Red herrings lie between you and the truth and in this classic mansion house mystery, there are four levels of difficulty ranging from novice to super sleuth. Once again, Kingsley's graphical-design skills figure strongly in the game, with 3D and isometric views designed to get you really involved in the atmosphere. The game is fully mouse controlled and there are sleuth notebooks and finger printing equipment to help you. But what's most impressive about this game is that the characters are actual individuals who move and think independently and this enhances the effect of realism. Murder is set for a mid-september release, but a price is yet to be finalized.

I} PALACE

Palace has decided to concentrate its efforts on the more civilized sport of tennis. The team programming 3D International Tennis has an impressive pedigree with the likes of the Shoot-em-up Construction Kit, Wizball and Microprose Soccer under its belts, Sensible Software has been commissioned to produce the ST version of the game. The game has a string of features including real-time 3D animation, four skill levels, two-player option, digitized score announcements, seventy-two different international competitions, four different playing surfaces, sixty-four computer opponents with sixteen levels of expertise, and (as the K-Ronco advert always says) many, many more! What with all that to keep you busy, tennis-fans will soon forget about that other summer sporting event. Watch out for 3D International Tennis sometime in July priced £19.99.

U.S. GOLD'S SNOW STRIKE

Snow Strike is the next game to come from the Epyx stables. The ST version is currently being worked on by the Code Monkeys and we should see the game sometime in August. Your task is to pilot a new jet fighter deep into the heartlands of South America, locate the evil drug baron's bases and blow 'em to bits. The game features ten different missions, various training missions and pre-flight preparation. It's going to be no easy task, but if you can fly the modified F14 to the limits you should get through. Snow Strike costs £19.99 and will be unveiled in August.

J} HAWK

Jez Sans and his team of Argonauts are working flat out on their vector graphic flight sim, Hawk. A spokesman for Hawk's publisher, Electronic Arts, candidly admitted that the project was well over due and that he wasn't expecting the game to be finished until November. Over the past year, vector flight sims have been released almost on a monthly basis with the publishers crowing that their game is more advanced and quicker than the competition. The Argonaut team is determined that Hawk will be better than the rest and so with each game released, the team is constantly up-dating and improving Hawk so that it has an edge on the competition. Can the Argonauts carry on doing this indefinitely? Will Hawk ever be released?

I visited Argo HQ and saw Hawk at the 'skeleton' stage of construction, and all that remained was the mission scenarios and game content. But Sans, renowned for his attention to detail, had assigned one of his staff to experiment specifically with vector-graphic ellipses. Undoubtedly, Hawk will be technically brilliant and what I saw during my visit was really impressive.

They're all lined up for the start of the race. Keep your eye on the start lights and you fingers on the throttle and as soon as you're given the green light, go!
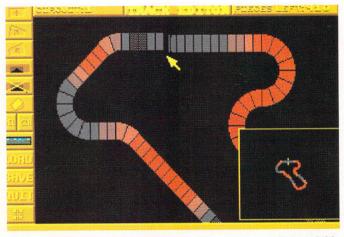
Now the action really starts to hot up and doesn't slow down even when you enter tunnels. But be careful, some of those tunnels lie on frighteningly tight corners

COMBO RACER

House: GREMLIN GRAPHICS Price: £19.95

I f you've never heard of Combo Racing then don't worry about it. It's not exactly a well-known sport. Basically, the process revolves around motorcycles with an attached sidecar tearing around a racing track. There's a co-pilot sitting on the sidecar platform who leans out in the appropriate direction when cornering so that the cycle doesn't flip over. The other rider simply drives the motorcycle making sure that it doesn't become damaged. Combo racer enables up to two people to play simultaneously, one controlling the side-car as the co-pilot while the other controls the bike. There's also an option to play the
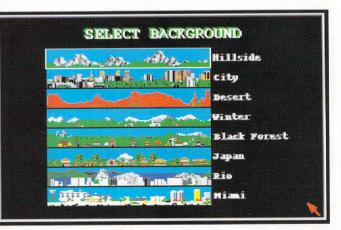
The track editor is superb and enhances the game's overall appeal. It's simple to use - pick up a piece and click the mouse to place it

game in one player mode - the co-pilot is then computer controlled.

There are eight individual race tracks to choose from, and each one has a separate backdrop, roadside objects and colours. After booting, you're presented with the main menu control panel, where you'll be able to choose a track and select various other options. It's wise to practice each course so that you become familiar with the track layout and are prepared for the corners, slopes and dips. You then begin the season of races. Log on and select 'next race', you'll be entered as a competitor.

SELECT BACKGROUND
Hillside
City
Desert
Winter
Black Forest
Japan
Rio
Miami

Once you've designed the track of your dreams, choose a background. Each represents a different location in the world

Before you can actually start racing proper, you'll be required to endure a qualifying lap where your time will indicate a position on the starting grid when the real race begins. Now you need to use all your skill as a combo racer. Once satisfied with the latest lap time, press escape and you'll be entered for the race.

As soon as the start lights turn green, it's time to hit the throttle and shift up through the gears. Both players need to control the bike in perfect harmony to avoid tipping or smashing into the barriers and the other competitors. Hit one of the other racers and your revs will be severely reduced and you'll probably have to shift down a gear in order to regain speed quickly.

The amount of laps you wish to

You made it. Sweat and tears but you came in tops. Time to enjoy the golden trophy and large bottle of bubbly

race can be changed from five to .25 and the various effects of the game can be selected and changed at will. There's an excellent extra to Combo Racer that enables you to create your own track and then alter it to your heart's content. You can use the tracks presently in memory or make a clean start and define your own.

The track designer is created in much the same way as you'd design a Scalextric track. All you need to do is pick up the required piece and click it in the appropriate position. You can add curves, variable slopes, dips and even tunnels. And once happy with the layout, it can be saved.

Combo Racer is an excellent game and the inclusion of the track designer makes it an excellent buy. You really are getting two packages for the price of one - can't be bad! Graphics are superb, with fine-frame animation and scrolling scenery zooms smoothly and without flicker. ●

You'll have to keep your eye on all those corners - some of them are very tight. If you don't lean the bike enough you'll be in for a very bumpy ride, and if you hit the corner incorrectly, Combo racer is thrown into the air

This is how cornering should be done. Try to get into the inside lane as this will give you more time to react to the corner and the co-pilot will have more time to lean into the bend

A. On accepting his quest to travel to the bottom of the sea and into the dark and mysterious rooms of the Esmerelda, your diver is lowered into the ocean depths

B. The map can be called up so that you can view your progress through the dilapidated hull of the ship. A cursor shifts the ship around so that each location can be viewed

D. There are many objects to collect in the wreck of the Esmerelda. Gold is the most important of all, but air bottles and diamonds also make an appearance

TREASURE TRAP

House: ELECTRONIC ZOO Price: £19.99

Y ou've decided to don deep sea diving clothes and make a fantastic journey into the darkest and deepest depths of the ocean. Your destination is a wrecked ship, the Esmerelda, which lies at the bottom of the sea and contains a horde of Gold.

After booting, you're presented with a view of the support vessel and the diver being lowered into the water. No sooner are his feet wet than he's plunged into the many rooms of the dilapidated ship where danger is rife.

The scenes are set in an isometric 3D style reminiscent of the Ultimate games, and directions on the joystick are diagonally controlled. Each of the rooms is accessed via the old and rusted doorways which only need to be touched by the diver to make them slide open.

All the information required to play the game is at the bottom of the screen. As more Gold is collected, it appears in the form of a digital read-out and every time you collect multiples of 50 gold bars, you're given an option to save your present position. Along his many travels through the rooms of Esmerelda, the diver will encounter evil nasties intent on his destruction. Crabs, sea anemones, jelly fish and electric eels are all on patrol and each will prove deadly to any deep sea divers straying too close.

Fortunately, you're not alone in the quest for treasure. every time you manage to reach a multiple of 80 gold bars, you'll be awarded with a Smart fish. These little fellows appear in your personal aquarium on the lower left side of the screen. All the other aquatic nasties hate these little fish and if you find that they're proving to be too much of a pain, you can release one of the Smart fish by pressing S on the keyboard and

RIGHT: No sooner have his leaded feet hit the floor of the wreck when the nasties are already hot on his tail. Dodge the crabs and other various nasties by leaping over them

they'll chomp up all the other nasty sea creatures.

Apart from all other worries of the wreck, you can only carry a limited supply of air but luckily, the dive master came down to the wreck earlier and scattered air bottles around the wreck. Unfortunately, these bottles are few and far between and you'll have to look hard if you're to find them. Don't pick up too many air bottles though as your suit will fill up with air and you'll find yourself in severe difficulty for a little while.

There are many puzzles to solve in the wreck of Esmerelda
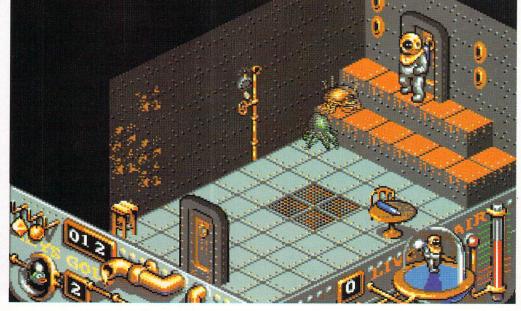
as some of the rooms are not instantly accessible and may need to be reached via another location. Some of the gold may be out of reach so our hero must push objects so that he can jump

on them to reach the booty.

Treasure Trap is basically a rip-off of the old Ultimate games that used to make such an impression on the 8-bit machines years ago. Treasure Trap is a very good effort indeed and sticks well to the tried and tested formula. The control method is a little sluggish and this proved annoying at times when trying to out manoeuvre the creatures. If you enjoyed the Ultimate games then your money would be very wisely spent on Treasure Trap but even if you've never played one before then it may still be worth a look. ●

TRIED AND TESTED:

REVIEWER:	STEVE
GRAPHICS:	82%
SOUND:	78%
GAMEPLAY:	76%
OVERALL	79%

Scanning the cockpit, it doesn't take long to get to know the layout of the plane. In the centre, your **TRACKING INDICATOR** shows the enemy's radar in the area (the red bar) and your E.M.V. (the white bar). The HUD shows both your altitude and speed, as well as your bearing and the G-force you're currently pulling. At the bottom is the **TACTICAL MAP** showing incoming objects, and the **WEAPON STATUS** screen revealing the remaining weaponry

T he F-19 Stealth Fighter is America's latest aviation project the end result of which, is the production of a multi-billion dollar plane capable of 'invisible' flight. F-19 is Microprose's latest stunner in a long line of accurate simulators.

You're a second lieutenant in the United States Air Force, honoured to pilot one of the world's two greatest jet fighters: The F-19 or the F-117A. Originally, Microprose in the States produced Stealth for the PC, but this version only included one of the two legendary aircraft (the one featured in the title). The inclusion of the F-117A should prove to make the ST version even better than its PC counterpart.

There are four different scenarios to fly in F-19 including Libya, the Persian Gulf, the North Cape, and Central Europe. On top of that, each area is divided into three sections, each one representing the differing scales of conflict. Cold War for example, requires the use of the stealth capabilities to the full each mission being a reconnaissance mission, but conventional war scenarios have you shooting everything that moves and with the detail programmed into the game, this is no easy task.
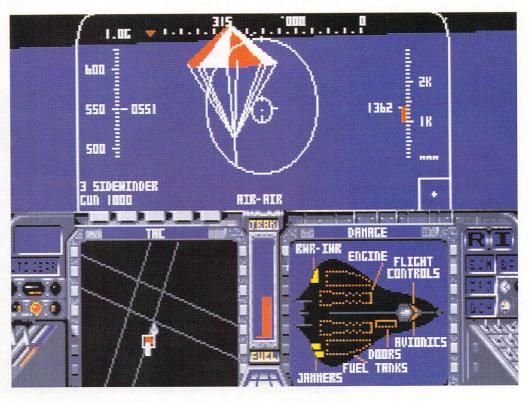
To use the plane effectively,

RIGHT: A large array of both air-to-air and air-to-ground missiles can be carried on board, making intense dogfights more exciting when your opponent has run out of ammunition! Unfortunately, your opponent doesn't have a chance against such piloting skills and after a lock, you release your missile and watch him drift to the ground in his parachute.
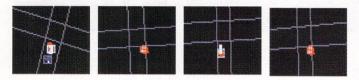
F-19 STEALTH FIGHTER

House: MICROPROSE Price: £29.95

As your sleek black craft speeds through the moonlit sky, you pick up something on the radar. Is that an enemy fighter, or perhaps a missile boat. Investigate, but don't get detected

All pilots begin somewhere, usually as a second lieutenant. But with a few missions under your belt, you'll be working you way up to Colonel in no time

you must first learn the skills needed to fly undetected Stealth missions, as any missile launch or bomb door opening increases the chance of your plane showing up on the enemy's radar. The bottom line of the mission is - if you're detected, destroy the craft which picked you up before information is relayed back to the enemy's base.

The last mission type is limited war, the task usually being to destroy a tactical enemy target with the minimum amount of fuss before returning to base. There are two objectives to master, air-to-air combat and ground strike. Training plays an essential part in gaining valuable experience needed in later missions, so handy practice can be gained in both styles whenever you wish.

Like most aspects of the game, Stealth can be fully adjusted to gain the correct difficulty level for your skills. This is done by altering the skill rating of your adversaries. Green enemies use old equipment, most of which is faulty. The pilots are young and inexperienced, posing only a small threat to you in the F-19.

Next on the list is the regular opponent who, although better than the Green enemy, is still fairly useless compared to yourself. The trickiest possible foe are the veterans, who use some of the most modern equipment available, and have at least a half dozen kills under their belts.

Lastly, there's the Elites who are the icing on the enemy's formidable army cake. Difficult dogfight manoeuvres are second nature to these skilful flyboys, and only the best of the best will be able to offer a challenge once in the air. With the substantial dol-

lar price on the F-19, you must learn to live as long as possible.

There's no way you can outrun a missile which has an average speed of Mach 2.5 when your top speed is Mach 1.1. Instead, you need to resort to either trying to 'cloak' yourself and hopefully losing the lock of the oncoming missile, or trying to out manoeuvre it. You have a tighter turning circle than an approaching missile, so if you can time it correctly, the missile will overshoot your tight turn and therefore lose its lock.

Also a limited amount of flares and chaffs or even decoys can be launched, making life a little easier. The stealth capability is best used when flying low and fast over the highly detailed scenery, thus flying under the enemy's radar. If you bank or climb however, the electro-magnetic visibility rating increases, and if crossed by the opponents radar rating, you have been detected.

F-19 Stealth Fighter is stunningly fast. Other games crawl at a snail's pace in comparison, and the ground scenery is so detailed it's breathtaking. F-19 is the flight simulator for the ST, combining brilliant tactical gameplay with fast action. A classic to add to the quality games from Microprose.

TRIED AND TESTED:

REVIEWER: ....ALEX
GRAPHICS: 95%
SOUND: 85%
GAMEPLAY: 94%
OVERALL................92%
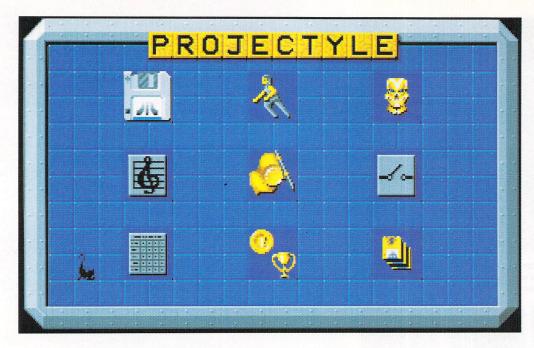
The ground detail is superb both on land and over the stretching plains of the ocean. Large vessels crawl across the open seas, possibly covering up the role of a missile. On the ground, SAM sites endanger your life unless of course, you can disable the tracking radar with your HARM anti-radar missiles

PROJECTYLE

PROJECTYLE

House: ELECTRONIC ARTS Price: £19.95

Projectyle is a game for up to four players. Each player participates in the fastest growing sport of the future, Tribal and Tribal is basically, a new twist on the footy theme but with a different kind of pitch layout and less strict rules.

The game is played by rebounding a steel ball around the pitches which are presented in a cross formation. To score a goal, the ball must be struck into the opponents defend zone and then passed through the goal mouth. Each team has its own individual colour and this colour depicts the different goal mouths.

Play begins in the Central Zone, similar to the kick-off in football. From this central Zone there are four gates which lead to the Attack Zones, Defend Zones and Frantic Zones. Each of these zones has three opposing players.

Boot Projectyle, and you'll be presented with the Tribal game menu. From here you can select several icons that will enable you to toggle the game attributes and statistics and also to load and save games. You can call up the top goal scorer or view the latest league table and if you're not too happy with the background music (which plays throughout the game...) you can select the music icon enabling you to choose one of eight themes.

Once contented with the layout of the game, you can proceed with the match, by selecting the go icon which is indicated by the flag in the centre of the display. There are several teams to choose from, and each comes with its own logo which is also an indication of the colours that will represent your goal mouth.

Several game types are available including league table and sudden death. The league can be played over 6 and 21 weeks

PROJECTYLE SUDDEN DEATH QUALIFIER							
TRIBE	P	W	D	L	F	A	PTS
ELDRITCH CATS	000	000	000	000	0000	0000	000
UZTEKS	000	000	000	000	0000	0000	000
SLEDGE HAMMERS	000	000	000	000	0000	0000	000
MANIC MOOSE	000	000	000	000	0000	0000	000
VECTORS	000	000	000	000	0000	0000	000
JOVIAN JELLO JUGGERNAUTS	000	000	000	000	0000	0000	000
DEVILS	000	000	000	000	0000	0000	000
TERMINATORS	000	000	000	000	0000	0000	000
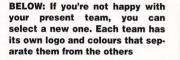
ABOVE: Three players can participate in a game of Tribal and they'll have to battle it out with each other in order to make the final. The score is shown every time a goal is scored

Attack Zone

Defend Zone

Central zone

Attack Zone 2

Frantic Zone

LEFT: Here we see the five main zones and the tunnel connectors. Each of the zones has a goal which is shared proportionaly between individual teams. The only exception is the Frantic Zone. This contains a goal from each Tribal team. When the ball gets here, everyone must keep it out of their own goal mouth and shoot it into that of their opponent's. The zone areas are connected by tunnels. When the ball travels into one, the play area is scrolled in the appropriate direction so the next zone is displayed

with all eight Tribes, whereas sudden death games consists of six preliminary games that decide the six teams who proceed to the semi-final. Winners of the two semi-finals and the runner up will all participate in the final match.
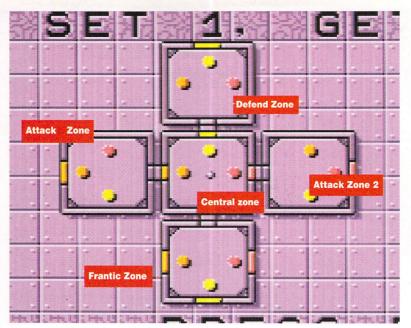
If no one has won by the end, extra time is added until one tribe becomes the winner. When a goal is scored, the goal scorer is displayed and the scores updated. When a point is won there's an option to view a replay of the action that led to the last goal. Once you've become accustomed to the finer points of Tribal you can begin to train your team by altering their skills and attributes. Training a team costs money, though, and you'll have to make sure your funds will cover the cost.

During the game small icons appear occasionally on the play area. When collected, these icons affect either your player or

Every now and then, small icons flash onto the screen. Each one has some kind of effect on the pitch or players. Pick them up by gliding over them
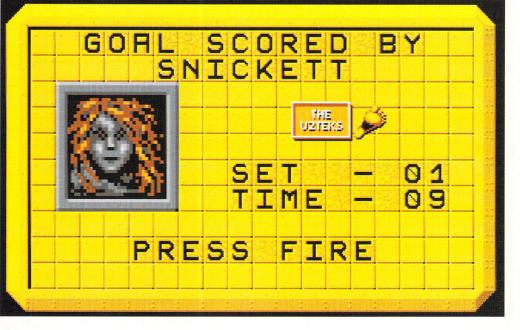
At a later stage you can train the team so they become more skilled on the pitch. Training will cost money though but this can be collected during play

the pitch. As well as adding to your dosh and building up stamina, the icons can effect the bounce on the pitch and players, and alter the power and slide both positively and negatively. It's therefore wise to avoid collecting the negative icons.

Although novel, Projectyle became a little repetitive after a

few games. Presentation is colourful and graphics smooth-moving and clear. Sound is well implemented and it's nice to see the ST's capabilities haven't been totally neglected. Projectyle is an enjoyable little game but one that doesn't really offer any long term challenge.

BELOW: If you're not happy with your present team, you can select a new one. Each team has its own logo and colours that separate them from the others

RIGHT: If anyone does manage to score a goal they're displayed on the score screen and an option becomes available to watch a replay of the action leading to the goal

GOAL SCORED BY
SNICKETT

THE UZTEKS

SET — 01
TIME — 09

PRESS FIRE

RIGHT: The young Brian is a daring little fellow, armed with his trusty blade he must avenge the kidnapping of his parents

FAR RIGHT: The animation found in The Viking Child is pretty comical. Should our hero fall down a hole, he'll tumble head over heals losing energy in the process

Prophecy 1
THE VIKING CHILD

House: WIRED Price: £19.99

Available on the Wired label, The Viking Child is the first project from the combined talents of Imagitec Design and The Electronic Zoo. Subtitled Prophecy 1, The Viking Child is the first of what will be a trilogy. Attractively packaged, the game comes spread across three disks and spans sixteen action-packed levels.

The Viking Child is a platform fanatic's dream. Bearing a very close resemblance to the classic Sega coin-op Super Wonderboy, the game has you assuming the guise of an orphaned Viking child, by the unlikely name of Brian. Now it just so happens that for reasons best known to himself, the evil Norse god Loki, decided to descend from the heavens and zap your village. Naturally, rather than kill its inhabitants the cunning god decided to nick all their gold and enslave them in the great halls of Valhalla - pretty smart move, eh? Anyway, that was the plan. Due to a minor oversight however, Loki forgot to grab all the villagers and young Brian was left to die amongst the ashes. Brian was a bit miffed about losing his folks and in an attempt to right matters, set off to sort out the mischievous immortal.

From the title screen you can select any of three options including begin the game, view the obligatory high scores, or enter a secret code. The latter enables you to enter one of four codes granting access to later levels. Naturally, unless you've reached the necessary waypoint, you won't know the codes so as

with all good stories, it's best to begin at the beginning.

Level one has you battling through the ruins of your once proud village. With the people captured, the beasts of the forest have free reign on the land and you must fight to survive. Armed initially with a small sword, you hack at the comical meanies or pay the penalty. Disposing successfully of the enemies will yield either a coin or a gem - the first providing you with credits to spend, the second simply adding to your score.

Your health is indicated by two rows of hearts found at the bottom right corner of the screen, and contact with an enemy or a dangerous fall will deplete your vitality. Also located at the bottom of the screen are some important icons. As you progress through the levels you'll undoubtedly be rewarded with credits for valour.

Dotted around the lands are various shops in which you can buy helpful weapons and the like. The number of special items

There are sixteen levels in all and after completing each one, you'll be presented with a map highlighting your route to the fabled land of Valhalla

is indicated at the base of the screen along with information regarding your present financial condition.

Buying weapons is essential, especially when you consider that to escape a level you'll probably have to kill a fearsome end-of-level meanie. When encountering such beasts, you'll be required to knock the stuffing out of it, reducing its energy bar until it's fully depleted. Only when the fiend has finally been defeated will you be able to collect a key and make good your escape.

The Viking Child's presentation is first-class, graphics are beautifully animated, colours bright and bold and the characterization is great. The sound is impressive too. The game boasts twenty-two original pieces of music! However, no matter how much effort goes into the cosmetic side of a game, it's gameplay that really counts. And again, The Viking Child is a winner.

The platform gameplay combined with the basic slash-em-up theme works incredibly well. With sixteen levels to challenge your skill this game represents something really special. ●

Extra goodies can be bought from various shops. Choose carefully as you'll need all the extra firepower you can muster if you are to successfully do battle with an end of level meanie

ORIENTAL GAMES

House: FIREBIRD Price: £24.95

From the very dawn of computers, martial arts beat-em-ups have always been a firm favourite among computer gamers and as computers became more advanced, so the games became harder and more violent. Now, Oriental Games gives you the chance to put into practise your years of martial arts training as you take on a selection of some of the most hardened fighters ever assembled in a single competition.

The contest itself takes place over three fighting areas of a large and splendid looking pagoda. There are three disciplines in which to participate: Freestyle, Kendo and Kung Fu. Each has its own individual style of fighting and all the moves must be mastered if you're to become a true master of martial arts.

Selection of the different styles is made through the mouse and a Yin/Yang pointer-icon. You will first have to sign on at the reception area which is positioned at the very front of the competition building. After entering your name you tell the computer a little about your self. You'll be required to enter whether you're

This is where the greatest of all martial arts competitions will take place - the beautiful palace pagoda. Now you'll have the chance to really test your martial arts abilities
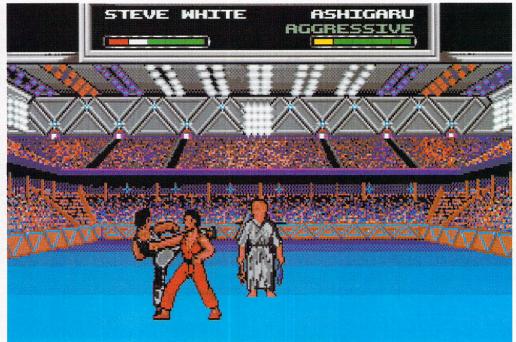
You won't be able to fight until signing on at the reception area. Once done, the fight options will be highlighted to show that they can now be selected
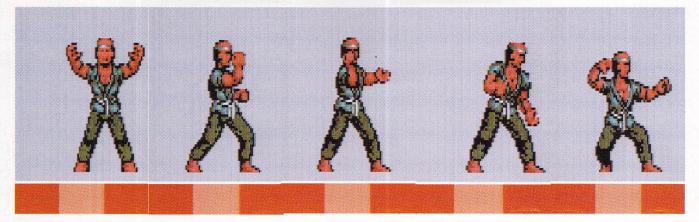
This is the league table where everyone is paired together in their fights. The contest is an elimination competition and only the winners go through to the next round

RIGHT: KUNG FU - A Chinese martial art. Kung Fu is probable the easiest of all three disciplines. The techniques include leg sweeps, flying kicks, kneeling punches and heel kicks

a master, professional or novice. You can then decide to alter the joystick configuration. This enables you to program a flow of up to eight different fighting moves into any of the four diagonal directions on the stick - useful for customizing the control method to suit your style. From the reception area, you can then choose which style it is you will participate in.

The fights are linked in a league format where the winners of the fights go through to the next round and are then paired again. Losers will instantly be eliminated as there's no place for poor fighters in the Oriental Games.

Eventually your fight will be called and you'll be required to make your way to the mat where you'll come face-to-face with an opponent who will bow courteously. As soon as the bowing is over the fight begins.

Each contest is controlled by the referee who stands by the edge of the fight mat. As blows are scored, he registers a hit by raising a flag which is the same colour as the fighter's garment. Each fighter has an energy level indicated by several circles,

green at the beginning indicating good health.

When a fighter is hit his energy circles are affected. They will in turn, switch from green to white to yellow to red at which point that circle will become 'dead'. The next circle will then be affected until all the circles are red at which point the fighter will fall to the ground while the winner leaps in the air.

At the end of each contest you'll be presented with a progress card. This indicates how good or bad you performed during the fight. Both fighters are compared on hits scored, attacks blocked and misses. Special token points are awarded for the winners and it's these that will determine how many gold, silver or bronze medals you'll win.

The medals are displayed alongside their holders on the awards board. Once you've become proficient in each style and accustomed to the many moves, you can change skill setting to professional and eventually master.

The feature which really sets Oriental Games apart from the other beat-em-ups around at the moment is the programmable

FREESTYLE - Mostly Japanese, this martial art is a pot pourri of the various disciplines including Karate, Thai Boxing and western boxing. The head-butt, jump kick and front punch are all included

TRIED AND TESTED:

REVIEWER: .... STEVE

GRAPHICS: 81%

SOUND: 73%

GAMEPLAY: 80%

OVERALL 78%

joystick which can be set to respond to certain moves. It's

surprising this feature hasn't appeared before, because it enables a lot more moves to be included.

Graphics are excellent and each fighting move has been perfectly captured and converted. The Kung Fu competition is a little easy but this is the only point which detracts from an otherwise perfect game. If you're into beat-em-ups then I'd definitely recommend you give Oriental Games an outing. ●

LEFT: KENDO - Kendo is another Japanese martial art that reflects the history and traditions of the Japanese samurai. Techniques include the side sweep, overhead attack and leg sweep

It's been six long years since Monty Mole first hit the headlines in the much-publicised 'topical computer game' scandal and since then, the little rodent has gone on to star in no less than two more top ten hits.

During his life as a computer game star, our hero has faced death in literally hundreds of danger-filled screens, with all manner of deadly traps and nasties out to get him. Now, after shying away from publicity for so long, Monty Mole has made his 16-bit debut. Programmed by Core Design using characters from Pete Harrap's original games, Impossamole sets our hero the unenviable task of traversing some five-hundred screens in search of a bunch of guardians who've set their minds on destroying the world.

The game's scenario picks up where the last game, Auf Wiedersehen Monty left off, with the little mole living up on some tropical

Select the island to attempt first. The mysteries of the Bermuda Triangle can only be entered when the other levels have been completed

A few ideas are retained from the exceedingly popular 8-bit versions of the game, in particular the the cable cars of Auf Wiedersehen Monty and the compactors of all three games. However, instead of killing Monty instantly, the crushers now severely reduce his height and energy instead!

IMPOSSAMOLE

House: GREMLIN Price: £19.95

island. His peace, however, wasn't destined to last long, as a god-like creature appeared out of the blue and intoned that Monty was Earth's last hope in the battle against evil.

It transpired that five alien beings were trying to take over the world and had recruited all manner of strange cronies to protect their respective lairs. Thus, Monty was given a new tracksuit and powers with which he must enter their domain and put an end to their evil.

Unlike the previous Monty games, Core have expanded the original concept and added elements from their past hits such as Rick Dangerous and Switchblade. Monty begins his quest by selecting which of the five levels he wishes to attempt first. These

Extra goodies can be bought in one of the many shops - if you can find it. Here, a shopkeeper awaits you decision and can prove invaluable when energy is low

range from the rocky Klondikes (patrolled by cantankerous old miners, bats and ghosts), to the mysterious Bermuda Triangle which can only be accessed when the other four stages have been completed.

Each level is made up of a number of burst-scrolling screens within which, the usual assortment of aliens and col-

lectable objects can be found, and Monty's basic aim is to hop, skip and jump over the dangerous creatures while collecting as many of the goodies as possible. Should Monty come into contact with the evil-doers however, his health - represented by an energy bar at the top of the screen - will be drained until he finally keels over - you only get one life

so make the most of it!

Not all the odds are stacked against him however, as Monty's new-found super-powers enable him to fight back with a kick Bruce Lee would have been proud of, and extra help in the form of lasers and grenades which can be collected and subsequently upgraded so that they offer more destructive power.

Finally, Monty's coup-de-grace comes in the form of his 'mega-weapon' (!) activated with the space bar. It eliminates everything on the screen, but you only get one so use it wisely. All this frenetic platform action finishes with a climactic battle against the level's guardian. Once destroyed, he will spew out loads of bonus-giving goodies, and access to the next stage will be granted.

If anyone could have transferred Monty's adventures to 16-bit format it was Core, but somehow, it just doesn't seem quite right. As platform games go, Impossamole is well above average. Graphics are cute and feature instantly recognisable sprites, and the sound - which opens with a brilliant Benn Dalglish re-mix of Rob Hubbard's Monty On The Run tune - is of a similar high standard. But the main gripe is that the game is just a little too difficult. No sooner has Monty started to make progress, then all manner of aliens swarm to attack him and unless he's armed, Monty doesn't stand a snowball's chance in hell of surviving.

This moan aside however, Impossamole is probably the best platform game to appear for the ST in quite a while - it's just a pity it isn't as good as the 8-bit original.

Monty's awesome 'mega-weapon' varies from level to level. At first, a series of mole-like clones appear and proceed to revolve obligingly around him, sorting out the various villanous assailants, while on later stages, a more substantial and better-equipped mole-double appears and bounces around the screen in a furry frenzy of orgiastic, ritual slaughter, killing everything in its path

Monty, initially armed with his feet, can collect grenades and lasers to make trashing the aliens easier. Weapons can be upgraded using cans of worms dotted throughout each level
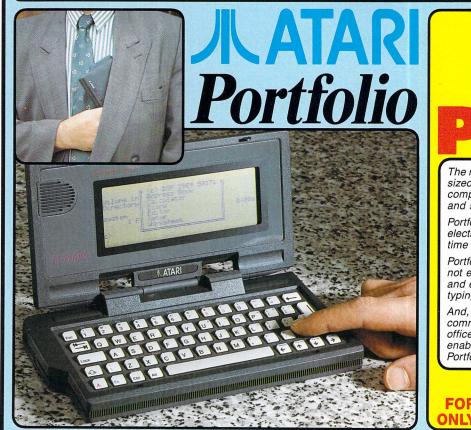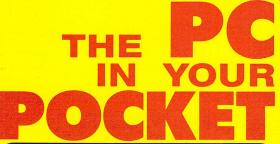
TORNADO ADV

THANKS TO BRITISH AEROSPACE FOR ITS GENEROUS HELP IN SUPPLYING PICTURES.

FLIGHT OF FANCY

The first silicon aeroplane I ever travelled aboard was generated by a Sinclair ZX81 with 16K RAM pack. The machine was running a flight simulator consisting of a black ground, a very simple instrument panel and small white blocks to show the runway edges.

· Since then, almost all home computers have had at least one flight simulator made available for them and as time has passed, they've developed breath-taking complexity.
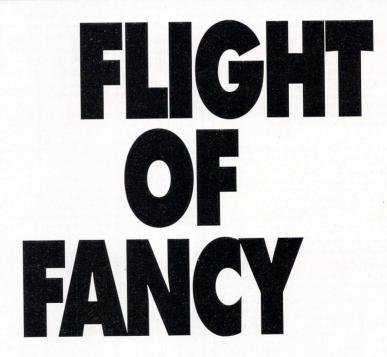
Last year alone saw Falcon, F-16 Combat Pilot and Bomber appearing on the ST for the simulator cum shoot-em-up fan. All were great fun and spent ages in Gallup's Top Ten chart.

Unfortunately, last year's sims appeared to cater more for the trigger-happy fly-guy and less for the serious simulator fan who wants attention given to the flying details such as runway layout and aircraft handling. The only simulator to come near to reality is the civil aviation-based Flight Simulator II and although this is one of the most famous flight sims and certainly one of the best, it's starting to show its age with slow screen updates and jerky animation.

BY JINGO!

The latest military simulator is shortly to be released from HiSoft, a company well known for its highly successful programming and utility packages.

ProFlight (as the new sim is known) is based around the British Aerospace deadly Tornado and the sim's programmer is an ex-military flight simulator designer who has high aims for the program. There's an A5 130-page ring bound manual detailing the history and how to fly this monster of a plane, the laws of flight and absolutely nothing about gaining high score. The sim's manual resembles a real flight manual and is well presented.
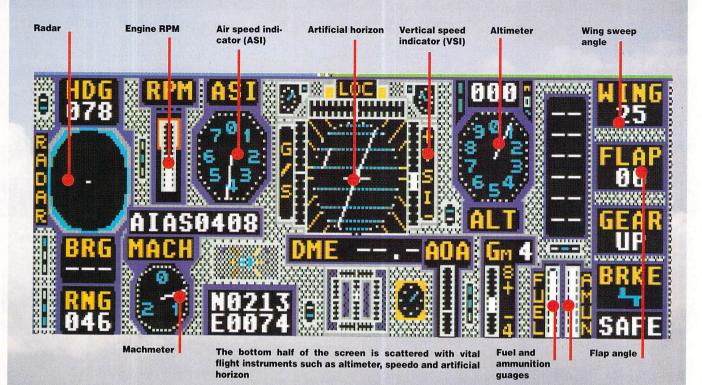
From blocky mono graphics to airborne travel so real you're almost suffering vertigo, the flight simulator has come a long way. Air Ace John 'Crumpet' Butters eases out the chocks, pulls back on his joystick and lets fly with a couple of rounds...

THE INSTRUMENT PANEL

Radar — Engine RPM — Air speed indicator (ASI) — Artificial horizon — Vertical speed indicator (VSI) — Altimeter — Wing sweep angle

Machmeter

The bottom half of the screen is scattered with vital flight instruments such as altimeter, speedo and artificial horizon

Fuel and ammunition guages — Flap angle

Leave the keyboard for a couple of minutes and Squadron Leader Invisible Man takes to the skies demonstrating how the Tornado should be flown. While not exactly exciting, the demonstration mode does serve to make clear, points of flight you're not sure about in the manual.
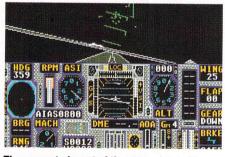
At last you're almost ready for flight, but before jacking up the power to full and permanently damaging the ear drums of any passer-by, select any options required for the mission.

There's an option for training which enables pilots to brush up on various fighting manoeuvres before moving on via Mission Planning, to the Combat mode where anything can happen.

In the real world, missions take place throughout the day and night and selecting Visual enables pilots to change the flight time to day, dusk or night.

It's also possible to have stars in the simulation. And they haven't just been plonked anywhere on screen, but accurately positioned as they appear in the northern hemisphere. This means of course, that anyone who knows their night sky ought to be able to navigate using the stars - remarkable!

So, once you've finished that cup of coffee and donned flight suit and poseur's shades

The accurate layout of the stars clearly illustrates the high accuracy in the program

The real thing in all its splendiferous glory - but HiSoft's is almost as good...

it's time to get the multi-million pound bird rolling along the runway. You'll soon reach take off speed and pulling slowly back on the mouse will get the plane into the air.

Retract the landing gear up to cut down drag and turn towards the battle zone. A nice touch is the ability to sweep back the wings for fast flight.

Finding an enemy fighter to tackle isn't too difficult but what is, is locking on to it and knocking it out of the sky. Your plane is positively bristling with all the types of missiles you'll need in any type of mission including air-to-air sidewinders.

The plane's response to the controls is

superb and gives an excellent feeling of reality, with quick screen updates. ProFlight is the first fighter flight simulation capable of running on a high-res monochrome monitor and so should appeal to all those stuck with mono-only displays (although FSII works in mono it doesn't take advantage of the better resolution). ProFlight can also be flown in colour.

The pre-release copy previewed here is very impressive and I haven't let it out of my sight for days! If the program is successful (and it's certain to be...) HiSoft plans to update it regularly and provide existing users with improved versions at little cost. ●

There he is, let's go get 'im

Keep in there, nearly got 'im

The war'll be over by the time we get a hit

PUBLIC SECTOR

Ahmad Alam opens a veritable Pandora's box of plum public domain...

STE specific sound manipulation programs are only noticed by their absence, maybe you would pay good money for such a program but they simply aren't available. There is however, a public domain STE sample player on Goodman disk GD672.

Running the program produces one huge dialog box from which you can load a sample and play it back using one of the four frequencies offered by the chip. These are roughly 6, 12, 25 and 50 KHz.

Bass, treble, volume, balance and internal sound chip mixing can be adjusted too and samples can be played back in stereo or mono. The program is comprehensive and provides all of the options offered by the sound chip. And because the chip's sample rates are not exactly at the figures stated, a program has been included to convert 25KHz Digisound samples to the slightly faster STE speed. This could be used to convert 25KHz files produced using other samplers.

The sound hardware set up here is using the heaviest bass possible and mixing with the old 8912 sound chip

Yes, I was at the Atari 90's show, trying to squeeze interesting snippets (and free disks) out of the PD exhibitors. Possibly the most interesting development, is the revival of the true PD concept ie that the software should be free.

The AAUG, or Association of Atari User Groups, the 16/32 PD library and ST club are hoping to offer PD software for as little as possible. The dream of users sending their disks and return postage and receiving quality PD software and updates could well become a reality. The 'under a £1' disk is already here with Seven Disk PDL being one of the first to try this price point.

Quartet caused a storm when it was released for the ST. Amiga-like sound quality from a normal ST - amazing! Now hot on the heels of this stunning program, MPH bring you another winner, Soundtracker. The most significant factor concernΩing SoundTracker is that there are hundreds, if not thousands, of Amiga tunes written using the program. Unfortunately however, ST owners will not be able to enjoy this wealth of software unless they pay the price, and have access to an Amiga in some way. But if you have an Amiga owning friend, then you could manually port the scores across. It transpires that the Soundtracker demo (more, further on in these pages) samples at a rate of 10KHz. The Amiga Soundtrackers however, use 8KHz for their instruments. This incompatibility makes it impossible to load Amiga Soundtracker modules.

The commercial version well rectify this problem and will feature a sampling package and MIDI compatibility. The bad news is that it'll cost over £30 and will definitely not be PD.

STEPPING OUT!

Attention all STE owners! Are you sick to death of Atari's attitude to your machine? Not even bothering to give many of you a new control panel and nothing to prove the existence of the wondrous sound chip at the heart of your new machine except a six page supplement! Annoyed with all those demo makers so keen to tell you how clever they are, yet not bothering to take advantage of the new hardware? Worry not, for relief is at hand in the form of a new batch of STE specific PD software.

First up, is the Jungle Demo from Riverdene PDL. This is a highly polished demo showing off the new sound chip, hardware scrolling, larger pallet and blitter. All the new hardware in fact, except those 'please-find-a-use-for-me' analogue ports at the side

With a local farmer hot on his heels, the trespassing tourist climbs up a strange looking pillar in the middle of the jungle

of the machine, and the Sync line present on the monitor port (bet you didn't even know of the latter's existence...).

The demo scrolls around the large screen area by itself, but you can take control of the movement by using the cursor keys. This feature isn't documented, so don't expect to be told about it.

You haven't really got an STE until you get this demo. Despite all the praise however, I have to say that it isn't the most impressive ST demo I've seen, the extra hardware has merely been used here, not pushed to the limit.

Are you one of those people who can't stand the obscure programs in PD libraries, but simply want all to get your hands on the juicy games? You need PDQ Games, a PD library which claims to have over twice as many games as any other library, and is probably the first games only public domain library.

At last, it seems my plea for STE specific demos has been answered, well sort of anyway. There's a small number around now but, as much as I hate to say this, they're hardly anything special. Come on demo writers, let's have some really stunning stuff. If you're into acid (the music that is...) then try the 16/32 PDL's STE Acid demo.
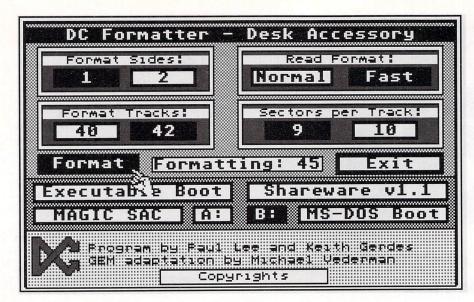
Lots of mystery surrounding Gemini the replacement Desktop at the moment. I've heard on the grapevine that the German instructions state quite explicitly that Gemini may not be distributed by any library. The ramifications of this could be quite serious when it appears that every other PDL seems to have it already.
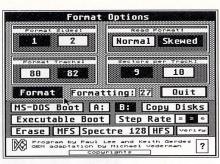
The program is now up to version 1.1, but as the whole thing's in German I can't tell you any more until it's deciphered.

As the demo gives you a tour of the jungle, the pillar is actually part of a giant Atari logo. There are more shades of colour in the sky here than would be possible on a normal ST

Format Options

Format Sides:
1   2

Read Format:
Normal   Skewed

Format Tracks:
80   82

Sectors per Track:
9   10

Format   Formatting: 27   Quit

MS-DOS Boot   A: B: Copy Disks
Executable Boot   Step Rate
Erase   MFS   Spectre 128   HFS   Verify

Program by Paul Lee and Keith Gerdes
GEM adaptation by Michael Vederman
Copyrights   ?

ABOVE: Buttons highlight themselves when you pass a pointer over them - useful if you've obtained the program without documentation

LEFT: The accessory in low resolution changes the Desktop colours and restores them afterwards. Notice how the disk copy panel has been replaced by a message
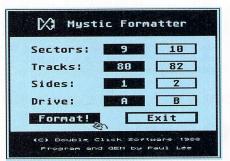
SOMEDAY, ALL FORMATTERS WILL BE MADE THIS WAY...

Reading the word 'formatters' is probably going to make you sigh boresville! but fear not, for this is the definitive formatter round up. No more sifting through hundreds of PD disks examining one formatter after another (and let's face it, they almost all look the same, right?) To please the interested however, I took a look at the exceptions.

• **DC Formatter 3.01.** That's right, the famous DC Formatter by Double Click Software. Without doubt this is possibly the most comprehensive formatter ever produced. Not only can you format ST disks, but Magic Sac (Macintosh emulator) and IBM disks too. IBM disks aren't actually formatted, but an option is available which enables you to write an MS-DOS boot sector to a previously formatted disk. Beware though, only nine sector ST disks are readable on PC clones.
Disks can be formatted to 40, 42, 80 or 82 tracks, nine or ten sectors and in either standard or fast read format. 40 tracks? Yes, the almost obsolete single density format as used by early IBM clones.

A very unusual and useful option enables you to write an executable boot sector to perform various useful tasks including a time saver, medium resolution boot, write verify off, execute *command.prg*, hard reset and bypass hard disk. Two versions are available, a program and accessory. The accessory version however, doesn't allow disk copies to be performed.

Mystic Formatter

Sectors: 9   10
Tracks: 80   82
Sides: 1   2
Drive: A   B
Format!   Exit

(C) Double Click Software 1988
Program and GEM by Paul Lee

Click on Format and it doesn't hang around forcing you to wait, it vanishes!

There's a minor niggle with this program. You're not given any warning prior to a format being carried out in the accessory version. Click on the format button, and it's off! The program version simply allows you to enter a volume name, or cancel, before it carries out the dastardly deed.

• **The Mystic Formatter.** Yet another from

Executable boot sector options

Time Saver   COMMAND.PRG
Medium Resolution   Cold Start Reset
Write Verify Off   Bypass Hard Disk
Write it!   Exit

A grab-bag of boot programs to mix and match to your particular needs.

Double Click Software. The most outstanding feature of this accessory is that it multi-tasks. Set it off formatting and it chugs away while you get on with something else.

Single drive owners may not find this so useful as the only tasks they can perform are those which don't require any sort of disk access. The question which many of you may be asking is, what happens if you try to access the drive currently being formatted? Does it crash? The answer is yes and no. No, in that most programs are quite happy to be run, exited and otherwise manipulated, whilst in operation. Accessing drive B will give the usual 'Drive not connected' alert. Yes, when the program is run from within NeoDesk. Accessing drive B caused a crash of the worst kind, an exit followed by a complete lock out.

The moral of the story is that if you intend to make use of Mystic, then do test it with software which you intend to use. Formatting options are fairly standard enabling you to change sectors, tracks, sides and drive similar to DC formatter.

• **Dual Format.** Calling all double sided

SOUNDTRACKING ON THE ST

Soundtracker has to be the most popular music writing program for the Amiga ever. Hundreds, perhaps even thousands, of instruments and scores have been produced over the years, with the program itself now reaching it's 15th odd update by yet another bunch of Amiga hackers.

Now there's an ST version from MPH. It's based around the idea of having four channels which can play any one of a number of instruments. These channels are represented visually by notes A to G in four vertical columns (there's sharp variations too).

Some instruments can be triggered to play continuously, and this can be changed by playing

another note on the channel or turning it off. Scores are divided into patterns consisting of 64 notes each and these cane be arranged in any order. And once in the desired order, you have complete songs ready for playing.

Soundtracker produces three file types instruments, songs and modules. Instruments are short samples and songs are four channel scores holding information for which 16 instruments are used. A module is one large file which contains a song together with associated instruments.

The demo disk includes seven modules and 26 instruments but no songs! Since modules are songs with instruments however,

this is no great loss. From this version you can save instruments and songs, but not modules. Again, this isn't a disadvantage unless you were hoping to include work produced via Soundtracker within another program. Be warned though, when saving a song you'll have to give it a name, and you won't be able to do this unless you have the top most entry (which is empty until you type something in) selected and type capitals for the name.

The Soundtracker demo could give Quartet a run for it's money, as it's a lot easier to use, and it's free! The commercial version of Soundtracker will definitely give it an edge but more of that in the news, as it's not going to be PD.

users. Ever wanted to give your single-sided friends, disks which they could read but which you could make full use of? Ever wanted to create disks like our cover disks? Then Dual formatter (ST Club Disk magazine 18) is what you need. Using this program, you can format a disk containing a folder called 'SIDE_2' with a file called 'DUMMY' in it. The idea is that you put your files on side A, then delete the file 'DUMMY' and place the files you want on side two in this folder. Simple, right?

The limitation of such a disk is that it can only hold 32 files in the root directory but this can easily be cured by making a few folders. The program is very simple to use and reliable. There are other programs included with the Dual Formatter, which include another version of the program for producing large capacity disks that can't be copied from the Desktop, but can be copied using a copying program supplied.

The copying program gives information on the disk being copied, very useful if you're not aware of the number of tracks, sectors and sides on a disk, and would like to know these statistics. A word of warning though,
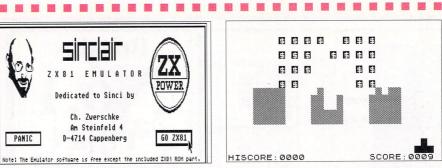
The disk copier in action, look at the disk info carefully, could Desktop's disk copy cope? Not with 40 tracks it can't!

Who on earth are those guys with the silly little flags?

disk copy is rather crude and only works on a machine with 1Mb or more. The disk compare program may seem like an obscure novelty, can you think of a use for a program which compares two disks to see whether they are identical? Yes? Well feel smug and send in a suggestion. But if you can't, then an obvious use for it is virus detection. If your program starts doing strange things and you suspect a virus, then compare it with it's master disk. If there's a difference, then there you have it, something is wrong.
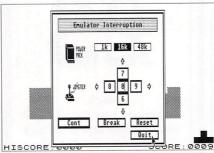
• **Expander.** When an ST user discovers that most of their disks are single sided, perhaps due to upgrading from a single sided drive to a double sided one, then there's a lengthy, boring, job lying ahead. This is to copy all the files off single sided disks to double sided ones. There is however, a way around this with the 'Expander' program from France. Simply click on the 'Expand' option, and it turns your single sided disk into a double sided one, keeping the files intact. ●

Choose the correct one and your ST can emulate yet another machine

Cosmic invaders dropping inverse asterisks on you!
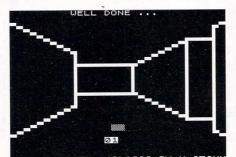
1K DAYS ARE BACK AGAIN

Press Undo, and it stops dead in it's tracks, enabling you to chose how you want your '81 to behave

No, not corruption - it's machine code on the ZX81. The only way to save machine code on the ZX81 was to poke it into lengthy REM lines, and save the program! Inverting the last character in the filename when saving enabled you to save programs which ran automatically on loading

The machine congratulates you upon finding the gold brick hidden in the maze. Screen updates for this game are very impressive

Remember that cute little black machine of the early '80s? It had a membrane keyboard, 1K of RAM, and only upper case characters (cos there wasn't enough room in the ROM for the full ASCII set). Pixels so large that diagonal lines looked like ladders and sprites which looked better if they were made from a combination of alphabetical characters and block graphics. Don't know what I'm wibbling about? Well let's just say that you've missed one of the golden eras in home computing.

You got it. The dinky little ZX81 from that cheery favourite Uncle 'sit on my lap and I'll give you something to compute with' Clive. And now - horrors - the unthinkable has happened. There's a ZX81 emulator for the ST!

Load up the program on disk GD580 from Goodman PDL and you're presented with two options: Go ZX81 or Panic. Go ZX81 and the screen turns white. Press a key and there it is, the good old 'inverse K' cursor.

Emulation is spotless. Put the Atari ZX81 into 'FAST' mode and it blanks out, just like the real thing. But just before you start having nightmares about the dreadful tape loading errors the authors have knidly included 38 programs on disk - ranging from assemblers and bio-rhythm generators to adventure and arcade games - just what you need to get started. And presumably, it wouldn't be too difficult to port over more software from your (or a friend's...) old ZX81.

Typing LOAD "" doesn't make the screen produce the wavy lines of old, but brings up a file selector instead. Pick an .81 file, and away you go. And if you can't remember where the keys are, hit the help key and up pops a picture (in full colour on a colour monitor), of a ZX81 keyboard.

1K not enough? Need more memory? Simply press the Undo key, and you can chose the size of your 'RAM Pack' and re-configure the joystick to respond to the keys of your choice.

Purists(!) may notice that the emulator is not quite as fast as a real ZX81 and indeed, it isn't. The Z80A was quite fast in the first place (3.5MHz) and the Spectrum and ZX81 were slow due to their Basic being designed in Forth rather than because of hardare limitations. If you've the slightest interest in the original home micro (and you should, it paved the way for the entire home computer boom), then get hold of this fun emulator. ●

WHERE TO GET IT...

- Riverdene PDL63, Wintringham Way, Purley On Thames, Berkshire RG8 8BH.
- Page 6 Publishing, PO Box 54, Stafford ST16 1DR
- ST Club, 49 Stoney Street, Nottingham NG1 1LX
- The South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD

- Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent ST3 1SW
- 16/32 PDL35, Northcote Road, Strood, Kent ME2 2DH
- MPH10, Chandlers Court, Eaton, Norwich NR4 6EY AAUG45, Coleburn Road, Lakenham, Norwich NR1 2NZ
- PDQ - Games, PO Box 38, Eastleigh, Hampshire SO5 5WR

Do you look on with envy as others run up enormous scores on the latest arcade corker? You need the unique Atari ST User Turbo Slowdown CPU Decelerator! It's a big name, but a tiny device, which sits unobtrusively beside your ST reducing performance by up to 100%. That's right! For just a few measly pounds, this incredible device will return you to the good old days of slooowwww motion silicon. But who actually wants to slow down their ST? Most users dream of having a 68030 or 68040 chip to speed things up. Why should a slow ST be a good idea?

Get your head around this: Slower games mean reaction times increase. You'll be able to blast your way through levels previously unreachable except by those almost superhuman coin-op kids. And imagine you're a programmer (it's difficult I know, but try OK?). Imagine further that you've just finished the latest machine code hi-res print routine, when you happen upon a small bug. Something is crashing. But where? With the aid of the amazing A.ST.U.T.S.C.D., you can reduce the speed of execution of your program and watch that bug squirm before your very eyes.

UNDER THE LID

Remember last month when we stunned the ST with the aid of a switch? By grounding the 68000's HALT line, we froze the CPU and brought the ST to a standstill. Flick this switch on and off and processing can be slowed to whatever rate we like. Attempting the process by hand would result in aching wrists, so Slomo! achieves the arduous task electronically, at least electromechanically.
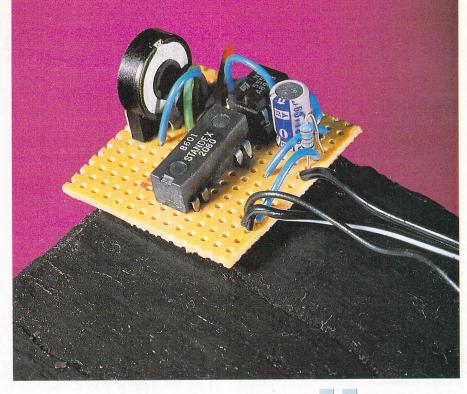
At the heart of the project, is a small chip know as the 555 Timer IC. This wonderful little IC will generate a series of voltage pulses, the frequency of which depend on the values of resistors and capacitors surrounding it. These pulses cause a small relay - an electrically controlled switch - to flick on and off and the contacts of the relay ground the HALT line, resulting in a slow motion effect - simple, right?

Those in the know may wonder why we use a relay when a transistor or logic gate would do just as well. The answer is, I felt like it. I came across these tiny relays in the latest Maplin's catalogue and just had to find a use for them, so there! Besides, they make a nice ticking noise. Using relays means you could use the circuit to control all sorts of non-ST related things, such as flashing lights and erm, flashing lights and things.
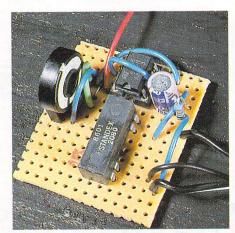
GET OUT YOUR TOOLBOX!

We're about to build our first project with active components. The bits required for the project are few and small and the finished product will be on a small piece of circuit board about an inch square - the cutting edge of modern technology! In the old days, a circuit such as this would take up an entire room and use twenty thousand valves. They'd get so hot you could make toast with them or heat Milton Keynes.
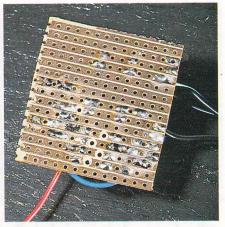
To connect the components and keep them in one place, we'll be using a special

SLOMO!

Following the enormous success of last month's Freeze Frame, John Kennedy presents his stunning extension - Slomo!

This is the upper, component side of the Slomo circuit. Pay particular attention to the orientation of the chips and capacitor. Notice also that although in the text it is recommended that both chips are placed in sockets, here the macho solder master has decided to do without the relay - what bravery!
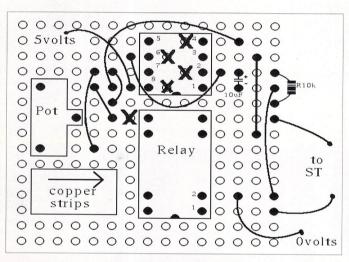
Soldering together such small strips can pose problems for the beginner. Some tips: try to use as little solder as possible to avoid a mess and/or a potential short-circuit. Try to minimise the amount of time the hot iron is actually in contact with the components. If you bake them too long, they'll break.

form of circuit board known as 'strip board' (not to be confused with 'strip poker', a much more enjoyable pastime). A common trade name of strip board is 'Veroboard' and it consists of a hard, heat resistant non-conductive plastic sheet, with holes spaced every 0.1 of an inch. On one side is a series of conducting plastic strips. By passing components through from the blank side and soldering their legs to the strips, you can construct circuits quickly and easily. If necessary, the copper strips may be broken by using a craft knife or drill bit to widen a hole.

Cut the strip board to size using a hacksaw. You should have plenty left over, and it might be a good idea to do some practice soldering to get the hang of things. Never apply too much solder, as it will spread over the tracks and mess up the circuit. Break the tracks on the board (indicated by a cross in the diagram), switch on the soldering iron and locate the 555 timer chip.

To prevent damage to the chip from excessive heat, we'll solder a small socket in its place and when finished, insert the chip. Place the 8 pin socket on the non-strip side, so the legs all fit through. You may want to hold it in place with a tiny amount of sticky tape or blue tack. Solder all the legs into place. Now do the same with the 14 pin socket. This will hold the relay. Solder the pre-set resistor in place. If the legs don't seem to line up, bend them gently. Solder the legs into place.

Now solder the connecting wires. Ensure that the plastic insulation is covering them all well. The resistor and capacitor can be mounted but pay careful attention to the orientation of the capacitor - the leg with minus signs must fit to the same strip as pin 1 of the chip. The power and computer leads can be connected next. Note that in this project we'll be powering the circuit from a 6 volt battery. This is a safety precaution and you should be able to power it from the 5 volts available from the joystick port if you so desire.

Check all the connections carefully. Have the copper strips been broken properly? Are all the connecting wires in the correct place? Is that capacitor in the right way round? Good. Now plug the chips into their sockets. Be very careful! Check and double check that they're in the proper way. Now have a cup of tea. After the tea, connect the contacts to the battery and hold your breath. Listen carefully and you'll hear the tiny click of the relay as it switches on and off. If you don't, try adjusting the preset resistor. Sometimes the circuit will not operate if the preset is at the extremes of its range.

Still no success? Have another careful look, and ask a friend to check as well. Assuming the circuit does click on and off, we're on to a winner. The two wires from the relay connect to the HALT and ground lines of the 68000 processor's pins 16 and 17. If you built the freeze switch last time, this won't be a problem. You might like to solder the wires in parallel with the switch. Cunning constructors will have mounted a socket to the HALT/ground lines and can therefore attach both the freeze switch and the decelerator simply by plugging and unplugging them.

For those who missed last month's exciting article, you need to disassemble the ST and connect the wires to pins 16 and 17 of the CPU. This can be done directly using probe clips.

AND FINALLY JOHN?

And finally 'User, flashing lights freaks can adorn the project with LEDs to show the rate of the switching. You should be able to adjust the rate of the slowing effect by twiddling with the preset resistor. If you want dramatic changes to its speed, try substituting different values of capacitor and resistor. Finally, neither myself, Atari ST User or the nice woman in the newsagents can be held responsible if you damage your ST with DIY hardware attempts. Be careful out there, huh? ●

It's a tough assignment! Just one afternoon to create a complete work of art - even Van Gogh would have had kittens at that prospect...

12.00pm. Carefully choose your image before starting. I browse through magazines looking at photos because composition is very important - but beware of infringing copyright if you're drawing for publication.

Your picture needn't be a single photo, combining elements from several sources can produce interesting results. I often trace parts of pictures and compose them onto one sheet. Research is important as drawing even the simplest objects from memory and imagination is difficult and frustrating.

Remember when you choose a picture that unless you're using one of the more sophisticated packages which allows you lots of colours, you'll only have 16 to play with. The moral is don't be too ambitious.

One of the reasons I chose the image (apart from my incurable romanticism) is the attractive contrast of blues and oranges, and the limited tones. There are never enough colours in standard low res, so this picture makes ideal subject matter. Choose shades of tones (multiple blues and oranges) rather than lots of colours (red, yellow, green and so on) unless you're pretty sure it'll work.

With this picture I used a trick I often employ - I made several photocopies of the picture, cut them up then reassembled them until I had the best parts in the order I liked.

1 **12.50 pm.** Boot up Neochrome. I use lots of paint packages, but for this picture, I'll stick to old faithful - it's adequate and easy to use. With the original photo in front of me, I pick a rough palette, trying blocks of colour together. This will change many times.
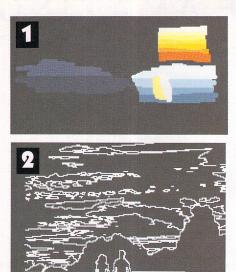
2 **1.15pm.** Next comes the line drawing. For this I used my graphics tablet ('cheat!' I hear you cry...). A tracing from the photocopy is a great help, not only to simplify the lines, but also I occasionally sticky tape mine onto the screen and draw in black on white behind it.

Trace only the basic lines - enough to get the proportions right - and the detail will follow. Don't rush this as spending time on the screen line drawing always improves the final appearance.

3 **1.30pm.** I've centred the image using the copy-box function (cut and paste will do it for you). With the photo in front of me, I've begun to fill in the clouds roughly and filled the cloudbank, sea and shore. Then I tidied up the figures ready to silhouette later. Three colours change here and the oranges become browner.

4 **4.00pm.** Now for the sky. Using the chosen three shades, I've filled solid blocks over the clouds and used the spray-can, first with the biggest nozzle along the joins, then with single pixel. By pointing to one colour and using the palette arrows to surround another, you can carry a colour on each mouse button. This saves constant trips to the palette. Paintbrush and Line do this too.

5 **4.30pm.** I copy that block and take it back to picture three using jack-knife to slide it behind my clouds (the three-

pronged impossible figure in the options). Now I spend a long time anti-aliasing the clouds into the sky, filling in the between shades around their edges by hand. I've yet to find software that does this well. The effect is nicely soft and blurry, and trims off all those stepped lines.

A quick check against my photo, it's not that close, but... well, artistic licence and so on and anyway, I like it! Decide here, that my original warmer oranges were better and change them back.

6 **6.15pm**. On to the sea. I have four watery blues, so I fill the area with the darkest, draw short horizontal lines in the lightest and merge them in. I use the photo here to pick out the lightest lines. Finally I use the spray-can fairly carefully to break it up a little, pick out a bit of detail on the shore in bla ck, then fill the figures now I've finished their background.

Anti-aliasing them a bit in purple softens their outline and helps shape them better. A few touches to the edge of the cloudbank and I start work on the waves and wet sand. I

THE WOMAN BEHIND THE BRUSH...

Mo Warden was a '70s art-school kid (you know the stuff, safety pins, *the* hair, *the* makeup, *the* pose...) who took up computer graphics as a hobby using a Commodore VIC-20. Stunning images emerged and she started painting commercially for Novagen 2 years ago. Her work includes Hellbent, Hyperforce, Minter's Colourspace and Damocles.

ART-WORK!

find I need another colour, so sacrifice the lightest cloud colour to become a whiter blue. I use touches of this in the sea too.

7 **(Large picture) 7pm**. Again I use the photo to help with the shore waves and reflections, not taking too much trouble over copying them, but it's used as a guide to texture. I'm mostly using the paintbrush now with a single pixel brush, always carrying two colours. For some parts I use lines, revamping my four water blues. I usually finish with a one-pixel spray-can. To end, I simply add my signature.

PIXEL PUNCHERS SIGN HERE...

Have you created a stunning image using obscure tricks and wrinkles? If so, we want to see it. Each month, a lucky artist will receive their very own exhibition on the Art-Work! pages. To be considered you need to send at least six electronic images comprising a finished image, several 'stages' and brief notes detailing how the effects were achieved.

A database program, as you probably all know, is the computerised equivalent of a simple card index file. With it you can create electronic 'cards' of almost any size and shape and 'write' down facts and figures on them. You can use a database to keep a record of your video or stamp collection, or remember all your back issues of Atari ST User and the articles contained in them (Magbase, the program on this month's cover disk does just that).

The advantage of a computerised card index over a manual system, is that the information stored on the cards can be manipulated by the computer in a variety of ways. At the push of a key you could sort the cards into ascending or descending alphabetical numerical or any other order, pick out all the cards containing the name Smith but not Jones and print them on labels ready for sticking on envelopes and remember, all the processing is done incredibly quickly - no more vain thumbing through card indexes! The scope of the database is enormous and a bit of lateral thinking will reveal a wide variety of uses.

If your own database has done little more than file Pacific Class 4-0-4 numbers then I suggest that you dust it down and prepare for action, because this month we're talking real-life, professional applications.

PURCHASE ORDER PRINTING USING DATA MANAGER

In this first database example we're going to construct a simple stock control routine in which each item monitors its own stock level, flagging itself as being in need of further supplies as the stock level falls below a pre-determined limit. On a weekly basis you can run a search routine to identify low stock items and send these to the printer, in a format that will print directly onto your purchase order forms.

Step one is the creation of a suitable database structure. Timework's Data Manager works in a columnar format during database creation and for each column or field of your record, you're prompted for a column title and the type of data to be stored. Comply with these requests, press the Alternate and N keys enter the information for the next column.

Data Manager is unusual in that it doesn't ask you for the field width at this point, the field structure must be subsequently modified to accommodate field widths in excess of the width of the column title.

Create the following columns:

Column title	Data Type	Numeric Format/Calculation
Item description	Text	
Part No.	Text	
Quantity	Numeric	000000000
Re-Order Level	Numeric	000000000
Re-Order Qty	Numeric	000000000
Re-Order?	Calculation	IFC3<=C4
		THEN 1
		ELSE 0

The numbers C3 and C4 refer to columns three and four. The amazingly complicated and arcane formula shown above is checking whether Quantity is less than or equal to the Re-Order Level and if this is the case, then it places a one in the Re-Order? field. If not, a

FIELDS, FILES - HO HUM!

One step ahead of the Data Protection Registrar, Jon Revis presents a Masterclass of database tricks and turns to keep tabs on your nearest and dearest...

Purchasing data in columnar view

zero is stored in the field (this flag can also be used to identify which items require purchase orders to be printed).

Column title	Data Type
Numeric Format/Calculation	
Supplier Name	Text
Addr1	Text
Addr2	Text
Addr3	Text
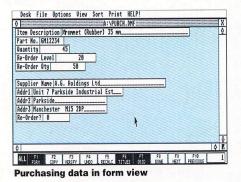
Once you've entered the above column details, press F1 to change to form view and use the mouse to drag the individual fields to

sizes more appropriate to their prospective contents.

Remaining in form view, enter dummy details for about five records, ensuring that at least a couple of them have Quantity values lower than their corresponding Re-Order levels. To get you started, enter the following information in your first blank record:

Item Description: Grommet (Rubber) 35mm
Part No.: GM12234
Quantity: 45
Re-Order Level: 20
Re-Order Qty: 50
Supplier Name: A.G. Holdings Ltd
Addr1: Unit 7 Parkside Industrial Est
Addr2: Parkside
Addr3: Manchester M15 2DP
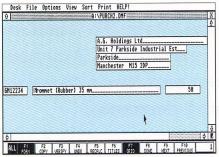
Just in case you're anxious about the lack of activity in the Re-Order? field, the calculation is not made until you've pressed F8 to accept

Purchasing data in form view
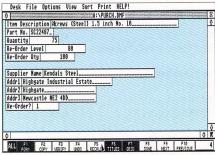
the record. We're now in a position to customise the output format of our data. Still in form view, use Data Master's Hide Column command to eliminate those data fields not required on the purchase order and these are:

Quantity
Re-Order Level
Re-Order?

Finally, toggle off the Field Titles and use the mouse to drag the remaining fields into positions which correspond to the Supplier Address, Part No., Description and Quantity

Purchasing data ready to print out

Single record display from PURCH.DMF

sections of your company's purchase order form. This will require a few trial printouts before you get it right.

Once you're satisfied with the layout of the printed records, you can ask the database to scan through your records and print purchase orders for any item whose Re-Order? flag is set to one. With Data Master this is done in the following way: Switch to column view, highlight the Re-Order? title, pull down the View menu and highlight By Specification, highlight the Is Equal To and Matching boxes and place a 1 in the input field and click on the OK box.

Any records which don't satisfy the search criteria have now vanished. The remaining records are ready to be sent to your printer. Using this system, you can automate the laborious task of completing purchase orders. They can be done in one large batch, quickly, accurately, and without forgetting anything!

IDENTIFYING LOCAL STOCKISTS USING SUPERBASE

In this second database example we utilise the relational ability of Superbase Personal to link a Local Stockist from one database, to the customer enquiry details stored in a second. As new customers are added to the database their nearest stockist is allocated automatically - no typing mistakes, no wasted disk space through duplicated stockist details and no hassle!

To accomplish this marvel of data manipulation requires the following steps. Create a customer database, create a stockist database, define a Superbase query to link the two together, execute the query to generate the combined output to printer, screen, or file.

structure for LINK database

Editing the query

Linked output from both databases

Using the file definition option create a database file called LINK and define the following fields:

Field name	Attributes	Format
Cust Name	TXT	30
addr1	TXT	30
addr2	TXT	20
city	TXT	20

Exit the file definition screen and you'll be prompted for the name of the field which you wish to index the database on, select City from the field list and click on OK. Save this file definition and create a second file called LINK2 using the following field data:

Field name	Attributes	Format
Area	TXT	20
Stockist	TXT	30
addr1	TXT	30
addr2	TXT	20
city	TXT	20
Tel	TXT	20

This second database should be indexed on the Area field. When linking Superbase databases in this way, it's important that the fields forming the link are indexed.

Before we move on and define our query, I suggest that you type about five or so entries into each database (the following data should give you an idea regarding what you should be entering).

Database LINK
Cust Name: Mr D Egan
addr1: 54 Whitehouse Lane
addr2: Glenrow
city: BRADFORD

Cust Name: Mr R M Shields
addr1: The Lodge
addr2: Windy Ridge
city: BRADFORD

Cust Name: Mr B Atkins
addr1: 23 Westmore Drive
addr2: Hightown
city: LEEDS

Database LINK2
Area: BIRMINGHAM
Stockist: Mc Taggart Electrics
addr1: Unit 7 Parkside Industrial Est
addr2: Parkside
city: Birmingham
Tel: 021 756 2244

Area: BRADFORD
Stockist: Ranger Electronics
addr1: 311 Randall Street

Single record display from LINK database

addr2: Lower Briggate
city: Leeds
Tel: 0532 334867

Area: LONDON
Stockist: Inner City Electrics
addr1: 201 Layside Court
addr2: Kings Cross
city: London
Tel: 071 335 8899

Stage three is the definition of the query that links the two databases and determines which fields are to appear in the final output and how they're displayed.

Pull down the Process menu and select Query Edit. The only boxes that we're interested in are Fields and Filter so click on each of these in turn and enter the following details:

Fields: FIELD @1Cust Name,@35Stockist NEWLINE
@1addr1.link,@35addr1.link2 NEWLINE
@1addr2.link,@35addr2.link2 NEWLINE
@1city.link,@35city.link2 NEWLINE @35Tel NEWLINE
NEWLINE

Filter: city.link = Area

This daunting array of commands may look complex, but Superbase's field and parameter selection system automates its creation very effectively. The Fields entry determines not only which fields from either database are to be displayed, but also their location on the screen.

The FIELD command inhibits the printing of field names thus preventing them from cluttering the top of every page. The @ symbol

followed by a number tells the program at which column the next field is to be printed, while NEWLINE moves down a line before displaying the field.
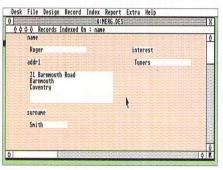
Filter defines the link between the two databases. In this instance, the program is instructed to link two records if the contents of the City field in the LINK database is equal to the contents of the City field in the LINK2 database.

To see this in practice, just click on the OK box to accept the query that you've just defined. Following a brief whirring of disks, your customers will scroll up the left side of the screen while their corresponding stockist scrolls up the right. With a little more time and

effort you could probably combine the results of this exercise with the mail-merging routine that constitutes the third database example.

MAIL-MERGING WITH DGBASE

Mailmerging, the process of integrating data from a database into a standard piece of text, is a feature normally associated with a word processing package, rather than a technique that you'd attempt with a database. The system would be too easy to set up using Superbase as it has a built-in text editor, so this time we'll be using Digita International's DGBase database package.

Step one in our foray into the mail-merging business, is to create a simple database containing a few customer details. DGBase operates in a similar fashion to the Data Manager package that we used in the first example.

Standard database layout

Text screen incorporating data fields

Just bang your text fields into the computer ignoring length, then stretch them to size with the mouse. Four fields will suffice for the moment and these will be called:

Name:
Addr:
Surname:
Interest:

Use the mouse to expand the address field and you'll be able to accommodate several lines of text. The interest field can be used to target your output at only those customers who may be interested in the product currently being promoted at that time.

In this example, you're the proprietor of a

hi-fi shop and have therefore categorised your customers into groups based upon the type of equipment they are interested in. Enter the following data:

Name: David
Addr: 66 Roundhaven Court
 Lockwood
 Huddersfield
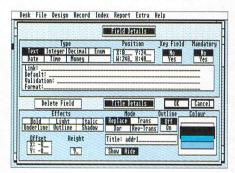
Surname: Banks
Interest: Amplifiers

Name: Roger
Addr: 31 Barnmouth Road
 Barnmouth
 Coventry

Surname: Smith
Interest: Tuners

The current screen display is very similar to the others that you've encountered so far with the fields and field names laid out in regimental fashion. The first step towards a standard letter format is to hide the field names, and this is done by double-clicking on the field box thus calling up the Field Details dialog box.

Selecting the Hide option will remove the corresponding field name from the display, so repeat this procedure for the three remaining fields. Pressing T for text will conjure up a new dialog box offering you the opportunity to input single lines of text. Once entered, these

DGBase field editing dialog box

can be moved around the screen using the mouse.

With a little careful planning, you can intermingle plain text and data fields to create a promotional letter that can be automatically printed with the details of specific customers. Who needs a word processor when you can manipulate a database to suit your diverse requirements?

I hope this excursion into the mysterious world of data manipulation will encourage you to dig out your database manual and find out what your own package is capable of. I think that you will be pleasantly surprised by the power of many ST databases, I was! ●

Find out its limits.
Look in the mirror.

WIN TWENTY THOUSAND POUNDS' WORTH!

That's right, kids, it's competition time again. Part two of 'USER's fabulous Atari mega-giveaway. Get out your pens and get cracking...

THE LONG-AWAITED SEQUEL...

Last month we asked you to use your skill and judgement to determine which packages the software screenshot snippets represented.

So, you've completed the first part of the competition - it was tough but you survived, and now you're ready for part two, right?

And part two couldn't be more simple, we're going to ask you to become a poet. In not more than one word (and using the entry form provided) complete the following limerick:
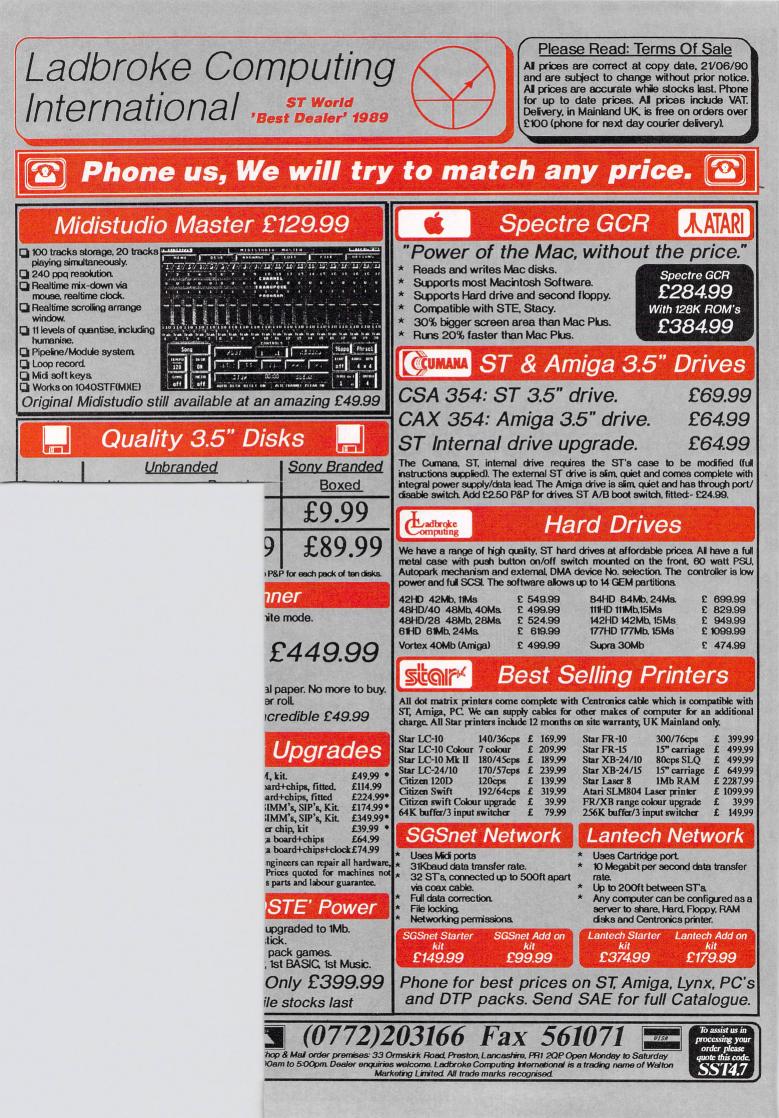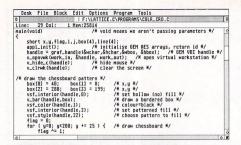
Entering source code is a breeze. The editor is like the one used in Power BASIC and Devpac 2 and it shares many common key functions

Several files can be edited at once and the 'Arrange Windows' menu function enables you to choose the screen layout of the source code windows

C programs rarely work first time so it's useful to have a good debugger like MonST at hand

Product: Lattice C Version 5
Supplier: HiSoft
Telephone: (0525) 718181
Price: £149
Configuration: All STs

L attice C for the Atari ST was originally produced by Metacomco, a company with a reputation for quality serious software. Metacomco was responsible for a large range of excellent compilers Sadly, both the product and company have long departed for that great software market in the sky. Lattice C however, has recently been reincarnated by popular programming-orientated software house HiSoft which has improved and updated it - with a complete re-write - to give us release version five.

The size of the package is frightening - it's far bigger than any other I've seen - and consists of three grotesquely large manuals, a small installation guide and a smart disk wallet containing seven double sided disks. I wasn't reassured by the first page of the installation guide which displayed the now tired message "DON'T PANIC!" in big letters!
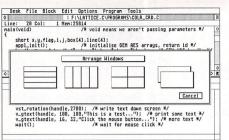
With such a large, complex package it can sometimes be an hour or two before the software is installed and up and running, but a quick glance through the rest of the guide revealed that to use Lattice C straight away, I could abandon the manuals, cast aside six of the disks and simply boot up with disk one. A RAM disk is automatically installed and the GEM-based editor/shell can be run from the Desktop. To give the system a thorough workout, I decided to create a simple test card like those shown on TV. Entering text is quick and easy thanks to the speedy editor which works in a similar fashion to other HiSoft editors. An extension to the various load, save, search, block move, delete and copy functions is the ability to load up to four files at once. You can cut, copy and paste between the files which makes it easy to grab useful functions from previously written programs and insert them into new ones.

Once the source code had been entered it's a simple matter to click on the Link with GEM menu option and then Compile and Link. The compiler and linker work fairly quickly though the process isn't as fast as Laser C.

Where Lattice C excels, is in providing a vast number of options such as those enabling you to include several levels of debugging information, optimise for space or execution speed, turn off or on stack checking, enforce ANSI compatibility and many many other effects.

SWATTING BUGS

Once the program has been compiled, it can be run without leaving the editor. After setting

C-ING IS BELIEVING!

Wearing nothing but a knotted hanky, Roland Waddilove casts himself adrift in HiSoft's latest C...

You need to be an egg-head to understand this little lot! Data registers, address registers, memory dumps, disassembled code and more...

the 'Run With GEM' menu option the program can be tested. C programs rarely work first time and my test card was no exception.

I re-compiled the source code with the debug options on and clicked on Debug on the Tools menu to call up a specially modified version of HiSoft's MonST. This debugging tool will be familiar to Devpac devotees as it works in an identical manner. The source code is automatically loaded and you can single step through your C program. Unfortunately, you need to be a whizz at machine code to understand the information displayed on screen.

Four windows show the 68000's registers, a ASCII/hex memory dump (useful when searching for variable names and the like) a few lines of disassembled machine code and a few lines of C source. Brilliant for boffins, but not recommended for novices.

Dabbling with the monitor revealed a bug

in the v_ellipse() library routine which meant red faces all round at HiSoft! It's now been fixed however, so you shouldn't come across the problem. Another possible snag is that C compilers take up a lot of RAM and disk space so the more memory you have the merrier you'll be (a hard drive would be useful too!) The software can be made to run on a 520ST, but I wouldn't recommend it.

Lattice C is the most comprehensive C development system you can buy for the ST. Praise indeed, but it combines superb software with a pile of useful technical manuals that will take weeks to wade through and it's relatively inexpensive when compared to rival products. ●

THE BOTTOM LINE

Features: Massive manuals, superb software and the best backup available make this package a must for C programmers.

Ease of use: All C compilers are incredibly complicated to use, but well thought out software and easy-to-read manuals soothe the headaches.

Features	Ease of use
Excellent	Excellent
Good	Good
Average	Average
Bad	Bad
Appalling	Appalling

WELL 'ARD!

A trio of hard utilities from our transatlantic cousins. Ahmad Alam extends his lariat and bellows a big howdy!

Hard drive backup, recovery and caching programs, all shrink-wrapped direct from the States.

Backing up a hard drive can be a complete pain, even a 20Mb device will require at least 20 floppies, and a lot of manual labour. The backup program Hard Disk Toolkit, employs a rather clever technique. It uses it's own special format disks, which can hold more and which can be read from and written to at much greater speeds than normal TOS formatted disks.

If you'd like to reduce the number of disks used and don't mind a little increase in the time it takes to perform a backup, the program offers two modes of compression. Default mode is fast and the other is slow, which offers greater compression. Using wild cards and folder names, you can easily set the program to backup either an entire partition, or just a single file.

The most outstanding feature of this program has to be the incremental backup feature. Backed up are marked, then whenever the partition is backed up again, the program detects which files have been modified and backs up only these.

The special format disks can either be formatted as the program performs the backup, or it can be instructed not to format disks previously formatted in the backup disk format.

For those who don't like WIMP environments, there are command line versions of the programs included but the programs are easy to use and reliable.

```
Total FAT clusters     6088   Bad File Endings        0
FAT File Starts         282   Invalid FAT clusters    0
FAT File Ends           282   Chain collisions        0

Contiguous Clusters    3878
Non-contiguous Clusters 121

Total Files             283   Orphan Files            0
Total File Clusters    4281   Orphan Decendants       0
Free Clusters          1806   Orphan Clusters         0

Recoverable Clusters      0
Unuseable Clusters        0   Total Errors            0
Unknown Clusters          0   Total Good Files      283

Status display for Volume F   [Continue]   [Print]
```

Note how the extender display bar changes to display the size of the files to be copied

A rather pleasant surprise is that it works with floppy drives too. The Sentry program enables you to view information about a drive. As time passes, a hard disk is likely to become fragmented (empty spaces everywhere). When trying to save a file, the bytes could be scattered all over the drive. The defragmentation option, arranges files into contiguous sectors, making them load faster.

A file recovery program is included, should the worst happen and you delete the only copy of an important file. The program will not attempt to recover files if the fat has been corrupted, not surprising really as this missing option is in fact, impossible!. Corrupt sec-

tors can be marked so that they are never used again.

Hard Disk Accelerator the caching program, is probably the most ordinary utility of the three. It simply gives you the option of installing a RAM cache of between 8K and 64K. It works quite effectively, but eats up RAM, as any cache would. It doesn't seem to offer anything special over PD caches or the ones which are supplied with most hard drives so you'd probably be better off choosing a free example from the public domain. ●

THE BOTTOM LINE

Features: The programs do their job well, but look at the prices -absolutely outrageous!

Ease of use: Nice little manuals with each one. The programs are simply to use and require little documentation.

```
Ease of use        Ease of use
Excellent          Excellent
Good               Good
Average   ►        Average   ►
Bad                Bad
Appalling          Appalling
```

- -

SPEED STEed

PC Speed is the most successful of the popular PC emulators. Ahmad Alam checks out the STE version...

PC Speed is the best selling hardware PC emulator ever. Extensive display card support including CGA, Hercules, Tandy colour and Olivetti high-res mono ensure PC Speed provides more display standards than any other emulator.

Extended memory support is available on machines with 2Mb or more and hard drives and auto-booting are supported. The mouse, serial and parallel ports can be used just as though the ST was a real PC.

It isn't all sweetness and light however. The standard PC Speed board has two drawbacks. A socket has to be soldered onto the 68000 (risky, excess heat can fry your chip) and the board makes contact with the shielding in some STs making it necessary to stick insulating tape on the shielding.

Now however, there's an STE version. The manual is the same crappy few sheets of A4, as supplied with the original. There's an extra page for the STE with an obscure mono photo showing an STE with the emulator installed. The documentation is still hopelessly inadequate. Owners of the ST version may be interested to know that upgrading to the STE version costs £50.

Opening your STE invalidates the guarantee, so bear this in mind. The board itself is tiny - smaller than a floppy disk. It simply has the processor on one side with two chips at right angles, four surface mounted chips and 64 pins in a square arrangement sticking out of the board next to the processor.
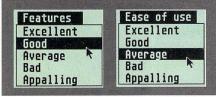
Installation is a simple but delicate operation, the pins are thin and fragile, bend one and you could have a serious problem on your hands. The first thing you'll notice is that the 68000 has a pair of clips placed over it which have to be removed.

When the board is placed on the 68000, you won't be able to see where the pins are going, therefore substantial lighting is essential. Get a table lamp if possible. Then applying light pressure, push the board into place

making sure it's even. Take care not to bend any pins. If all seems secure, re-assemble the machine and try it. The manual mentions that you should apply insulating tape to the shielding to avoid contact with the board. However the board has a very low profile, giving it ample distance from the shielding, therefore there seems little point in applying any tape. ●

THE BOTTOM LINE

Features: A great product made even better. And solder-less really does mean solder less.

Ease of use: Follow the instructions and you won't have any problems. The manual however, leaves a lot to be desired.

```
Features           Ease of use
Excellent          Excellent
Good               Good
Average   ►        Average   ►
Bad                Bad
Appalling          Appalling
```

RUBBER BANDING...

File selection beyond your wildest dreams, it's all on offer in the Universal Item Selector. Ahmad Alam decides it's time to get choosy...

Product: Universal Item Selector III
Supplier: ST Club
Telephone: 0602 410241
Price: £15.95 until the end of July
Configuration: All STs, mono and colour

The Universal Item Selector (hereafter UIS) is installed by giving it your name and a serial number which is found on the disk label. This process produces a 29K program which you can either execute from the Desktop or put in an auto folder for automatic loading.

What makes this selector really stand out from the crowd, is that files can be selected by 'rubber banding', just like grabbing files on the Desktop. UIS's rubber banding is actually better than that offered by the Desktop, as you can move north west too.

File manipulation options provided include move, copy, rename and delete. These are not click boxes, but those in which you drag files. A nice touch here is that the right mouse button can be used instead of the shift key for file selection and de-selection.

Should file names clash, options are provided to ignore further clashes, skip the current clash, confirm a file overwrite or cancel the whole operation. Folder creation is supported too. Drag files to the 'tick' icon and you can change their attributes. This enables you to make files read-only or hidden.
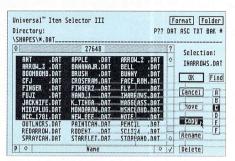
The selector can be one of three sizes,

Note how the extender display bar changes to display the size of the files to be copied.

small, large, and large with multiple columns. The latter enables you to see files in three columns, the only snag is that when you rubber band to select one column, it selects all three! Sorted files are grouped in rows not columns, so this shouldn't be a worry.

Sorting is provided on name, date, size, type and 'no sort', which is the order in which files were written to disk. The six by six system font can be used to cram even more files onto the screen. If you have disks or a hard drive with files buried deep within folders then they can be found easily using the find feature. The selector can also be dragged to where ever you want it to be, without destroying the background. However this doesn't

work if there isn't enough memory free for it to create a buffer for the screen.

Directory paths can be stored so that you can locate those hard-to-get-at files and these can be saved and retrieved using either functions keys or the mouse. Four extenders are provided and can be changed by either keying in an extender or dragging a file onto an extender, following which, the extender adopts the extender of the file dropped (!) A very unusual feature of UIS is that it enables a cold or warm reset to be performed using combinations of hot keys. ●

THE BOTTOM LINE

Features : Everything Desktop does plus more! The price is a little steep however.

Ease of use : Some functions require clicks on the strangest places, but otherwise no real problems.

Features	Ease of use
Excellent	Excellent
Good	**Good**
Average	Average
Bad	Bad
Appalling	Appalling

Product: Contrack Ball
Supplier: Contriver
Telephone: 0280 822 803
Price: £34.99, Configuration: All STs

Mice and trackballs perform in very similar ways and as a control device interfaced to a WIMP front-end, there's little to choose between them (apart from feel and convenience) - the one is basically an up-ended version of the other. But after several years of ruling the roost, the mouse may be pushed out in favour of the trackball

The main advantage of a trackball over a mouse is that you don't have to move the device itself, just twiddle a seated ball. This saves desk space and also removes the problem of the mouse moving off the edge of the mouse mat. Trackballs are also handy to use in conjunction with a large A3 screen where even an accelerated mouse would need several sweeps to move from one side of the screen to the other.

TRACK ATTACK

Up-ended mouse or efficient controller, the trackball is making a comeback. Dave Stewart rolls out the latest

It's not all good news however, there are some severe disadvantages associated with trackballs. The worst is the click and drag operation which is very tricky to get right. Contriver's Contrack Ball offers a solution in the form of lockable buttons. It's a great idea in theory and actually works if you persevere. The trouble is that the button lock - you slide your finger across the button to activate it - is a bit too difficult to engage.

The Contrack has three buttons. The lower two map on to the left mouse button, leaving the top button for right mouse-clicks. Having the left mouse button represented by the lower Contrack button means that you can use your thumb to operate the most common button functions. This works quite well and helps to keep the ball steady as you're clicking. Left-handed users however, will have to 'thumb' the ball and click the buttons with their spare fingers - don't worry, it's not as difficult as it sounds!

The device is nicely styled, comfortable to use and even has a ball lock which lifts it

clear of the internal mechanism. Any knocks or bangs suffered during transportation are not transmitted into the Contrack's innards where damage could result. If you think you can live with a trackball, then a Contrack will fit the bill better than most of its rivals. ●

THE BOTTOM LINE

Features: Contrack Ball has a couple of features not found in any rival. The lockable buttons and ball lock are unique.

Ease of use: Comfortable to use and the lockable buttons make click and drag operations easier to perform.

Features	Ease of use
Excellent	Excellent
Good	**Good**
Average	Average
Bad	Bad
Appalling	Appalling

THE THREE Rs

Roland on 'Riting and 'Rithemetic...

Roland used to earn his crust exposed to a classroom of screaming horrors, but now, he's happy to confront them via the pages of your favourite mag. Who better than a former teacher then, to present the best - and worst - in educational software (aided and abetted by Ahmad Alam)

There's a wealth of serious software for secondary and further education establishments in the form of word processors, DTP packages, music, art and CAD systems. The market's positively bulging, but what about younger children? Are educational software houses as ready to cater for their needs?

Well, yes actually. The quantity of educational software available for youngsters is rapidly growing, with some companies converting existing titles from older 8-bit micros such as the BBC, and others originating new ideas never before seen.

At first sight, the astounding amount of software for your child, kid brother or sister may seem like good news, but take care when choosing software, as you could easily be duped into forking out hard earned cash for something with little educational value and poorly programmed to boot (and you'd *want* to boot some of this junk...). Some packages are brilliant, but there's also lots of dross around, too.

So to save you - and your children - from the clutches of the bad guys, we present the best and worst of the recent flood of software flying the educational banner. Spelling programs, maths tutors, arcade games and adventures.

hi! my name is Blackie

I am the witch's BLACK CAT.
Have you a cat ?Y

What is your cat's name ?sarah_

That is a nice name.
PRESS SPACE BAR
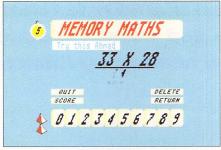
**Products: Maths Mania, The Three Bears
and Better Spelling
Price: £22.95
Supplier: School Software
Tel: 010 353 6145399**

School Software based in Ireland is a respected producer of quality software, and these three packages are no exception. The price of the products appears quite high at first, but Maths Mania alone consists of five maths or logic-based games all accessible from a main menu.

Maths Mania's Mind Power is a variation on that classic puzzle game Mastermind in which you have to guess a hidden code made up from five different shaped tiles. The game has been simplified for youngsters in that only one of each tile is used, and kids are marked on those in the correct positions.

Blast Off is a simple memory game in which you have to remember the positions of a small number of items on a five by six grid. On the genius level you have to remember both the location and type of object - we failed the test!

Memory Maths presents a simple sum on screen which is slowly erased. You must quickly work out the answer before it disap-

This educational adventure is full of pretty pictures and plenty of locations. For example if a child was to visit this loaction again, there may be a different animal present, with a different illustration, description and questions

ABOVE: The question starts to vanish as soon as it appears. A '14' forming the numerator of the fraction is virtually un-recognisable. A few more seconds and the whole thing will vanish

BELOW: The train gathers speed, belching out clouds of smoke as the questions are answered correctly. Get them wrong and you're warned as below

pears. Driver is another easy test of mental arithmetic and this time sums are printed on the side of a steam train. Answer correctly and the train puffs off the screen.

The final game, Brain Boxes, is another mental arithmetic game. An old fashioned pair of scales are drawn on screen and in one pan, there's a simple sum. To balance the scales you must enter the correct answer into the other pan.

The mouse is used extensively with rarely a key-press being required. Graphics are simple, yet big, bright and colourful. A few more sound effects or a little music would have been rather nice, but the program is good nonetheless.

The Three Bears is a graphic adventure loosely based on the traditional fairly tale. Visit the three bears and you'll discover that baby bear has been kidnapped by the wicked witch. How could you not try to rescue him?

After a brief introduction, you start at the bear's cottage and walk along a path to a field, a well, hill, river and garden. At any of these locations you may encounter the big bad wolf who demands something to eat (watch out - you might be on the menu!) or the witch's black cat may offer some friendly advice.

After spelling five words correctly, you're asked to spell 'hope' in the next three seconds

Graphics are quite good and the input required, short and simple. The game presents a few puzzles and questions may be asked which require a specific input in order to continue. Adventure buffs will solve this fairy tale in a matter of a few minutes, but a young child should find it an absorbing way to spend a few hours

Educationally, The Three Bears is good, but the price is rather high for such a simple game which will only hold a child's interest for a few hours.

The last package, Better Spelling, is (not surprisingly) a spelling tutor. You're tested on one of four groups of words and there are two types of test. Either a word is flashed onto the screen and you memorise it then type it in, or it's presented as an anagram which must be unscrambled.

Although Better Spelling has some nice graphics and easy-to-use menus, underneath all the glamour and glitter is a very simple program which a novice programmer could've written in a day or so. The high price tag may discourage many people from buying the package.

Product: Teach me to Read
Price: £9.95
Supplier: Phoenix Software
Address: 4 New Forest View, Cowbridge, South Glamorgan CF7 7ET.

Teach Me To Read is one of the most poorly presented packages of the test, yet the software is brilliant! Intended for very young children, its aim is to teach shape and word recognition in an entertaining way. It's funny, graphically superb and addictive to play.

Eddy, a spiky ball-shaped hedgehog with big eyes, a red nose and huge feet, guides you through a wide variety of learning programs. Many of the games involve matching an object, word or letter with one of three others. Point and click on the matching object and Eddy nods his head in agreement then blows a bubble which floats up the screen. Click on the wrong object and he shakes his head, continue to get the answer wrong however, and he shows you the answer.
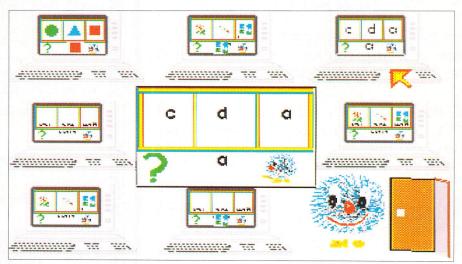
In one comical game he hides behind various objects and you have to point to the one he's behind. It's not difficult because his plump, spikey body sticks out around the edges of the object. Children will love it!

Most of the games are simple enough for the under fives to master, but there's also a couple of other games to keep older children happy. A simple wordsearch program and a sliding block puzzle (that even we couldn't solve!) will keep 10-year-olds amused.

Teach Me To Read is strongly recommended.
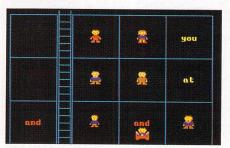
TOP LEFT: Select the correct picture and the little chap releases a ballon TOP RIGHT: The second set of screens accessed by walking through the door at the bottom. These include a Word Search and a sliding blocks puzzle BELOW: Gliding the mouse over the small pictures gives a lrager version in the middle, these include shape, picture & word matching in various forms

2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4

Product: Play and Read
Price: £24.95
Supplier: Prisma Software
Telephone: 051 357 1275

Play and read is a comprehensive package, consisting of two disks, a cassette, a short manual and five booklets. On the first of the disks there's a story and the idea is to boot up the program and start the audio cassette at the same time. The cassette tells
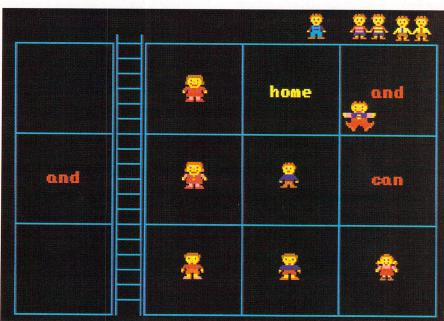
The boy jumps for joy as a word is matched correctly. Points are awarded in the form of little boys and girls appearing at the top of the grid

you about the computer and asks you to press certain keys on the keyboard (such as the spacebar) while a picture of an ST on screen shows you which one key.

The second disk is a simple game in which you have to match up words. A grid is drawn on the screen and a ladder runs from top to bottom. Several words are printed in the boxes on the right and using the joystick or keyboard, you guide a young

boy around the grid to the word which matches the one displayed on the left.
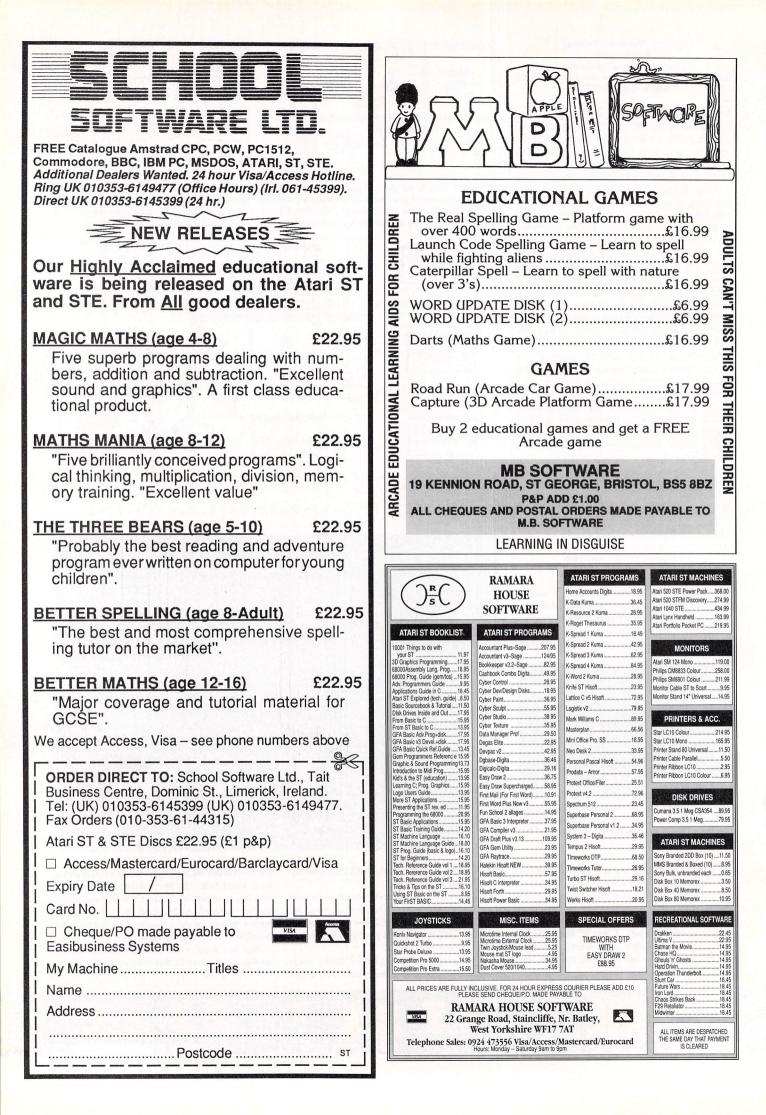
It's good fun for kids and will keep them amused for quite some time. The sprites are excellent, but the ladder and grid are poor. These need improving as it's confusing as to where you can make the boy walk on the screen.
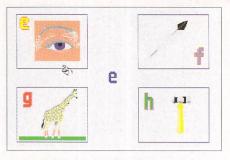
Educationally, the game involves simple shape recognition and a bit of dexterity with the joystick.

It doesn't teach the meaning of words so an adult on hand would help. The five booklets are excellent with big, bold, simple words on the left-hand pages and an illustration on the right. An adult's helping hand with the reading is required, but children can be left to colour the illustrations.

Play and Read is an excellent introduction to reading and the Atari ST. Recommended.

Product: Spell Book
Product: Let's Spell at Home, Puzzle Book
Price: £19.95
Supplier: Softstuff
Telephone: 0732 351234

Let's Spell at Home is an interesting and fun game in which you move a person around a large cut-away picture of a house and click on any room you wish to enter. The house is replaced by a large drawing of the selected room and you can point and click on most of the objects. You're then taken to a spelling screen where you spell the selected object.
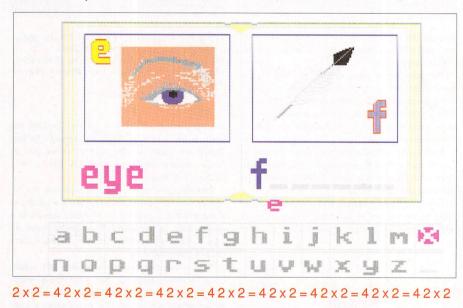
All input is via the mouse, and the alphabet is displayed along the bottom of the screen for you to point and click on. The program accepts only one name for an object when there may be alternatives. For instance, 'Hoover' was rejected when a vacuum clean-

er was displayed. Strictly speaking of course, Hoover is wrong, but it's a brand name which has passed into common usage. Apart from that, Let's Spell at Home is excellent.

The program is designed to improve the spelling of young children and involves matching up letters and entering short words to spell the name of an illustrated object, such as a cat or car. It's a good piece of software and my only criticism is the difficult mouse controlled method of entering text.

Puzzle book has less educational value and is aimed at older children and consists of several simple games. One involves finding your way out of a maze shown in 3D on-screen. In Magic Squares you have a three by three grid and the object is to fill it with numbers so that they add up to the same total in every direction.

Reaction timer is like the card game Snap, in which you click the mouse button when two identical cards are dealt. Robot Nim is the old matchstick game played with robots. Word Hunt has you making as many words as possible from one long word.

TOP LEFT: Click on the picture containing an object begining with the letter 'E'
BELOW: The book shows that I've already spelt 'eye' correctly, Now it's time to spell feather, with the 'e' being dragged to the spelling rack

Product: Reader en Francais
Price: $50 (Canadian)
Supplier: NI Software
Telephone: (Canada) 604 721 2919

If you want to learn to read French, then we wouldn't recommend this product. It's aimed at older children (or adults) but even so, we weren't impressed by the software or more importantly, the teaching technique.

Boot up the program and select one of five short stories to read. The French text is then loaded and displayed in a GEM window on the screen. The idea is that you use the mouse to point and click on words you don't understand and the program calls up a French-English dictionary which shows their meaning. The dictionary explanations were very short and often didn't help much in deciphering the text.

Reader en Francais left us cold. It's boring and frustrating to use and we had a great deal of difficulty with the texts. You'd be better off with a traditional French-English dictionary book.

Product: Launch Code, The Real Spelling Game, Caterpillar
Price: £16.99
Supplier: MB Software, 19, Kennion Road, St. George, Bristol BS5 8BZ.

All three packages aim to teach children how to spell and are complied STOS programs, but this doesn't limit their scope or performance. (Unfortunately they were complied using an old version of STOS basic which is not STE compatible). The three programs are very similar, you're presented with a word and it's meaning, and have to collect the right letters to spell it.

The easiest and most playable game is Caterpillar Spell. You're given control of a wheel barrow in which you must pick up letters dropped by a crow. A letter can either be

A whole host of nasties bound around, and your only mode of defence is avoidance. Walk into the yellow blob at the bottom of the screen, and it bites your head off! Pick up the letters as required

dumped in a bin, dropped in a letter hole (to form a word) or grabbed by a spider which swoops down randomly. While this is all going on, a snail slowly crawls towards a cabbage. If you fail to spell the word before the snail gets to the cabbage then your caterpillar dies. A nice touch is that the game speaks out the letters that you drop into the letter holes.

Next comes The Real Spelling Game which

2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2 = 4 2 x 2

STs IN HIGHER EDUCATION

Over the past few years the ST has slowly but surely wormed its way into educational establishments around the country. In areas such as Shropshire and Cleveland, the ST has virtually dominated the education scene and Atari computers can be found in almost every school and college across all disciplines. The ST satisfies perfectly, the Information Technology requirements of the national curriculum.

In Cleveland, the main use of STs is in the music departments of secondary schools. Over the last academic year, a group of 13 schools and colleges have experimented with the use of high quality professional MIDI equipment in music departments. A central County Music Technology facility has also been set up with the help of Roland Music.

In art and design departments, a wide range of art and CAD packages are being used by students including Degas Elite, ZZ Rough, Vidi-ST, Campus CAD, Campus Draft, CAD 3D2 and Cybersculpt. Science departments are using Kuma's K-Scope and K-Spect, and modern language departments are using a variety of word processors such as Script and 1st Word Plus, to translate French and German software manuals into English.

Now that schools are moving towards local management many colleges are using DTP systems consisting of Mega 4 STs, Calamus and a laser printer as their main publishing tool. Work sheets, promotional and publicity material is all created on Atari DTP systems.

is a fairly standard platform game. Even after reading the instructions it wasn't immediately obvious that you could move horizontally onto other screens - necessary to find all the letters.

Launch Code uses the same principle of multiple horizontal screens, but has a space man with a jet pack flying around trying to collect letters which aliens are constantly picking up. There's a launch pad to the right which is where you land after having collected the letters.

None of the games are easy and Launch Code is very difficult. Collecting three letter words was a major feat and as for 10 letter words, forget it! It's also very easy to forget the word you're trying to spell, and some of the word definitions were wrong, too.

It's a good idea to include some sort of

Double trouble! Fend off the spider, but hurry, that snail is getting closer and closer to the important cabbage

The launch pad is visible at the bottom right of the screen. Collect the letters, sending any obtrusive aliens to their maker, then land
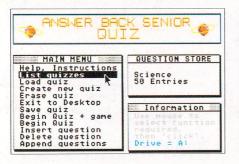
game in an educational package to boost a child's interest in learning, but a balance has to be struck between game and education.

The problem with this program is that all the software is heavily biased towards the former and so lacks educational clout.

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LEFT: The main mouse controlled menu showing all the program's major functions
MIDDLE: There are several styles of question presentation, but the questions always appear slowly
ABOVE: The arcade sequence

Product: Product: Factfile 500 Senior, Factfile 500 Junior, Answerback Junior, Answerback Senior
Price: £9.95, £19.95
Supplier: Kosmos Software
Telephone: 05255 3942

From Kosmos, comes a pair of quiz programs which cover a diverse range of subjects. Each quiz is paired with an extra questions package and one covers the age range 6 to 11 while the other covers 12 to adult.

Documentation is sparse, simply telling you how to load the quizes and look for instructions within the program. There are 15 quizes of 50 questions each on the quiz disks and 20 quizes of 25 ques-

tions on the extension disks. Both quizes are similar, apart from the game section, questions and the background pictures.
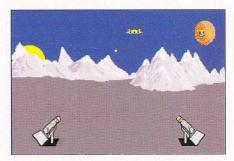
The selection of menu options and quiz files is inconsistent as the program frequently alternates between mouse and keyboard. It doesn't offer a file selector and every time you try a quiz there's a tedious set of questions, such as "Do you want to change the drive path?"

Once you've loaded a quiz, the menu expands to give further options including Save quiz, Begin quiz, Begin quiz with game, Insert or Delete a question, or Append questions.

Selecting Begin quiz, leads to further selections such as the number of questions you'd like to try and what question to start at, and whether you want

them presented serially or randomly. Last but not least, is the format in which questions to be presented are selected. This may be either true or false, multiple choice, complete the answer or a mixture of all three.
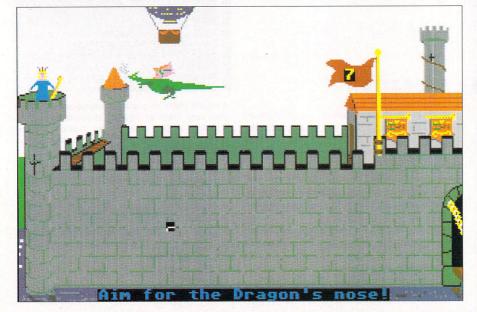
Question presentation could be improved. The letters appear slowly on the screen and are placed by a the wand of a princess in the junior version or a robot's laser in the senior. The novelty wears off after the first few question however and the process becomes very irritating.

Answer correctly and you're greeted with a little game sequence (although this is an option which can be turned off). For the junior quiz a dragon moves across the screen, and you're given a jerky hot air balloon from which to drop three bricks. Hit the dragon on the nose and it falls out of the sky in front of the castle.

The senior quiz game is more entertaining. A UFO crosses the sky and you have to shoot it down using a pair of ground to air lasers. Nicely done, but very brief.

From an educational viewpoint, Answerback is an excellent program. Sound questions test and expand your general knowledge, but the user interface is occasionally poor. The facility to create quizes is a major plus point enabling parents and teachers to build up a library of useful tests for their children and pupils.

LEFT: Flickery sprites accompanied by some truly dreadful sound effects

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ALL ABOUT HARD DRIVES

Two or three years ago your average home computer user would have considered themselves extremely lucky to have access to a 5.25 inch floppy disk drive. Many, many people suffered daily, the tortures inherent in cassette-based storage systems - you know the stuff, the high-pitched squeal of data dribbling oh-so-slowly out of the cassette port into your machine. And even if you were prepared to wait during the excessive loading times, there was still no guarantee that the data would reach your RAM without corruption. Cassette recorders are not made to the same exacting standards required by floppy and hard drives and vary considerably from one brand to another.

With the introduction of powerful 16-bit computers such as the ST, cassette storage became a thing of the past and everyone breathed a sigh of relief. Here's a machine with a built in disk drive capable of storing almost a megabyte of programs and data in relative safety! You'd never had it so good.

Unfortunately, programmers are a lazy lot. Not for them the restrictions imposed by drives offering only 720K of storage space. Applications requiring several megs of storage appeared thick and fast and today, even games software often comes on several floppies. Suddenly, that disk doesn't seem so big after all. And what about those 'disk not responding, cancel, retry' messages that you're always getting? Sit the floppy next to a TV, telephone or monitor and the chances are, it won't work the next time you need it.

Enter the hard drive. Originally available in bulk and at prices only IBM PC and clones owners could afford, the hard drive is at last accessible to the average computer owner-in-the-street. But what is a hard drive? Why is it so fast, able to hold so much and yet only occupies the same space as the average floppy drive?

LIFTING THE LID...

Open the case of a hard drive and you won't see much. Few wires to the outside world, maybe a fan and a lumpy little block of steel which in fact is the hard drive proper. Inside this steel brick lies the true workings of the drive.

Hard drive (singular) is a little misleading, in fact, there is usually several disks or 'platters' as they're known. Each platter is a rigid disk (hence the 'hard' label and not because it can eat *two* Tunnock's Wafers) of alloy coated with 'mylar', a magnetic substance.
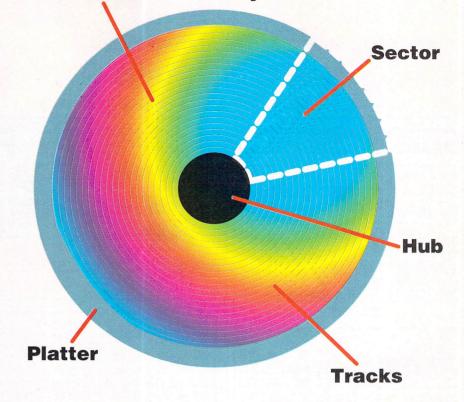
The platters are mounted vertically above one another, rather like a stack of plates. Each surface (two per platter) has an associated read/write head similar to an ordinary floppy. The heads are placed on arms capable of moving in unison in and out of the disk stack.

Rather than filling up tracks when a file is written to the disk, the drive fills up all the available sectors where the heads lie. and accessing a disk like this, results in a disk which fills up in vertical columns of sectors. Put these next to one another and you end up with a structure resembling a cylinder. A cylinder then, is the first track on all the surfaces.

Sounds complicated, but the arrangement is fairly sensible really, as the more the heads have to move around, the slower the whole process becomes.

The casing which houses the platters usually has hundreds of stickers splattered all over it telling you not to think about removing the case Why? Because opening the case lets in air. Platters are kept in a vacuum which is totally dust free, air has all sorts of junk floating around in it. A hard drive's heads don't actually touch the surface of the platters but they are positioned very close to the surface, floating 20 millionth of an inch away from the platter's surface. A human hair is about a 100 times thicker! Even smoke particles would wreak havoc at these tolerances.

Combine these gaps with the enormous speed of the spinning platter (around 3600 revolutions per minute) and it seems almost a miracle that the damn things actually work at all, let alone provide excellent reliability.

If a particle does get in, the result can be nothing short of disaster, as the head encounters the foreign body and crashes spectacularly into the surface of the platter at well over 100mph! And with data packed at such high densities and the speeds involved, even moving or bumping a spinning hard drive can prove fatal. To get around the problem of movement there's a little process known as parking the heads. Parking moves the heads away from the platters, placing them out of harm's way. Most modern hard drives have auto-parking which parks the heads, either when you power down, or after a certain period of inactivity.

Another important factor in ensuring the health of a hard drive is to keep the device well ventilated. A drive with covered ventilation slots may well overheat. Most drives use a fan for ventilation and these are usually the subject of much discussion when buying a hard drive. If the hard drive doesn't have a fan will it be reliable? If it has, how much noise does it make? In noisy places, such as shops and the 'USER offices, a hard drive may seem as quiet as a whisper. But take it to a nice quiet computer room at home, and the noise from the fan will probably be deafening!

And you can't even move the drive to a location far away from your computer desk, the problem being that the ST's DMA port isn't buffered, and will only allow cables of a certain (short) length to be used. Long leads are prone to interference.

Atari have recently changed the DMA chip, and all STEs and Megas will have to be used with cables of less than six inches. If the cable is longer, catastrophic results may ensue - all the files on a partition could be wiped out without warning.

The quality of the cable is important too. Some drives have had 'corner cutting' included free of charge. This has resulted in the odd device having a ribbon cable supplied, rather than a proper shielded round cable!

BREAKING OPEN PIGGY

PC hard drives are very cheap, so why can't you just plug one into your ST? Well the story goes like this. Atari thought they'd impress everyone by modeling their DMA (Direct Memory Access) port on the SCSI (Small Computer Systems Interface, pronounced Scuzzy) design. Unfortunately, Atari's idea of SCSI was a little narrow, so the ST only supports a subset of the full standard.

Nowadays, there are lots of adaptors available enabling you to plug in SCSI drives. These wondrous devices are referred to as SCSI Host Adaptors. But a few years ago, and even now to a degree, SCSI drives were very expensive. An early solution was to hook up an IBM XT (ST506) drive to an XT-to-SCSI interface, and then to attach this to a DMA host adaptor on the ST. But hang on, why not have a simple XT-to-ST DMA interface? Well market forces prevail over common sense. This solution is cheaper than a direct interface and consequently, nobody has ever developed such a device.

Many PC drives are cheap because they're
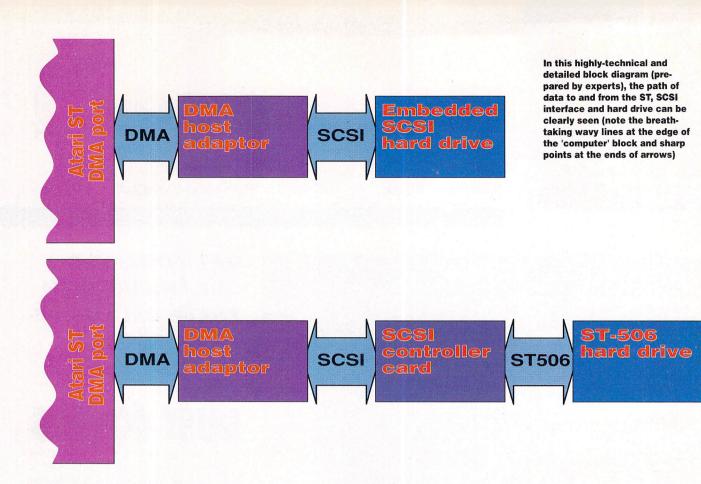
Surface coated with Mylar™

Sector

Hub

Platter

Tracks

In this highly-technical and detailed block diagram (prepared by experts), the path of data to and from the ST, SCSI interface and hard drive can be clearly seen (note the breathtaking wavy lines at the edge of the 'computer' block and sharp points at the ends of arrows)

Atari ST DMA port → **DMA** → **DMA host adaptor** → **SCSI** → **Embedded SCSI hard drive**

Atari ST DMA port → **DMA** → **DMA host adaptor** → **SCSI** → **SCSI controller card** → **ST506** → **ST-506 hard drive**

of the hard card design. The hard card consists of a hard drive stuck onto a bit of controlling circuitry which plugs straight into a PC expansion slot. No need for a power supply, external casing, separate interface or cabling - directly the opposite of ST drives which need all these extra bits and pieces, and therefore cost a lot more. And standard STs don't have a user expansion slot in which to plug the device (the Mega ST does have one slot which will accept a hard drive).

SPEED LIMITS...

Hard drives vary considerably in speed from snail's pace to a cheetah. Three major factors in the quest for speed are the access time, transfer rate and encoding method. The access time refers to the time it would take on average to find a particular sector, usually given in milliseconds (ms). 80ms hard drives are rare, and very slow as far as hard drives go. A speed of around 48 to 24 ms is far more common. The fastest drives are usually 11 ms.

Transfer rate stated in bytes per second is about 400 Kb a second. For example, a hard drive with a slow access time and fast DMA rate will have slow directory updates and seem slow when manipulating several small files, but will load large programs rapidly.

Hard disks which receive a lot of use will not have files in contiguous blocks but scattered around the hard disk wherever space can be found. This situation is known as fragmentation and can cause a hard drive to slow down considerably as the heads jump around the drive to load a file. Fortunately, there are various programs available to reconstruct a hard disk, so that the files are in contiguous order. Encoding methods (the physical method of storing data on the drive) are obscure - even users who own a hard drive may not be aware of which method is employed in their device.

Currently, two methods exist, MFM (Multi Frequency Modulation) and RLL (Run Length Limited). The latter saves space and improves speed.

DO IT YOURSELF!

Those who fancy themselves with a soldering iron can have a go at making there own drive, and this is not as a difficult a process as it sounds. Buy a SCSI host adaptor, a power supply, and a hard drive. Stick the bits together, bung 'em in a box, and Bob's your Aunt's live-in lover, one hard drive!

Unfortunately, life - and hard drive construction - is never that simple. Those who want to save money may be more than a little surprised. Building your own gadgets usually means saving heaps of cash, but not with hard drive construction. By the time you've bought the host adaptor, case, fan, cabling and drive mechanism, all at full 'huge profit on every item' price, building your own could well prove to be a false economy. Buy a complete ready-to-go drive and you'll have one price 'mark-up' of which to bear the brunt.

BUT WHY?

And now perhaps, the most important question, why do you want a hard drive? For the business person, a hard drive is virtually essential. Unless it's a very small (a very very small) business, you're bound to have lots of files on lots of disks, and the convenience of having all your data on one central store, is a major advantage and will provide an immense gain in speed.

Budding programmers spend a lot of time re-loading programming tools after the latest machine code master piece decides to bomb out. Compilers take a long time to do their stuff when reading and writing large files to and from floppy disk and large libraries of sub-routines can take an age to load. With a hard drive these times will be reduced to seconds.

Most games are usually replete with many layers of protection - even adventures and simulators are protected. Not much chance to transfer your games to hard drive, right? But with the recent price drops for hard drives and the justified moaning from owners of copy-protected software, even games houses are starting to produce more and more unprotected software - a perfect chance to run those monster games programs from hard disk.

Just think of how many extra levels you'd be able to cram into that arcade corker, how much extra scenery could be explored at the yoke of your favourite flight simulator and how much more authentic it would be, to explore strange new adventurish worlds with an enormous parser and dictionary on hard disk.

Emulation buffs and especially those with Mac emulators, definitely require a hard drive. Since so much of the Mac's operating system is soft loaded, trying to run a Mac system from floppies is virtually impossible and if you did manage it, the 'Mac' would be next to useless.

And if you do decide to buy, chose your size with care because selling one hard drive and buying another can prove to be very expensive - resale prices are always bad. Think carefully about how much space you need. 20Mb may sound a lot but it's only the equivalent of about 28 floppies.

Hard drives can be had for as little as £300 for a 20Mb but you get what you pay for. Oh, and the last word of course, is to read the quarterly buyer's guides in ST World. No other magazine expends as much effort to bring you the hard facts about hard drives or any of the other important peripherals and software necessary for a working ST system. The ST World hard drive Supertest provides extensive coverage of every device available and gives you authoritative guidance - be sure to search it out. ●

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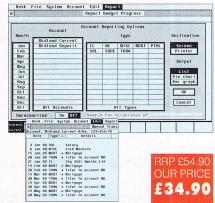
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DICTIONARY PUDDING

Q Please, please, please could you tell me if there is an upgrade or add-on for the Microsoft Write word processing program that adds a spell checker and dictionary and pre-set page formats to this otherwise brilliant program?

The spell checker and dictionary should be straightforward (ie as 1st Word Plus), but the pre-set pages formats should operate so that you can configure different styles of documents such as page set up and tabs for different types of form and then recall the format as a blank page at any time.

If you know of no such upgrade, can you tell me of a program which is the equivalent of 1st Word Plus and Microsoft Write together?

C Neville, Wandsworth, London.

A Microsoft Write and 1st Word Plus combined, huh? There are no upgrade or add-on modules for Microsoft's forgotten program, and although 1st Word provides some of the features you require it is notoriously slow. Probably the best course of action is to continue to use Microsoft Write and to have a rummage in the public domain for a suitable spell checker. There are several of varying quality, but all have the advantage of being completely free! Try all, discard those you don't like.

ST V. AMIGA

Q First, let me apologise for mentioning the name Amiga in your magazine, but I feel it is necessary to convey my feelings of envy towards many of my so-called friends who own one. I myself own a 520STFM and defend any offensive remark

made about it quite whole-heartedly, but I still find it difficult to deny the Amiga's superiority.

After looking through various reviews of the STE however, I decided to teach my friends a lesson in quality computing. As yet, I haven't purchased the computer because I have a few queries that may be useful to me in my work life.

Is Atari planning to release a 2Mb or 4Mb STE and if so, how would it be different from an upgraded presently available STE? Is the STE capable of running Dynnacad with 2Mb and finally, is it capable of running the Cyber series with 1Mb?

P Jones, Stockport, Cheshire.

A Look, let's just stop this 'the ST is better than the Amiga' and vice-versa thing, OK? Why didn't you simply buy an Amiga in the first place if that's what you wanted? The ST, although inferior in several respects to Commodore's baby, is a machine which ahem, brings pleasure to millions. Well, not quite but you get my drift, right? Both have their relative merits, both are excellent machines and for some inexplicable reason, some prospective computer owners plump for one, while many choose the other.

It's unlikely that Atari will bother to release big-memory STEs. Third party RAM upgrades in the form of plug-in SIMMs are cheap, easy to install and readily available. Many suppliers are currently offering the SIMMs, several via the pages of 'USER.

Both Dynnacad and the Cyber series should work perfectly well with the STE, although upgraded versions of the software may be made available

at a later date. Almost all of the software which refuses to work on the STE is games and PD program - those which rely on foibles of the operating system to achieve greater speed, more colour and so on.

DOWNLOAD DILEMMA

Q Could you please help me? I own an Atari 1040STE which I bought in March this year after my original 1040STF went all faulty. I have also bought an Atari Portfolio for which I want to download ASCII files from ST into the Portfolio. Is there any way of doing this? I have bought both the serial and the parallel interfaces, but the manual says that the built-in file transfer software only works through the parallel interface and with IBM computers only.

Is there any way of receiving ASCII files from the ST through the RS232 port on the Portfolio?

D A Lidgbird, Redditch, Worcestershire.

A Unfortunately, even though you have both the serial and parallel interfaces, there's no way to transfer data unless you can get some comms software running on the ST, which will work with that running on the Portfolio. This shouldn't be as difficult as it sounds however, as there's probably just some simple XMODEM trickery going on in order to transfer the data. Try some comms software from the public domain.

DRIVE CONNECTIONS?

Q I own a 5.25 inch disk drive mechanism in which I would like to connect to my Atari 1040STFM, I already have

---

Computer cracking up? Disks doing back flips? Printer out of puff? 'USER's very own silicon service supremo is at your disposal. All points bulletins to Interactive Rescue, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP

...anything can happen in the next half hour...

the power supply unit, I just require the pin connections. I have already built myself a fully functioning second 3.5 inch drive so I'm au fait with the process.

I Powell, Loggerheads, Shropshire.

A If you've already 'built' a 3.5 inch drive then you'll have no problems with a 5.25 inch device. The connections - believe it or not - are exactly the same, in that there's a 34-way connector (IDC rather than DIN) with the same signals as those which appear on a 3.5 inch drive.

Here are the necessary pin-outs (from left to right) pin four head load (actd solenoid), pin six DS4 (drive 4 select), pin eight index (input to FDC), pin 10 DS1 (drive select one), pin 12 DS2 (drive select two), pin 14 DS3 (select three), pin 16 motor on, pin 18 DIRC (step direction), pin 20 step outut, pin 22 write data, pin 24 write gate, pin 26 track 00, pin 28 write protect, pin 30 read data, pin 32 side select, pin 34 ready. Obviously there are slight differences in nomenclature provided by the various drive manufacturers

The only problem you may encounter is one of stepping rates. 5.25 inch drives have read-write heads which step across the floppy disk more slowly than their 3.5 inch counterparts. If you experience data loading problems obtain one of the many public domain programs which step down the rate at which the head moves - the problem will be cured.

SWIFT PRINTING?

Q First of all my compliments to your magazine. As one of the few, you've improved over the years! Keep on doing the things you do, the way you do, and stay that little bit better.

Last month I bought myself a Citizen Swift 24 pin printer. What I would like to know is, if there's a program which will enable me to print out graphic designs and letters or a mixture of both without having to wrestle with my printer or with unnecessary adjustments to my computer.

Could you tell me which program would serve me best and if possible, put me in touch with other users of the Citizen Swift in order to exchange information?

Last of all I would like to meet or write to people experienced with or wanting to learn all about machine code programming. If anybody out there is interested or wants to exchange

programs and information please write to me.

Andy Mollinger, Gerard Krekelbergstraat 13, NL 6063, CJ Vlodrop.

Q You can use any program with your Citizen 24-pin printer if you boot the ST with GDOS and a suitable 24-pin printer driver first. Drivers? Have look in the public domain - there's dozens of 'em!

ON CAMPUS

Q I'm about to enter the second year of a computer science degree. The first year was full of basic (and BASIC) theory, simple programming tuition and so on but now we're about to get the hard stuff. I've got to study the C programming language, compiler writing, operating system theory and horror of horrors, Unix!

I've had a quick peek at this sluggish dinosaur of the OS world and find it utterly incomprehensible. With it's obscure and sometimes ridiculous commands and dreadfully slow 'tools', Unix is a direct link with the thermionic valve past. I keep expecting guys in white coats with pipes gripped between clenched teeth to tend my terminal.

At home, I use an Atari Mega 2 ST and I was wondering if there was some kind of command interface or shell that emulated some of the Unix commands so that I can get to grips with the subject. I realise that this is probably a ludicrous request, the ST being a home computer and Unix an industry-standard operating system, but there's no harm in asking!

Andrew petal, Kingsbridge, Devon.

A Home computer indeed! In fact, there are several very good Unix CLI shells available which don't emulate Unix but provide the 'feel' of Unix on your ST. And of course, there's Minix. What's that? Minix is a multi-tasking operating system which provides almost exactly, the Unix environment. All system calls are the same, most of the GNU software tools and standard Unix tools such as Grep are available, there's a full Kernighan and Ritchie C compiler and what's more, Minix comes with the full source code enabling you to examine, make changes and re-compile the operating system.

The latest version 1.5, provides significant speed and functionality improvements over existing versions, costs just under £100 and is available from the Minix Centre on 0953 89345.

And if you want a corking textbook to go with Minix and also to help explain the general principles behind operating system design, cut along to your nearest high street book store and get a copy of Operating System Design and Implementation by Andrew Tannebaum. This guy is a respected writer on all things computer science (I read him while reading my BSc computer science), whose stuff is simple to assimilate.

MISTAKEN IDENTITY

Q I am writing to you in the hope that you may be able to clarify a very annoying situation for me.

On the 8th April of this year, I wrote a letter to ST World commenting on their article in issue 49 entitled Fixit explaining that I had recently suffered from a power supply failure. The letter I wrote has not been published by that magazine however an identical letter entitled Power Down was published in issue 53 of 'USER from somebody by the name of A Norman (no address supplied). I have included a re-print of my original letter for you to compare the article in question.

While I do not hold you responsible (jolly decent of you - Ed), I am very unhappy about the situation and would be grateful if you could shed some light on how this very annoying irregularity may have occurred.

C S Margrove, Milton Keynes, Bucks.

A Indeed I can. The publishers of ST World, Gollner Publishing, recently formed a new company named Interactive Publishing with the publishers of Atari ST User, Database Publications. Both magazines are published at the Database Publications' Macclesfield offices. Both magazines are placed one next to the other in the office (Dave Stewart, the Editor of ST World sits right next to me) and somehow your letter, addressed to his magazine has become confused with a letter to be published in 'USER 53.

Obviously I can understand your dismay at seeing a jolly useful tip being credited to an entirely different individual not responsible for its discovery, and would like to take this opportunity (with tongue just a little way into my cheek) to thank from the bottom of my heart for sending it. This tip among tips, this shining jewel of computer help has enriched not only my life, but the lives of hundreds of thousands of dedicated ST owners and users around the globe desperate for power supply help. From me, and on behalf of them I say, thank you!

...Look, it was a mistake. Thanks for the tip, keep reading both mags, you're a good guy.

LAME GAME

Q I have recently read the article on Drakkhen in the June issue of 'USER. I am writing to ask if you know of anyone who has had the same problem I am having with the game. On creating the characters on a blank disk, you are asked to

LITTLE SNEAK

I have found a cheat for the game Bloodwych. You can only use this cheat in two-player mode.

When you are being attacked by a monster that you think may be too tough for your team, get the other player to lock their team behind a wooden partition, then you lure the monster behind the partition that your accom-

plice is behind. That player then communicates with the monster through the partition (making sure that they are facing it). They then click on 'communicate and recruit' (this is best done suing an autofire joystick). You then hack the living daylights out of the monster while your accomplice carries on hacking the living

daylights out of the communicate option. This works with Zendik and the Entropy as well as every other creature in the castle.

Take my word for it. The game is impossible to complete without this cheat. If you're still stuck with this game you can 'phone me on 0983 298383. Ask for Glenn.

insert disk one. When this has loaded you are the asked to insert the character disk. When that has loaded and I start to play, the game freezes and I get two bombs appearing on screen. I wonder if this is a fault with the game or with my computer or disk drive. I would be grateful for your advice.

A G Hutton, Jeddah, Saudi Arabia.

A Sounds as though one of the disks is picking up some corrupted information which the computer simply can't act on. This could be because one of the disks is faulty or that your drive head is slightly out of alignment.

To determine whether the latter holds true, pop the drive along (or the computer and drive if it's internal) to a local repair centre if you have one, and have the alignment checked out.

If the drive proves to be OK, then I suggest you return the disks for replacement.

If anyone has had similar problems with their copies of the game and have managed to solve the problem, let me know and I'll pass on the guff...

FEARFUL CAD

Q Could you please recommend an item of computer aided design software for an Atari Mega 2 with hard drive, which will meet the following requirements:

1. engineering/technical drawing (ie first and third angle projections)

2. electronic circuitry and PCB layout

3. be able to create modules for kitchen units and the like, which can then be moved around to enable the best layout to be achieved

4. be able to generate A1 and A2 sized drawings to scale and be capable of output of selected areas of the drawing to an A3 plotter

Why is it that people who advertise in your magazine do not reply when asked questions as above?

C W Philpot, St Annes on Sea, Lancs.

A Sure, I can recommend several packages that will do most, or all, of the things you require but unfortunately you neglected to mention a price ceiling.

Many of the top-flight packages will leave you with little change from £400 or £500 and the less you spend, the less you get! Right, lets get down to recommendations.

Probably one of the best middle-range CAD packages widely available at the moment is Draft from popular programming house GFA. The latest version, 3.0, has just hit the streets and provides such powerful options as macros (a range of commands and functions assigned to a single key or word) and the ability to be programmed in GFA BASIC should you want to get into complex design.

GFA Draft 3.0 isn't cheap at £149.95, but it offers twice the specifications of some packages at around half the price. If 150 clams is a little above what you're prepared to pay, then take a look at GFA Draft ST 1.5. This is not cut-down but an earlier version of the latest Draft 3.0. Obviously without the power of later offerings, it nonetheless provides a comprehensive introduction to drafting on the ST and at £49.95, it won't break the bank.

GFA resides at Box 121, Wokingham, Berkshire RG11 1FA. ●

BIG AUDIO DYNAMITE!

I have a friend (who thinks he may be stout? - Ed) who owns a totally brilliant STE, and is connecting up some speakers to it via the new phono sockets. The resultant sound is mind blowing!

Unfortunately, the STFMs have no real comparison, other than the fact that the monitor has two pins (audio in and out) which may be used as the STE socket, but the leads cost an absolute fortune. So instead, the DIY approach came to mind.

Inside the ST, it is possible to tap into these wires and send them to speakers as well as to the monitor. All the project needs is two phono sockets, a bit of wire and some common sense.
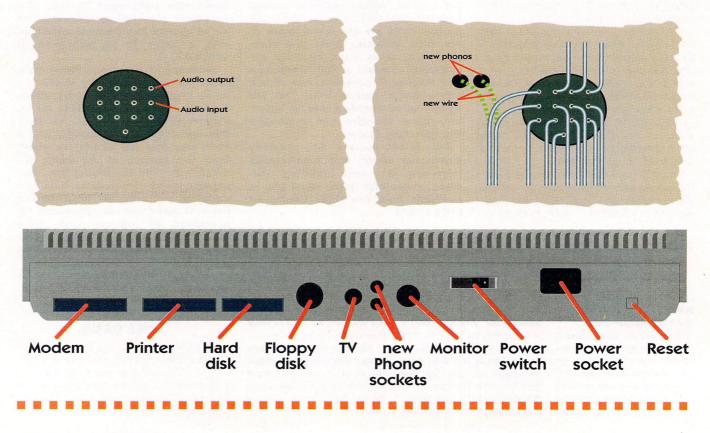
The diagram below shows the position to drill holes to fit the new sockets. After doing this you must go inside the ST and locate the audio in and out wires, with help from the diagram. Split each of these wires three ways, then connect one of the three audio in wires to its correct pin in the monitor port. Connect another audio in wire to one of the

phono sockets and the final wire to the other socket. Do the same with audio out wires, putting them into the unconnected pins left over. Make sure that you insulate as much of these wires as possible.

The resultant phono plugs will most probably need to be sent through an amplifier to get the sound. I have not tried this, but see no reason why it will not work.

B Bell, Colerne, Wilts.

Audio output
Audio input

new phonos
new wire

Modem   Printer   Hard disk   Floppy disk   TV   new Phono sockets   Monitor   Power switch   Power socket   Reset

datafile

The page that points the finger at the companies in the know

DIARY DATES

UK EVENTS

13 to 16 September 1990
European Computer Entertainment Exhibition
Organiser: EMAP (071-404 4844)
Venue: Earl's Court, London

6 to 9 December 1990
Computer Shopper Show
Organiser: Blenheim Database (0625 879970)
Venue: Wembley Exhibition Centre, London

OVERSEAS EVENTS

24 to 26 August 1990
Atari Messe
Organiser: Atari Germany (010 49 61 42 2090)
Venue: Dusseldorf, FRG.

4 to 8 October 1990
Comdex Europe SICOB
Organiser: Media Plus (081-977 3474)
Venue: Paris, France

12 to 16 November 1990
Comdex Fall
Organiser: Media Plus (081-977 3474)
Venue: Las Vegas, Nevada, USA

● If your company is organising a show relevant to the Atari ST and is not listed, let us know so that it can be included in the diary.

ADDRESS BOOK

Arnor
611 Lincoln Road, Peterborough
PE1 3HA.
Tel: 0733 68909
Fax: 0772 561071

Atari UK
Atari House, Railway Terrace,
Slough, Berkshire SL2 5B2.
Tel: 0753 33344
Fax: 0753 822914

CIX
Suite 2, The Sanctuary,
Oakhill Grove, Surbition,
Surrey KT6 6DU.
Tel: 081-390 8446

Digita International
Black Horse House,
Exmouth, Devon
EX8 1JL.
Tel: 0395 2700273
Fax: 0395 268893

Gremlin Graphics Software,
Alpha House,
10 Carver Street,
Sheffield, S1 4FS.
Tel: 0742 753423

Frontier Software
PO Box 113,
Harrogate, N.Yorks,
HG2 0BE
Tel: 0423 567140``

Interactive Publishing
Europa House, Adlington Park,
Adlington,Macclesfield,
Cheshire SK104NP
Tel: 0625 878888
Fax: 0625 879966

HiSoft
The Old School,
Greenfield, Bedford MK45 5DE
Tel: 0525 718181
Fax: 0525 713716

MicroLink
4 Moons Park, Burnt Meadow Road,
Redditch,WorcestershireB989PA.
Tel: 0527 67585, 0527 69459
(sales and marketing)
Fax: 0527 63084

Millennium,
Chancery House,
107 St Pauls Road,
London, N1 2NA.

Tel: 071-548 9897

Power Computing
Power House, 44A Stanley Street,
Bedford MK41 7RW.
Tel: 023 427 3000

Prestel
Dialcom UK, Dialcom House,
Brindley Way, Hemel
Hempstead, Hertfordshire
HP3 9RR.
Service Tel: 0442 237777
Sales Tel: 0800 200700

Rainbird Software
Unit 1, Hampton Road Industrial
Estate, Tetbury,
Gloucestershire GL8 8DA
Tel: 0665 5504326

Third Coast Technologies,
Unit 8 Bradley Hall Ind Est,
Standish, WN6 OXQ.
Tel: 0257 472444

US Gold
Units 2/3 Holford Way,
Holford, Birmingham
B6 7AX

REPAIRS

Ampower Computer Repairs
15a Alcester Road, Studley, Warwickshire
B80 7AG.
Tel: 0527 85 3374

Avon Micro Centre
Unit 4, Western Road Industrial Estate,
Stratford-upon-Avon, Warwickshire CV37 0AH.
Tel: 0789 292269

Ladbroke Computing
33 Ormskirk Road, Preston, Lancashire,
PR1 2QP.
Tel: 0772 203166

Evesham Micros
Unit 9, St Richard's Road,
Evesham, Worcestershire WR11 6XJ.
Tel: 0386 446441

SDL
Unit 10, Ruxley Corner Industrial Estate,
Sidcup Bypass, Sidcup, Kent DA14 5SS.
Tel: 081-300 3399

W.T.S. Electronics
Chaul End Lane, Luton,
Bedfordshire LU4 8EZ.
Tel: 0582 491949

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OF THE

devoted to your very own favourite ST subjects.

ATARI ST

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MIDI AND MUSIC • COMMUNICATIONS • EMULATION • ADVENTURES • DESKTOP PUBLISHING

MIDI SOFTWARE FOR FREE...

If the high price of music and MIDI software is stretching your pocket to the limit and making your bank manager hot under the collar, take a look around the PD scene for useful freebies. In the public domain, you can find a veritable Aladdin's cave of useful and quality software all entirely free!

SOS disk 42 contains two programs - MIDIRat (mono only) and Exerciser. The excellent MIDIRat program draws a simple four by four grid on-screen. You move the mouse around it to transmit note, pitch and velocity information on different MIDI channels. It works fine but the Q key doesn't

quit as the screen says - try Control+C instead.

"Exerciser", says the README file, "runs through a complex test routine designed to check all the MIDI leads and equipment connected to your network." The program runs through all 16 MIDI channels transmitting a random program change, a series of notes in octaves, aftertouch and pitch bend information.

Bessel is on Goodman's Sound Disk 9. It's a boffin's program designed to help convert voices from one FM synth to another, and it carries conversion tables for the CX5, DX7, DX9, DX21, DX27 and DX100 - a pretty comprehensive range, right? Its name comes from the Bessel functions used to calculate the frequency sidebands produced by FM. Phew! Some clever people out there in PD land.

On Sound 21 is a demonstration version (no loading or saving) of an FB-01 controller and a Yamaha FB-01 editor/librarian which works as a Desk accessory. It's American, but the full program only costs $49.95. Looks nice, too.

Using MIDI Rat, mouse movement and button clicks transmit note and velocity data on the MIDI channel of the box the mouse is in

MIDI Exerciser checks what MIDI equipment is currently connected to your computer. It automatically transmits a range of note, velocity, pitch bend, modulation and aftertouch data on MIDI channels 1 to 16 using a range of program numbers

---

Automatic score writing and a host of free software, just some of the goodies in this month's Music and MIDI scene...

Hot on the heels of last month's details about music in MIDI format on disk from Daton Music and Digital Music Archives, comes news that American music software developer Passport has recently acquired the Golden MIDI Music catalogue.

Golden MIDI Music is one of America's leading suppliers of music in MIDI format and titles include material from the rock, jazz and classical repertoire as well as film soundtracks. Passport is distributed in the UK by MCM.

The EEVS-1 is a brand new expander which bridges the gap between analogue and digital synthesis. It's unique in that the package includes software for the ST which enables you to edit the voices. It also sounds ideal for anyone on a budget and is expected to cost around £300. It's being distributed by Sound Technology.

If you're thinking about starting a home studio, make sure you read 'How to Set Up a Home Recording Studio' first. Written by studio owner and technical writer David Mellor, the text contains 116 pages of hints, tips and sound practical advice. It costs £6.95 from PC Publish-

ing.MCMXCIX, 9 Hatton Street, London NW8 9PR. Tel: 071-258 3454. Sound Technology PLC, 15 Letchworth Point, Letchworth, Herts SG6 1ND. Tel: 0462 480800. PC Publishing, 4 Brook Street, Tonbridge, Kent, TN9 2PJ. Tel: 0732 770893.

GET WRITING!
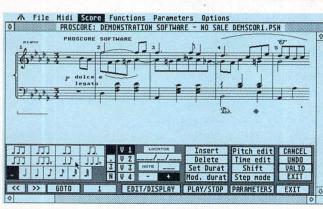
I receive many letters from readers asking about various aspects of making music on the ST. Unfortunately, I can't reply to each one, but I'll answer as many as possible via the column. First out of the bag this month, is a query from W.M. Coombs of Chertsey, Surrey who uses Passport's MasterTracks Pro and asks about compatible score-writers and printers.

I have no hesitation in saying that a combined sequencer/

The Score Edit page in Notator. The piece is the third movement of Mozart's Piano Concerto K491 and miniature staves have been selected to show more of the score

score-writer is the ideal solution. The best is probably C-Lab's Notator (from Sound Technology) although at £499 it's not quite budgetware. Neither is Steinberg's Cubase (£550) which has recently been revamped and upgraded with a complete scorewriting facility added. At

The Score Editing page in ProScore. All functions are accessed by clicking on the icons in the control panel at the foot of the screen

these prices, the programs are strictly for professional muscians and dedicated muso-tinkerers, hobbyists? Forget it!

Coming further down market, ProScore (slightly cheaper at £199.95 but still not for the masses) from Soundbits Software is worth looking at. If you want to print out the music you've recorded in MasterTracks however, you'll need to transfer it to a score-writer using the MIDI file format.

All the above programs support this but your cheapest option is Dr.T's Copyist Apprentice (distributed by MCM) at £79.95 which is a dedicated score-writer without sequencing facilities. To get a pretty score, you have to ensure the music data is neat and a certain amount of tinkering may be necessary.

Most printers are Epson-compatible, a format supported by all score-writers. Most have drivers for individual printers to take advantage of any special

features. Soundbits Software, 48 Galton Tower, Civic Close, Birmingham B1 2NW. ●

JUKE BOX JARGON

MIDI File Format: All sequencers save music data using a file format unique to themselves. This enables them to store any special features such as notepad jottings, 24-character track names and so on. The MIDI file format is a commonly agreed format which saves just the music data, so you can swap files between sequencers and score-writers. It's a useful feature to have, because if you want to upgrade to a better sequencer you can take your music with you.

```
+----------------------------------------------------------------------+
|             Welcome to - The Compulink Information eXchange           |
| +---------------------------------+  Provided by:                     |
| |  XXXXX  XXXXXX  XX    XX         | +-------------------------------+ |
| |  XX  XX  XX  XX  XX  XX          | |                CIX            | |
| |  XX      XX       XXX   Europe's | Suite 2,  The Sanctuary         |
| |  XX      XX        XX    Most    | Oakhill Grove, Surbiton         |
| |  XX  XX  XX  XX  XX  XX Advanced | Surrey KT6 6DU                  |
| | XXXXXXX  XX  XX  XX  XXX  Confer-| Voice: 081 390-8446             |
| |  XXXXX  XXXXXX  XX    XX  encing | |                               | |
| |                          System | +-------------------------------+ |
| 081 390-1244 Tricom Modems with V21 V22 V23 V22bis Level 5 MNP 16 lines|
| 081 399-5252 Tricom Modems with V21 V22 V23 V22bis Level 5 MNP 20 lines|
| 081 390-1255 Courier HST modems with 9600 HST only Level 5 MNP 4 lines |
| If you type "qix" instead of "cix", this screen will not be displayed  |
| Use 8 databits, 1 stop bit and no parity otherwise CIX will not talk to you |
+----------------------------------------------------------------------+
CIX  Version 1.297  21/5/90
You are on line: tty35
Nickname? (Enter 'new' for new user) stuser
Password:
UniTerm © V2.0d Online                                      _D__R__1234
```

Atari ST User on line, archiving and automating the dialling process...

Visitors to the cult on-line system CIX, can now contact Atari ST User represented officially for the first time on the popular electronic messaging service. There's even a conference (a special section in the messaging area) for readers to comment on the magazine, make suggestions, criticisms and contributions.

To enter the conference type 'join stuser' you can then enter the discussions and get involved. Alternatively, you can post email - even binary files - directly to us by mailing the ID 'stuser'.

CIX is a sophisticated multi-user conferencing system which is very popular with computer journalists and software houses, a factor which makes the system very useful for almost any computer user - there's a wealth of knowledge on tap. Although it's PC-orientated, there's a strong

ST and Amiga following, with a number of specific conferences for both machines.

There is a fee to use CIX, but with plenty on offer (especially for the technically-minded) it's justified. Several software houses and manufacturers provide support conferences, including HiSoft, GFA, Precision Software and Atari UK. Other suppliers of ST products on CIX, can be contacted via email and often

WRITE ON!

● If you want to get in touch by modem, you can contact Atari ST User directly on CIX (mail 'stuser'), or MicroLink (MAG031). We welcome news, tips, suggestions and even reader contributions to the column.

respond to comments posted in the regular ST conferences. This helps to make CIX a useful source of help and information - you can often have questions answered in the same session, before you log off.

Other facilities include internal and external electronic mail,

binary file mail, read-only UseNet access, multi-user real-time chat and NewsBytes, the on-line news service. The ST conference carries a file section containing a large selection of PD software to download, with no restrictions.The bad news is that there are no local-access numbers for users outside London. The good news is that it's quite easy to capture all of your unread mail and conference text, ARChive it and download the whole lot in one go. You can then log off and read the text at your leisure. And because you don't have to loiter on-line it's possible to make very economical use of CIX even when dialling from long distances. This helps to keep the dreaded phone bills under control and helps to keep the CIX on-line charges to a reasonable level too.

CIX has been under constant development for a number of years and is a high-tech system with full X, Y and more importantly, ZModem file transfer protocols. You can even use Kermit if you're feeling nostalgic. All data lines support speeds up to 2400bps with MNP5 and there's a special number providing 9600bps HST access.If you're not already on the system, try one of the data lines (081 399 5252) or phone Compulink by voice on 081 390 8446. Registration costs £17.25 (a once-only fee) and on-line charges weigh in at £2.30 per hour off-peak. This compares favourably to most commercial on-line systems, but it is still worth developing those cost-cutting access techniques. ●

ARC NOT FOR WHOM THE BELL TOLLS...

Talk on UseNet and the Forem BBS network has recently questioned the LHarc compression system. This alternative to the familiar ARC format offers a greater compression factor at the expense of crunch time - it's a slow program.

The discussions however, centre around the question of compatibility between the different versions of LHarc currently doing the rounds. There appears to be at least three different .LZH file formats and two known sources of LHarc programs, the most widely used version in Europe being that of John Webb. The Webb LHarc is up to version 0.6, although 0.51 (beta) is more common. The other main LHarc program is up to version 1.13+ and is said to be a 'port' of the PC version. To confuse matters even more, there seems to be no consensus of opinion as to exactly which version works best. Reports show that many users have have trouble unpacking .LZH files from a variety of sources.

Hopefully these problems will be resolved - after all, the more popular .ARC format has been around longer, has seen numerous revisions and implementations, yet causes very few problems. What we need is more cooperation, more documentation and more consistent standards

```
             LZH 0.49 - Mini LZH extractor
            Written by J. Webb & C. van Reek

INSTRUCTIONS: Select the LZH archive to extract. Then select the folder in which
              the extracted files are to be placed.
INFORMATION : Can be obtained from the author: J. Webb, I.N.B. laan 27, 3502 VE
              Utrecht, The Netherlands.
DISCLAIMER  : The author cannot be held responsible for any damages caused by
              the use of this software. He don't guarantee that archives created
              with the PC version of LHarc can be extracted with LZH.
LICENSE     : This program may be copied as long as you don't charge any money
              for it. If you would like to encourage more software like this,
              send a small donation. If you would like the newest version of
              LHarc(!), send Hfl. 20,- (or more) plus a note with your name,
              address and phone number.
PC-VERSION  : This version was developed for MS-DOS by Haruyasu Yoshizaki from
              Japan. The LZH version was re-written in SPA 1.0 and Turbo-C. The
              compression routines were adapted from the LZSS PC sources.
Any key (Press ESC to abort) ...
```

This mini LZH extractor will unpack most LZH files faster then the 'parent' program. One cure for the LHarc blues is to have this handy extractor at the ready. A version of the John Webb LHarc, this program can only extract archived files but it will handle LZH files that full-spec LHarc utilities can't crack. It's also slightly faster that the ordinary ones, and very easy to use too

HANDY DIALER

Fed up with using different comms programs and finding access numbers missing from the dialling directory? What you need is one dialer which holds all of the numbers you need.

```
┌────────────────────────────────────────┐
│                                        │
│        MOBZDIAL dialler V1.0           │
│        (c) MOBZsystems Inc. 1987       │
│                                        │
│ ⇧  Name:              Number:          │
│ 00 CIX Bank 1_____  081 399 5252___  │
│ 01 CIX Bank 2_____  081 390 1244___  │
│ 02 Internet_____  0296 395 935___  │
│ 03 MicroLink_____  0532 424 111___  │
│ 04 MicroMolar_____  081 316 7402___  │
│ 05 My Little Phoney__  0865 773277____  │
│ 06 Sierra on Line___  0101 2096834463  │
│ 07 _____  _____   │
│ 08 _____  _____   │
│ 09 _____  _____   │
│ ⇩  Prefix: ATDT_____  Suffix: %_____   │
│ ┌────┐┌────┐┌────┐┌────┐┌─────┐┌────┐  │
│ │DIAL││SAVE││LOAD││SORT││CLEAR││EXIT│  │
│ └────┘└────┘└────┘└────┘└─────┘└────┘  │
│          written by Markus The         │
└────────────────────────────────────────┘
```

All of your on-line numbers in one handy location

Mobzdial is a PD dialling directory that simply installs as a Desk accessory and initiates a modem dialling sequence using standard Hayes AT commands. Choose the number of the BB you want your modem to dial with a couple of mouse clicks, then exit Mobzdial into the comms package you're currently using so that you can continue the session in terminal mode.

Obviously, the comms program must support Desk accessories, or you won't be able to access the utility. Up to 100 names and numbers can be stored and scroll buttons enable you to browse up and down the list. There is an option to sort the list by name or number, and directories can be loaded and saved if you need more than 100 slots or prefer to group numbers rather than have them in one big list.

Mobzdial is a useful no-frills dialer which has been around for quite a while and which can be found in the download lists of BBs.

THE SOFTWARE CLEARANCE CENTRE

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STOKE-ON-TRENT
TEL: 0782 838557

Access

VISA

MON-SAT 9.30-5.30

MON-SAT 9.30-5.30

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Please note:- Many of our titles are limited quantities as we deal in overstocks and clearance lines! Many thanks to everyone who purchased from us last month.
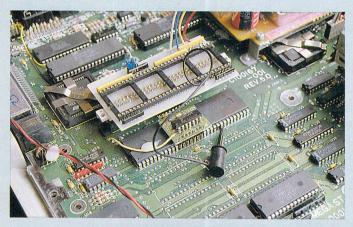
PC-Speed without soldering, the quest for BBC emulation, Spectre upgrades and tricky tips for DOS novices...

Those of us involved in the education system, either as teachers or at the receiving end, are likely to have come across a sturdy slab of 8-bit silicon known as the BBC micro. Many people have sweated over the little beast, writing programs in the respected and well-structured BBC BASIC, and a lot of educational software is available for the machine. No wonder then, that I'm always asked about BBC emulation on the ST.

I remember tinkering with a PD emulator some time ago, but didn't get very far, as my experience of Acorn's machine is strictly limited. Jeff Tullin of Felling, Tyneside has had little joy with a BBC emulator produced by an outfit called BTM-soft, and would like to know if there are any more viable products around. Can anyone help?

SPECTRE: THE LATEST VERSION

There's good news for all fans of Dave Small's Spectre Mac emulator. The device is getting better all the time with the latest update version 2.65. This fixes several minor incompatibility problems (with Word 3 and Multi-Finder) but for me, three major improvements stand out: European models of the Atari laser no longer need to be fed single sheets by hand, sound now works fine with all versions of the Macintosh system (including 6.0.x), and there's a neat little configuration page which can be called up from within Mac mode by pressing the HELP key, enabling you

Balanced precariously on top of the Speed Bridge adapter, PC Speed can now be plugged straight in to a Mega ST

SPEEDING AHEAD

The existence of several rival PC emulators featuring broadly similar specifications and prices for the ST makes ease of installation one of the key considerations in choosing between them. Much depends on your working habits and existing hardware set-up.

SuperCharger has much to commend it as it plugs into the DMA port (and just as easily unplugs again), but the device does require a separate power supply, takes up valuable desk space on your desk top and, given the idiosyncrasies of Atari's DMA port, might cause a few slight problems with daisy-chaining several devices such as hard disks, tape streamers and laser printers.

The new pc-ditto II doesn't take up any desk space, but is rather large and can be extremely

difficult to squeeze into some STs. PC-Speed is undoubtedly the most compact solution, but until recently, users were required to solder an adapter onto the CPU - a little tricky, and not everyone's cup of tea.

For owners of Mega STs, a solution is now available in the shape of Speed Bridge, a little device which plugs into the internal expansion bus and provides a socket for the insertion of the actual PC-Speed board. Power is taken from the spare socket inside the Mega and the only other connection needed is to hook the interrupt line onto one of the 68000 CPU's pins.

From there on in, the emulator is out of sight - although perhaps not quite out of mind as you'll want to remember to use it for running MS-DOS software on your ST!

to change most aspects of Spectre's set-up without rebooting your ST.

Copies of Spectre 2.65 are obtainable for registered users from HiSoft on return of the original master disk. This may also be a good opportunity to set the record straight on HiSoft and Spectre given the recent rumours. While not exclusive UK distributors, HiSoft will continue to sell and support the popular Mac emulator.

Roland Butcher of Haslemere, Surrey, wonders if Apple's much-heralded new System 7 will run

under Spectre emulation. The answer is probably yes, provided you have at least 2Mb of RAM, but there's no way that System 7's virtual memory can work on a common or garden Motorola 68000, as the OS requires a 68030 to be able to treat hard disk space as additional RAM. The new screen vector font technology and improvements to the Finder, however, should be something to look forward to.

ULTRASCRIPT

It's by no means certain that

PostScript files written to disk using the CTRL-K key combination will actually be printed by UltraScript. Exhaustive tests suggest that a lot depends on which version of the LaserPrep and LaserWriter printer driver files are used. The Spectre manual warns that version 5.2 is incompatible, but others are at least erratic.

Version 4.0 appears to be the most reliable overall. And while on this subject, do not use CTRL-F for writing PostScript to disk: UltraScript just doesn't like the resulting files at all!

●

DOS for starters

Not content with crashing his BBC emulator, Jeff Tullin would also like to try his hand at MSDOS but has some questions including wondering what a *.bat* is, how he can actually run a program and where IBM programs can be bought in 3.5 inch format?
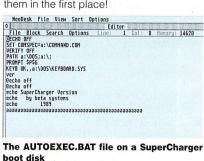
With some encouragement from you readers, I may even start a regular tutorial series on basic MSDOS on this page. Meanwhile, here are the answers to Jeff's questions. *.bat* (short for batch) files usually consist of several commands in a text file to be 'batch processed' one after the other.

Batches are often used to call a major application following some initial set-up procedures, or to automate tediously repetitive chores. The most well-known file of this type is called *autoexec.bat*, and is executed at boot-up, to do things such as setting the search path and opening a directory.

Executable programs have the file-name extenders *.exe* or *.com* and are run by simply typing in their name at the command prompt. The extender can be omitted. Most PC software is now available on 720k, 3.5 inch disks, the standard format used by MSDOS portables. If not, any

good dealer will copy the software to such disks for you - provided you buy it from them in the first place!

```
NeoDesk  File  View  Sort  Options
                          Editor
  File  Block  Search  Options   Line:  1  Col:  0  Memory: 14620
@ECHO OFF
SET COMSPEC=a:\COMMAND.COM
VERIFY OFF
PATH a:\DOS;a:\;
PROMPT $P$G
KEYB UK,,a:\DOS\KEYBOARD.SYS
ver
@echo off
@echo off
echo SuperCharger Version
echo   by beta systems
echo     1989
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
```

The AUTOEXEC.BAT file on a SuperCharger boot disk

IT'S COMPETITION TIME...

I thought that it was about time that I dug deep into my pocket and offered you lot a little competition. The first three correct entries to the following little teaser will win a copy of the forthcoming adventure Loom. Simply study the questions which appear below and using your skill and judgement decide the answers.

● Which famous adventure featured lovable cloven-footed creature The Hobbit?

● Which famous book by J R R Tolkien featured a lovable cloven-footed creature who spawned a popular adventure?

● Which well-known author wrote the book which spawned the fantasy adventure The Hobbit?

Send your entries to: The Faun (real name Phill Armstrong), Atari ST User, Europa House, Adlington Park, Macclesfield, Cheshire, SK10 4NP.

Swashbuckler, Secret Agent, General and Colonist - just who is this Faun guy anyway?

What wonderfully diverse personas we adventurers are privileged to adopt. This month alone I've donned the guise of an intergalactic swashbuckler, a secret agent, a General, a colonist and a blind date's nightmare, and of course I regular visit your house in the guise of The Faun (although my real name is Phil Armstrong, and I live in the murky depths of Tyneside - why aye man!).

Followers of Sierra-on-Line's Leisure Suit Larry series will have no problem identifying the blind date character, although in this episode of Larry Laffer's misadventures, you get two roles for the price of one, as half of the game stars torch singer extraordinaire, Passionate Patti, in her quest to rescue the man of her dreams from the clutches of a band of man-eating (literally) cannibal Amazon women.

You'll have had the opportunity to buckle your swashes by now as the feebly-named Dancis Frake in the Kristal, reviewed in the June issue of 'USER. It's been a long time coming for ST owners, but the graphics are extremely attractive, the use of perspective being particularly impressive. A few hints on getting started are provided in this month's tips section.

Colonisation is the name of the game in SSG's Gold of the Americas, previewed last month. The appearance of the game is fairly simple, however a few hours play brings the hackneyed phrases 'absorbing' and 'addictive' to mind. Not as visually appealing as say, Defender of the Crown, but featuring far better gameplay.

Lack of visual appeal takes on a new meaning after booting Frontline from CCS. The crude graphics are laughable considering the potential of the ST. The gameplay however, is good and the package certainly offers value for money considering that you can make war in any one of six scenarios. The screen display will not entice joystick artists to defect from their usual pastime, so this is strictly for afficionados of the genre (er, those who like to play adventures, I think - Ed).

An intriguing release from Accolade, The Third Courier, may appeal to the aspiring spies among you. Set in Berlin, your mission, should you decide to accept it, is to use as many cliches as possible while you retrieve three vital components of the NATO non-nuclear defence plans. The screen display resembles the Infocom games, with a larger choice of commands available.

The game relies on extensive use of the mouse. You'll discover that two of the couriers carrying separate components have apparently been assassinated by the third, who has since vanished and it's up to you to solve the mystery.

Finally, keep an eye out for Magnetic Scrolls' WoWonderland which should be appearing very soon. If The Pawn was a massive step forward for adventures this is the ultimate.

KHAKI CHAOS

War games are all the rage at the moment, with many of you being completely hooked. As a result I've had lots of enquiries related to these games and how best to approach them. Effective strategies for war games are trickling in, among them some super tips for the amazingly popular Austerlitz from Stuart Hardy of Sheffield, and the hardy perennial Empire courtesy of Spencer Collyer from Rugby.

Stuart mentions that some of his hints are also effective for Waterloo and Borodino as, surprise, surprise, all three were written by Peter Turcan.

Thanks lads, they're now in my ever-growing file, and if anybody out there needs a tip or two in order to get the better of the enemy in any of these games you know who to ask.

Six things that you probably already knew about adventure games...

1. Computer adventure games originated in the early days of mainframe computers when teletype printers were used instead of screens.

2. One of the very first adventure games was called 'Collosal Cave' and versions of this adventure exist for just about every computer format around.

3. Adventure games experts always have beards, smoke pipes and go round calling themselves silly names like: Brillig, Warthog the terrible, The Grue.

4. Probably the most successful adventure house of all time is Infocom, whose range of text-only adventures is unsurpassed in the adventure world!

5. Breath-taking adventurer The Faun is really Phil Armstrong a Geordie from Tyneside...

ADVENTURE ADVICE

42?

Firstly, thanks to Alan Woolgar from Whitburn for services above and beyond the call of duty. Drawn from a plethora of red-hot tips comes this snippet for Ultima V. If you want unlimited items go down one level in Lord British's castle to the bottom left of the Armoury room, and use a magic unlock spell on the three chests. Empty them, go up a level (so that the drive kicks in) then go back down. You can repeat this as often as necessary because the chests are always full!

Next, a rather cryptic message from Aunty Pat of Luton, concerning Future Wars - try taking the documents and walk into the light beam. Should anyone need further advice on this game, write to her, care of this column and I'll forward your letters. I'm fairly certain that my Aunt's never played adventures, Pat. Do you want to adopt a nephew?

Apart from collecting any objects in The Kristal you may come across, communicating with the other characters is the most crucial aspect of the game. Give the beggar charity twice. Ask the small creature's name then say, "What do you do?".

After this, visit the palace and tell the guard you have an invitation. Find Nedrod and ask him four questions. Listen to the King and accept his offer. Upon meeting the Princess, tell her, "It's a secret". Buy the Froodle and Franandas from Sereena at five skringles apiece. Another person worthy of generosity is the Butler. Make sure to take the scroll from the arch to the right of the green door to the transporter room. Now you may head for your ship.

PAGESTREAM EXTRAS FROM SILICA SYSTEMS

Silica Systems' PageStream has a couple of nice extras which not everybody appreciates. Firstly, it can handle a lot of different paper formats. As well as the usual US legal and letter sizes, there are A4 and A5 and a size suitable for business cards.

You can work on up to six documents at once, which is very handy for cutting and pasting text and styles from one document to the next. It's not really practical to have more than a couple of windows on screen at once, though.

The toolbox down the right-hand side of the PageStream screen is unlike toolboxes in other DTPs. This one is a separate GEM window and can be moved around the screen to any place that's convenient. You can rearrange the screen to show full-width working windows and still have the toolbox available by leaving a gap at the top of the screen where the masthead of the toolbox window shows through. You can then overlay document windows or toolbox as appropriate.

The paper sizing window in PageStream offers more options than most
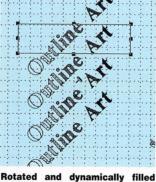
PageStream lets you open up to six documents at once, and move the toolbox to any location

The first in a monthly mini masterclass detailing DTP.

Those who've invested in Calamus or who are thinking of it may well want a DTP-orientated art package to go with it. Outline Art, like its DTP stablemate, comes from the German company DMC and is imported into the UK by Signa Publishing (0252) 341600. Being geared towards Calamus users, it tries to use as much of the same interface as its elder sibling. And like Calamus, it will only run on a mono monitor.

Outline Art is good for a number of different purposes, but the most obvious is the production of logos, letterheads, and stylish flyers or advertisement pages. Once loaded, the screen is filled with a set of 31 icons, covering all the functions of the program. Some of these icons lead to dialogue boxes, but there's little of the hierarchy of icons that can cause confusion in Calamus.
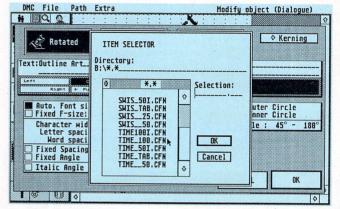
The program is designed to manipulate text and shapes, but the accent is definitely on text. There are three main text functions within the program: rotated text, circular text and free text. Rotated text, as you may guess, enables you to swing text around the central point of its surrounding frame. Circular text enables

Rotated and dynamically filled text are easy to achieve in

The OA calculator offers a lot more than simple arithmetic

The text dialogue governs most aspects of text layout in Outline Art

the bending of characters around the outside or the inside of circles of any diameter. Free text lets you shape text according to a path made up of straight lines or bezier curves.

Outline Art can also handle grey-scales and apply them to graphic shapes or text. You can for instance, apply a graduated tint to a piece of text, and specify the start and finish tint levels to the nearest per cent. You can also specify the bandwidth, which effects how quickly the tint changes across an area.

Perhaps the most versatile aspect of the program is the calculator. This is no four function job, but enables you to set just about any translation to be applied to some or all points of

an object. Several predefined transformations are supplied, including the ability to mirror objects and wrap them round 3D solids, such as cones and spheres.

The characters that you work with come from Calamus fonts. No fonts are supplied with Outline Art, which is a real restriction. The program is intended as a companion to Calamus, but the lack of fonts and translations from other graphic and font formats reduces its potential market tremendously.

It's an excellent program, along the lines of Illustrator on the Macintosh, but to tie it in so strongly to one DTP package means it's hard to recommend. Great if you have Calamus.

SPURNING THE STANDARD

Talking of things Calamus, it's hard to follow the line taken by Signa on the lack of PostScript drivers for the program. The company's main argument is that the drivers developed by DMC for the program are actually more advanced than PostScript and can control a Linotronic photo-typesetter directly.

I have no reason to doubt that Calamus is good with a Linotronic, (it is, I've seen it and it's damn good! - Ed) though I'm sceptical that it's necessary to drive it directly. Admittedly someone setting up an ST-based photo-typesetting system could save money (£5000 plus) on the

PostScript Raster Image Processor (RIP) which would be necessary otherwise. However, most users will be printing through somebody else's bureau (if they can find one to accept Calamus output) and the versatility of PostScript output opens the doors to many more output media.

Signa has its own bureau facilities for Calamus, but how much easier life would be, and how much more popular Calamus would be if DMC allowed for the industry standard as well as offering something better for those who need/want it (the size of the program may become prohibitive though!)

ROLAND REVEALS ALL!

I am writing to express my frustration! In User 48, you reviewed Ghostbusters II and Roland Waddilove said that the built-in cheat mode would be revealed in the next issue - I have yet to see it!

Please could you reveal this as I am going crazy trying to complete the game. Keep up the brilliant work.

L Mayling, Luton, Beds.

Roland has had a slapped wrist and is now confined to reviewing public domain label printers for the next month. What's that? The cheat mode? OK, just for you... As soon as the Activision title/logo screen appears press the control, S, U and alternate keys...

IMPRESSED READER #1

I obtained a copy of your revamped magazine at the Atari show and I am still reading it (so am I - Ed). I feel as a serious ST user that it is a great improvement on the old Atari ST User which I was about to cancel from my newsagent.

Now the niggles. The Freeze Frame! article was good but the graphics needed more care. One picture shows an STE which we are told it will not work with, and in picture five, the arrow pointer was missing. Also the identity of pin one would be better shown by drawing the indent as a mistake could be costly.

My other moan is with the Harlekin review. The reviewer generally gives a good in-depth review, but he complains vaguely of faults that he does not then substantiate. The words "has a number of faults which spoil an otherwise superb package" sounds as if there were loads of faults but the only fault mentioned is the calculator, which to be fair to HiSoft, the different (not for programmers...) method of entering data is explained in the manual.

Also HiSoft in its information sheet clearly say that it needs one megabyte and is available in colour not mono only (I have both the colour and mono versions). The only restriction in colour seems to be that you are limited to the system font. I have found Harlekin to be the best program I have and now have cleared my auto folder on the hard disk as I no longer need the utilities. Harlekin is normally now my only DA.

Sorry about the moans but I had to get them off my chest. They do not distract from the good start on the new mag. It may be that Roland did not have the right information - or was it his new moustache?

Edward G Hunt, Bloxwich, Walsall.

Freeze Frame? Point taken. Slightly more explanatory diagrams would have helped the hardware novice and it's something we'll be looking at carefully in future hardware projects (but wasn't it a corking device?)

As for Harlekin, I feel that Roland's comments are valid, and the obscure reverse polish notational entry system for the calculator will simply confuse rather than help users of the program. Sure, the method is explained in the manual,

mail

Did your letter make it past the shredder's jaws?

but then there are plenty of textbooks detailing quantum mechanics but I wouldn't expect the average maths O level student to be able to get to grips with the subject. The version of the program we had for review does not work on colour systems - we know because we tried (do you know something we don't?) If a colour version is made available then you'll read its review here first (see news item this issue...)

Don't worry about moaning - constructive criticism is always taken in the spirit in which it's intended and if there's any more of it, we'll send the boys 'round, right?

UNPROTECT AND SURVIVE!

Regarding your news piece in 'USER 50 under the title Falcon Grounded. I myself have encountered problems with the disks. I've had three different pieces of software and none of them worked. The fourth copy I received also did not work, but accidentally, I moved the black write-protection tab so you can see through the eye of the disk. Upon booting, the program loaded perfectly with no problems.

Many Atari users may be taking or sending their disks of Falcon back when they encounter these problems, so I hope this simple solution helps those who want to enjoy hours of thrilling flight simulation.

T Clish, Bishop Auckland, Co Durham.
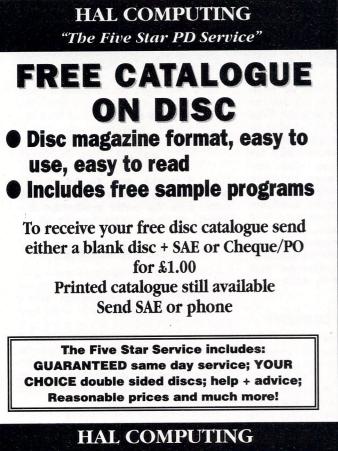
Sure it works, but do be careful when booting master copies of software with the write protection disabled - disks are easily damaged!

CUT-DOWN SAMPLER

I recently decided to purchase sound sampling software for my ST to use in my home-based MIDI studio. Having already used a 12-bit keyboard-based sampler in the past (Akai X7000), I decided to ring a few software shops. Most of the places I 'phoned stocked a good range, but could not give me any technical information, so I got in touch with the software house responsible for the most expensive package, Microdeal (Replay Professional).

The man I spoke to at Microdeal informed me that this was indeed a 12-bit sampler and went on to explain some of its features. I felt that this was exactly what I needed.

I ordered the package straight away and eagerly awaited its arrival. Imagine my disappointment then, when upon opening the box I found that it was not a 12-bit sampler at all, but an 8-bit sampler providing lower sampling quality.

I telephoned the mail order company and explained that this was not what I thought I was getting, but they refused a refund on the grounds that it was not them who had misled me. They suggested that I should have tried it in one of the local software stores before I ordered, but this would mean dragging a lot of equipment about and was not really possible. I then 'phoned Microdeal and was told by them that they couldn't do anything about it because they hadn't sold it to me.

I now appear to be stuck with a package which I am unlikely to use because I was misinformed as to exactly what I was getting. I would like to offer advice to prospective buyers: Do not buy unless you are sure of what you're getting, and if you have to buy something which you can't try out, try and find a shop which will refund.

Stuart Dow, Rotherham, South Yorks.

Ah, the problems of over-zealous sales-persons promising you the Earth in order to clinch interest in their product. The mail order company didn't misinform you and so can't be expected to refund your cash, and Microdeal didn't actually sell you the product and so technically, that company isn't responsible either. In the interests of good customer relations however, I would expect Microdeal to offer recompense to redress this unfortunate episode - Microdeal did provide incorrect information after all.

In the meantime, if there's any bit of music-ish software that would help to cheer you up, get in touch and we'll see what we can do, OK?

BIG DEAL!

I thought that after the bad publicity some software companies have had of late with software quality and prices, you might be interested in an incident that occurred a few days ago (you bought a game which didn't work and when you complained, the company made you managing director and gave you a house, speed boat and fast car. Am I right? - Ed).

While perusing my local computer store I found a copy of Populous which I had previously been told by the same store would not work on my machine because the disk drive was too slow. I took a chance and bought it. After leaving the shop however, I discovered that the main manual was missing so I took it back to the shop, and they informed me that that was their last copy. I could take it as it was or they would refund my money. I took it, on the assurance that it was playable without the manual.

I played it for several days but was very frustrated because this superb game was not playable without my understanding the icons. In desperation, I wrote to Electronic Arts sending my warranty card as proof of purchase and to my delight, only two days later

the manual had arrived with their compliments.

The moral of this story is that not all computer companies are bad apples. Companies like this do exist and I would happily (sell my first child into slavery? - Ed) pay £25 for games like Populous and day, with the customer support EA offer. Well done Electronic Arts.

M Padwick, Worthing, Sussex.

Why is this such a big deal? Sure, it was very nice of EA to send you a manual - they're good guys, that's why they're still around - but I think the days of the dodgy one-nighters are over and the biggies are here to stay - or do you know differently?

DISK DISAPPOINTMENT!

I am sending this letter to tell you how very disappointed I am with my first ever purchase of Atari ST User. I bought the magazine yesterday from my local newsagent (who doesn't approve of customers reading the magazines before buying), but when I got it home and sat down to read it, I found that the programs I bought the magazine for, were on side two, meaning that I could not use them (I have a single sided disk drive).

Will you please explain to me why this was not stated with the appealing game pictures on the cover? I am probably not the only one who has bought it eager to try the games only to find they cannot use it.

D Woodcock, Leamington Spa.

An unfortunate omission, but take heart D Woodcock, the caring editorial staff at Atari ST User (ie us!) have introduced our Side Two Service for the delectation of the single sided drive-owning public. Bung £1.50 (to cover admin costs, boozing, and the all-important postage and packing charges) into the post and you'll receive all of the software from side two on a single sided, easy to read and use, floppy. Well Woodcock, whaddaya waiting for?

WHY OH WHY?

I am writing to complain about the appearance, or lack of it of ST World, which according to certain newsagents, should have appeared on April 25th. The magazine has not appeared, why is this?

I was going to subscribe, but the lack of magazine leads me to (split infinitives? - Ed) not being able to get a copy when I expect it to be there. Is this due to the linking with Atari ST User? Have you read the atrocious Atari ST User? The answer to the first I leave with you. However I have read Atari ST User and find it the most superficial and amateurish publication yet. The article on printers for example, just told you there were several types of printers of differing qualities and prices.

You have ruined the month of May for me. The May edition had better be worth waiting for, otherwise I will not be buying your magazine again.

May I also say that the April issue of ST

World (three weeks late) was the worst edition of the magazine ever produced. It was boring. Not at all like the usual high quality magazine I have come to expect.

Stuart D Threlfall, Midlothian.

Well, you're a pleasant guy aren't you? 'USER's atrocious, ST World is boring and you're never going to read either again. What *are* you going to read? Actually, I may have an old copy of the Beano which should match your level of literacy.

ST World is now a quarterly publication, the first edition of which will appear in July. It was decided that to smooth the transitional period between the magazine becoming quarterly, the publication date of the final monthly issue should be held over a little. In that way, dedicated ST World readers wouldn't have too long to wait before receiving their favourite read.

Atari ST User has been completely revamped, re-designed and relaunched. The quality of illustration and editorial is now setting, rather than following trends. Many, many readers have stuck with the magazine through thick and thin and to those people we say thank you. Stay with us, the relaunched mag will give you plenty to get excited about.

COVER DISK COMPATIBILITY

I have recently bought an Atari 520 STE and regularly buy your magazine which I enjoy a great deal. There is however, one fault with it, in that your cover disk programs are not always STE compatible. June's cover disk for example, contained a demo of Damocles which bombed out when the space craft started to load.

Also Domain on the May cover disk would not work at all. Please can it be possible for all programs on the cover disk to be STE compatible in future?

R M Underwood, Kendal, Cumbria.
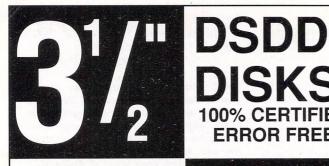
Absolutely! The User office is now equipped with at least one example of every machine marketed by Atari including the STE, and all software candidates for the cover disk are tried with each machine before being included. Whether you're computing on a single-sided 520ST, Mega or STE, the programs will work.

MORE GROVELLING

Having been a regular reader of ST World for over three years, it was due to the promise of a great new monthly magazine in the form of the new-look Atari ST User that I looked forward to the purchase of the July 1990 issue of that publication, due to hit the newsstands on June 7th. However, a week passed beyond that day before I could get my hands on my long-awaited copy, despite daily visits to a considerable number of outlets.

At last! Money changed hands and I left with my copy and I must admit to having been very impressed.

David Green, Tadley, Hants.●

ADVERTISERS INDEX

THE KENNEL CLUB

This dreadful piece of program design was one of the first products to be released onto the UK market. Way back in the mists of time (circa 1985), Desk Diary emerged and was no doubt snapped up by software hungry ST owners.

The program was supposed to be a diary-cum-time manager, with a little address book database built in. There was a calendar display, year, month and day displays. The 'day' mode was divided into half hour intervals, you could tick a time to remind yourself of an event and a 'meetings' flag enabled meeting details to be typed into another dialog box - you could even pull a name out of the address book, so there was a certain degree of integration between the database and diary sections.

Beyond these features however, Desk Diary offered little else. And the scant facilities provided were poorly presented on-screen. Dialogs and display boxes looked like a learner's first crack at a resource editor and

Desk Diary tagging meeting information to diary entries

the prompts and alerts lacked consistency with very few 'press return' default buttons.

To be fair to the programmer, he would've been working with some poor software development tools. But it's not just that the program lacked important features such as the ability to print, but that its use of GEM was messy, confusing, and in some places down right annoying.

Menus were arranged illogically with the file menu on the right hand side, and option names were just as misleading too. More oddities arise as data was entered. Imagine for example,

The Database facility - a basic address book - is more crude than the annual top-shelf mag

the frustration of being locked into a cycle of prompts 'enter date' then 'date not valid, retry' - you couldn't get the damn thing to recognise any date and there was no cancel or exit button.

INSIDE TRADER

Atari UK knocked for six - just to prove that the folks over at Atari UK are nice friendly people, a recent football match took place between the UK subsidiary and Atari France. The French Atarians had the advantage of playing on home ground, while the UK team had the advantage of getting away from Slough for a day. Regardless of being equal in morale, Atari UK was thrashed to a miserable defeat - six, nil according to Trader's sports correspondent. A poor result, despite the mid-game punch the responsibility which nobody would own up to. Trader leaves the most curious twist 'till last. Atari UK's Product Development Manager Rob Katz, was recently spotted with a heavily bandaged hand - and the reason? A bad fall after a heavy tackle in the UK/France 'friendly' footie match. Trader gives Katz the benefit of the doubt and - just about - accepts this as a reasonable explanation...

Compunet goes to ground - just as Trader was about to brandish his modem, news came through of an unfortunate change of status for the popular on-line system Compunet - famous for its user friendly graphical front-end and club-like feel. Sadly there were several unpopular aspects to the system too, including erratic access at slow transfer speeds and reliance upon C 64 derived graphics.

Observers say that the system has recently been operating from Compunet MD's basement, with limited direct-dial access only...

New Desktop for ST - rumours abound about the likelihood of the ST's operating system getting a new and much improved Desktop.

After nearly five years of existence, the Desktop has barely changed despite hundreds of worthwhile enhancements which could easily be incorporated.

The hottest tip of the month suggests that Gribnif, creators of the highly successful NeoDesk 2 replacement Desktop, will be co-operating with Atari to build a new Desktop which incorporates many of NeoDesk's indispensable functions.

Trader has been informed by his technical adviser that the STE firmware has more space for greater operating system code, so there's no excuse for not making some big improvements to the ST's elderly Desktop.

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Frame Fiend

After a massive response to last month's word search, only one of you found an eight letter word not listed. T Willimot (London) suggested the word was, wait for it, 'buttocks'! An outrage T Willimot - the word was in fact 'joystick' (bottom line, third letter in from the right, spelled backwards).

Too bad Willimot., T, but for having the effrontery to mail us a postcard with the buttocks on it, well send you a some small computerish trinket...

DICKY DESKTOPS!

This month's desperately dodgy desktop contribution comes from Crispen Clark. The greedy little beggar has a Mega ST yet is quite willing to admit that he plays games too! Note the cute girlie photo and Newton's balls behind - Crispen tells us that when he's waiting for a game to load from floppy, he likes to have something to tinker with. Other computing pastimes include word processing and even a bit of DTP! Make your ST famous by getting it into print in 'USER. Just send us a snap (don't worry if it's taken with Aunty Madge's box brownie and a wee bit rough) of your ST in its natural environment,

by lines

"Some other manufacturer is shouting about CD-ROM and Multimedia. We don't think there's a market yet."
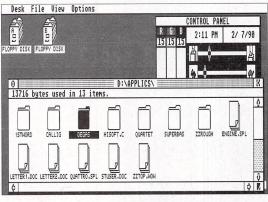
Peter Walker, PR spokesman, wearing his Atari (baseball...) cap.

Atari were first on the scene with a low-cost CD-ROM drive, but Commodore is likely to be the first to try getting the concept into as many homes, businesses and schools as it can.

Spot the mouse pointer

You've heard of 'spot the ball', now 'USER proudly presents 'Spot the mouse pointer' and it couldn't be easier. All you have to do is guess - er, estimate - where the mouse pointer was before being cunningly removed by our inscrutable production staff (it took them all afternoon) by marking an 'X' on the screenshot using a ball-point pen. Cut out the screen-shot and send it to the Closebox address shown at the top of this page (and if you don't want to trash your mag, photocopy it!)

The reader who's 'X' comes closest will receive lots of fame, very little fortune, and will definitely not win a Mercedes 500SL. Oh, and to give you an even greater chance of winning, we'll let you have three attempts - so get X-ing!

No More 'Out Of Memory' Headaches

With Frontier Software's XTRA-RAM, you can do away with those nasty 'Out Of Memory' messages which seem to come up just when you are in a hurry to finish your latest creation - whether it's a page of desktop published brilliance, a piece of superb artwork or a spreadsheet which contains all of the information which your bank manager has been demanding since last week.

• No Need To Send Your ST Away

Upgrading the RAM memory of your Atari ST (whether it's a 520ST, 520STM, 520STFM, 1040STF, 1040STFM, Mega 1ST or Mega 2ST) usually means sending your ST away or doing a large amount of delicate nerve-racking soldering yourself. Frontier's XTRA-RAM is installed by you, in your own home or office *without* the need for any soldering whatsoever (The XTRA-RAM even fits STs with surface-mounted MMU°° or RAM chips)

• Easy To Install - No Soldering

The installation process takes around an hour (the XTRA-RAM simply plugs into two places inside your ST) and is carefully explained in a detailed 32 page manual which is written with the non-technical ST user in mind. If you have any problems during the installation process, Frontier's technical staff are always available on the phone to offer assistance.
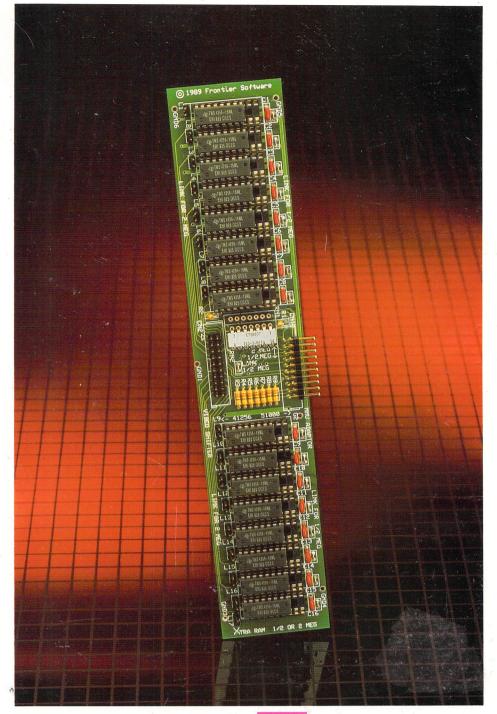
• No Need To Stop At 1MB

Most RAM upgrades leave you with your $1/_2$MB ST upgraded to 1MB and that's it! If you need any extra memory at a later date you are expected to go out and buy a Mega ST - Not so with the XTRA-RAM. The XTRA-RAM has been designed to take two sizes of industry-standard RAM memory chips. With sixteen 256Kbit RAM chips the XTRA-RAM will upgrade your $1/_2$MB Atari ST to 1MB, making it totally memory compatible with the 1040ST and Mega 1ST. When you decide that you need more memory you can change those sixteen RAM chips for sixteen 1Megabit chips (again with no soldering whatsoever) in around ten minutes and your ST will be expanded to $2^1/_2$MB (520ST, 520STM, 520STFM, 1040STF, 1040STFM and Mega 1ST will be expanded to $2^1/_2$MB, Mega 2ST will be expanded to 4MB).

• Totally Compatible

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

• Software Included

Every XTRA-RAM upgrade is supplied with a free RAM testing program (so that you know *with certainty* that your installation has worked), RAM disk and printer spooler software.

• Satisfaction Guaranteed

The XTRA-RAM is supplied under Frontier's ten day money back guarantee, which means that if you don't like the XTRA-RAM, for any reason, you can return it for a full refund within ten days of purchase. The XTRA-RAM also carries a full twelve months' guarantee.

• Available With Or Without RAM Chips

Frontier supply the XTRA-RAM in three ways:
(1) Unpopulated (with no RAM memory chips, so that you can purchase your own),
(2) Populated with 16 256Kbit RAM chips (taking <u>any</u> $1/_2$MB ST to 1MB. This, of course, can take your ST to $2^1/_2$MB whenever you wish simply by changing to 1Megabit RAM chips)
(3) Populated with 16 1Megabit RAM chips (to take <u>any</u> keyboard ST or Mega 1ST to $2^1/_2$MB or <u>any</u> Mega 2ST to 4MB).

°°The XTRA-RAM must be fitted to STs with surface-mounted MMU chips by Frontier Software. You can fit the XTRA-RAM to STs with surface mounted RAM chips with no soldering as long as the MMU and Video Shifter chips are in sockets. Call Frontier for more details.