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ATARI ST USER

OCTOBER 1990 • ISSUE 56 • £2.95

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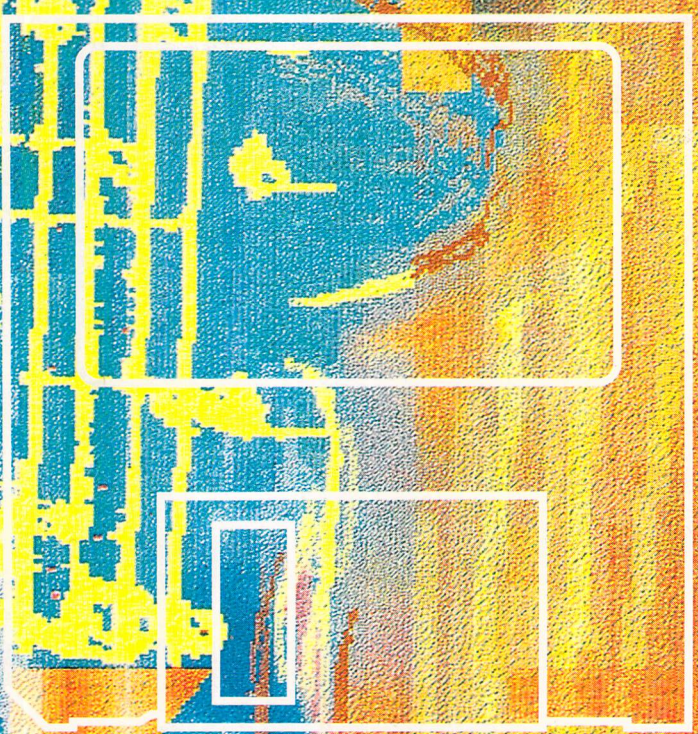

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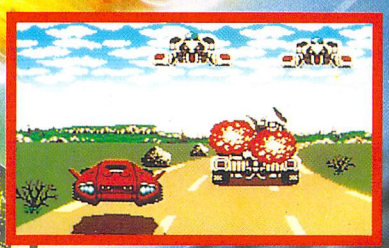

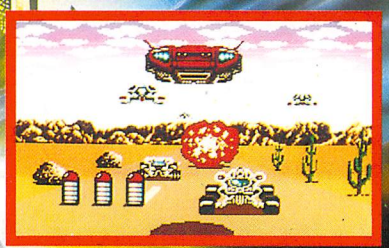

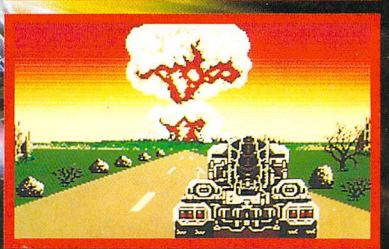

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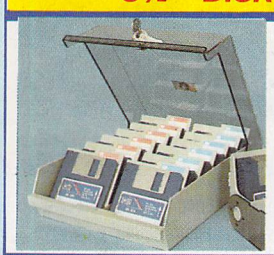

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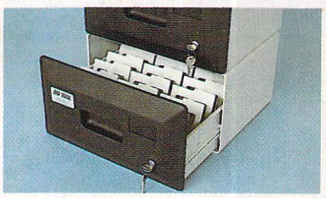

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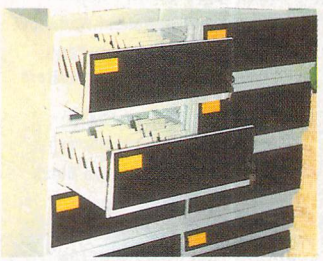

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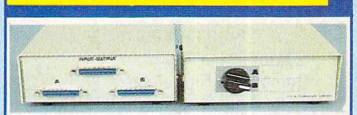

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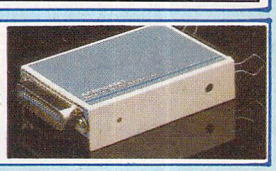

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Angela (I really *need* chocolate) Neal

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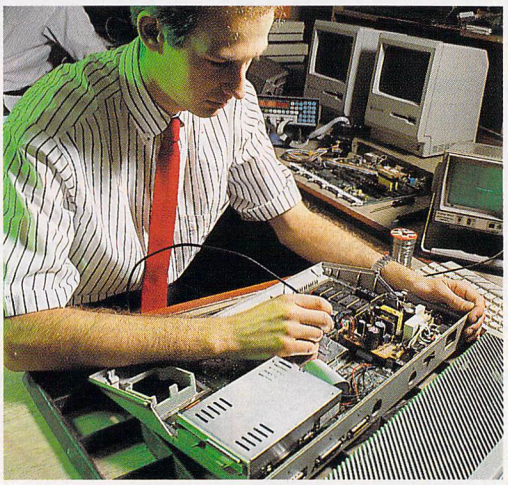
While every care is taken to ensure the printed material is accurate, we cannot accept responsibility for the decline in the iguana population in South Wales.

FEATURES



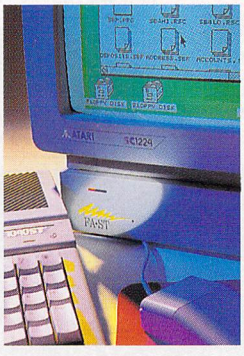
CHILL OUT!.....17

I remember the good ole days when we all used t'sit round piano in t'parlour... now I don't know 'ow our Kevin makes all that noise with that new fangled computer of 'is

OH NO IT'S BROKEN!.....73

If your ST is sick, have you got what it takes to turn your kitchen into a hospital and play doctors and nurses? If not, worry not, we know a man who can...

REVIEWS



ATONCE.....91

An emulator which certainly lives up to its name for those who want to take their work home

HYPERPAINT.....102

Paintbrushes? Forget it! Make your artistic statement with Atari's new art package

FASTCOMM.....102

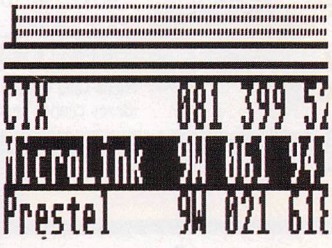
Comms for the uninitiated. Roland makes friends with the previously hostile world of communications

FUN SCHOOL.....69

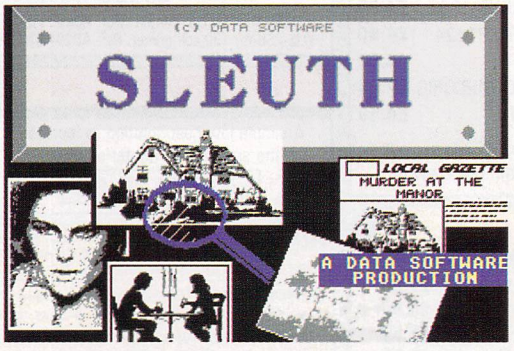
School isn't what it used to be. Gone are the cane and spam fritters...now there are fun to learn educational packages...

FA.ST HARD DISK DRIVE.....71

One for the serious user, a hard drive not for the faint-hearted



USERDISK October...25



STREWTH! IT'S SLEUTH - THE COMPUTERISED CLUEDO GAME

STUMPED FOR SOMETHING TO DO? TRY THIS CRICKET SIMULATION

REGULARS

NEWS **7**

Once again Dave Stewart is the man at the forefront of the action, braving all to bring you the 'hot' info on what's happening, what's going to happen or what should be happening in the world of computers

WORLD SCENE **13**

The world is a really big place containing lots of computers, but don't despair, we've got all you'll want to know, and more, complete with flags. Also back due to popular demand - Harvey Leiberwitz bringing all the gossip on the rest of the family along with childhood photos

PLAYTEST **33**

Sun, sand and Passionate Patti - and that's only the first page of Playtest. This is followed by games, games and more games - your idea of paradise right?

ART-WORK! **80**

Full steam ahead - guess what picture is being drawn in art-work this month

PUBLIC SECTOR **83**

Just back from a modelling assignment John Butters heads for the stars

MASTERCLASS **95**

Music mania has really hit 'USER this month, even the Ed has got his ukulele out. You too can learn to strum a real mean tune

INTERACTIVE RESCUE **105**

Silicon Service Supremo? Either he's a phoney or he's lost his red cape.

ALL ABOUT **113**

Ever wondered what a database was? Don't worry you 're not alone, the Ed had the same problem (until he read this feature that is...)

MAIL **131**

If your letter has made it past the shredder you'll probably wish it hadn't. What will be the Ed's answer? What does it mean? (if anything!) Where's the best place to hide?.. All this and more in mail

ASPECTS

Feeling down? Let Dr. Tiricc liven you up in **Music and MIDI**...hackers beware, you may need help from PLAS in **Communications**...Throw away your wires, we've got the secret of Mac to ST transfers in **Emulation**... Don your wetsuits for the welcome return of Fish! in **Adventures**.Save the clams on page lay-out, read **Desktop Publishing**.

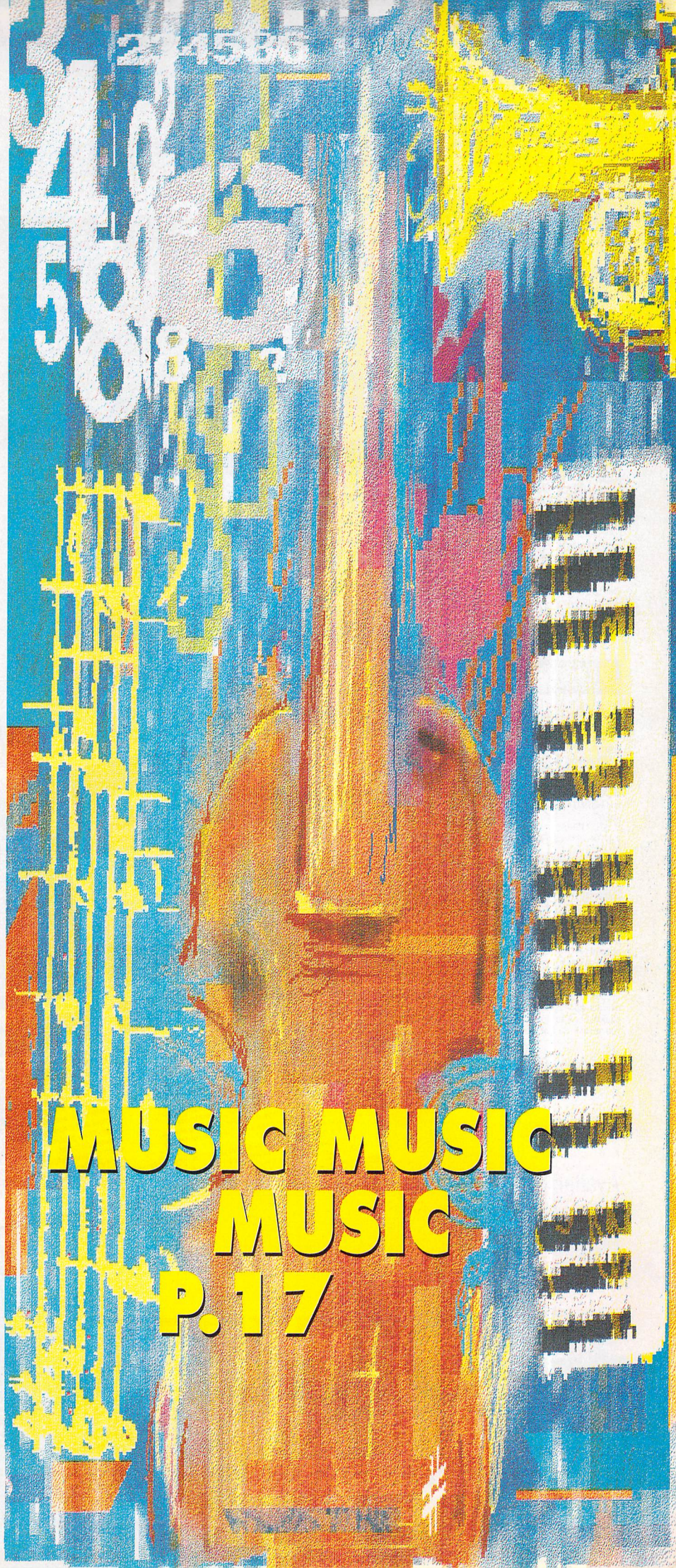
MIDI AND MUSIC..... **121**

COMMUNICATIONS..... **123**

EMULATION **125**

ADVENTURES **127**

DESKTOP PUBLISHING **129**



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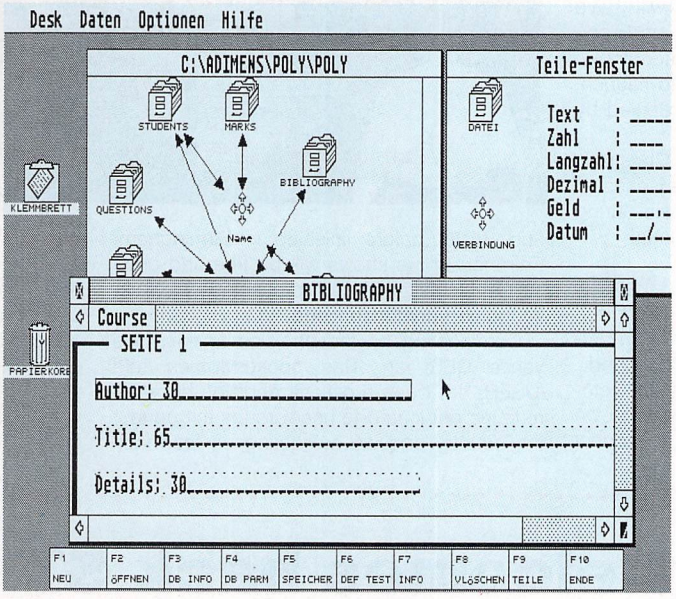
GERMAN DATABASE HITS UK MARKET

The Adimens relational database package uses a highly graphical approach to data links. The UK version will be fully Anglicised. Business software specialist Kuma, has scooped a deal with ADI Software of Germany for the company's powerful relational database package, Adimens 3.0. Both Atari UK and Signa Publishing are known to have been looking at the product, which has been up for grabs for well over a year.

Few databases are fully relational – meaning that they are able to call up records in one file, based upon links from another – without the user having to join or merge two files together. The programs which do claim to be relational are often difficult to use and require a certain degree of programming – unavoidable considering their complexity.

Even though its main competitor Superbase Professional is a superbly easy package to use, Adimens claims to make relational databases even easier to get along with. This it does by using a simple point, drag, and click system, with icons representing data sets and arrows showing file links, on screen.

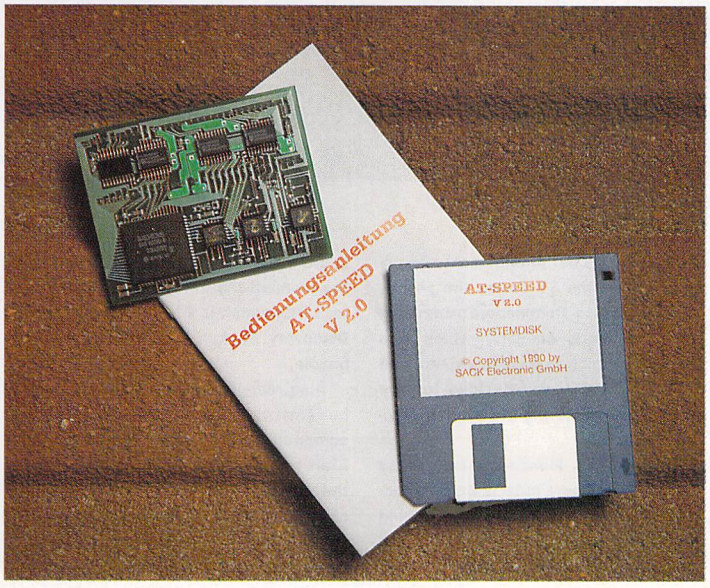


Adimens is extremely popular in Germany and there are an estimated 35,000 users of Adimens ST throughout the world. There's also a dBASE-like programming language available called ADItalk, although Kuma is unlikely to release this alongside the main database package. Expect to see Adimens 3.0 available by the beginning of October priced of £129.95. For more details and specifications, contact Kuma on 0734 844 335.

Budget PC Speed

The V30-based PC Speed emulator is now half its initial launch price.The swift arrival of the AT Speed 286 PC emulator has had the interesting side effect of knocking down the price of the original V30-based XT emulator to less than half the original launch price of less than a year ago.

The new AT Speed retails at £239.95, and the original PC Speed (60,000 units sold, and still going strong) has now been reduced to a very reasonable £179.95. The Speed Bridge Mega ST adapter has also been reduced, and is now £29.95. Finally, PC Speed STE is reduced to £199.95. Place your order with Gasteiner on 081365 1151.



Software prices snipped

Microsnips (051 630 3013) the Merseyside-based software and hardware supplier, has recently started a Microsnips Club to give its customers generous discounts and bonuses.

Members of the free club will benefit from a discount of 10 per cent on the RRP of all software and hardware bought. In addition, all orders worth more than £10 will get the customer a free blank disk.

For many months 'USER has been questioning the high prices charged by many software houses. The Microsnips club will be a step in the right direction in getting more reasonable prices.

Atari launches 'official' HD backup

Until recently, you could buy an Atari hard disk drive, fill it up with valuable data and have no 'official' utility with which to back up the data in case of failure. There are several hard drive back and restore utilities available in the public domain, but it's a brave user who trusts hard-won data bytes to any of them. One, Vault, is rated by all those who have used it, but the rest are generally regarded with some suspicion.

This leaves the commercial utility market, but all you'll find is Flash Back, and that seems to have slipped out of sight in recent years.

So it's down to Atari themselves to provide an approved way of backing up your data. Atari Archive promises to be the most solid and reliable back-up/restore utility you can buy. It's a fairly simple program that uses efficient compression routines so that the once necessary 40 floppies for 30Mb of data, is reduced to around half that figure.

Atari-Archive also uses the TOS 'archive bit' which is an extra piece of information tagged to each file. This bit is set to indicate if a file is new or has been changed. The backup program can then search for any changed files and only store those in the back-up archive. Because many bulky programs don't change, you'll find that most of your new or changed data will fit on a small handful of floppies.

Atari Archive should be available by the time you read this. You can get more information from Atari UK on, 0753 33344.

ATARI ON TOUR

As final preparations got underway for September's European Computer Entertainment Show to be held at Earl's Court, London, Atari made the shock announcement that it will not be attending.

Atari has had a strong presence at the show's predecessor the PC Show, but this year the company has decided against such a show, although all the company's major competitors including Amstrad, Commodore, Nintendo and Sega have confirmed they'll be attending the CES.

Show organiser Gary Williams said, "Every person involved in the industry will be there with the exception of Atari. We think Atari is making a mistake, its absence just doesn't make sense." Many companies will have product launches at the show and one rumour as to why Atari won't be attending is that the company has nothing to launch, although that has been vigorously denied by Atari.

Atari owners will get a show this Christmas though. Atari is planning to run a series of smaller shows on a nationwide basis during the run up to Christmas, with local user groups playing an important role.

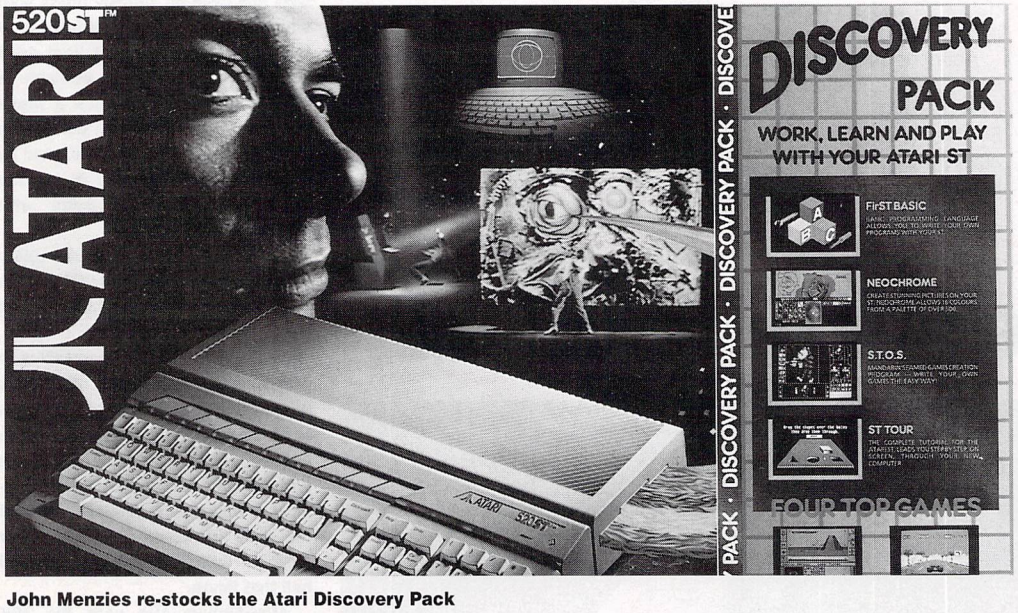
The manufacturer intends to hold the one-day shows during mid-October and the National Tour will visit cities in the North and South of England, as well as one in Scotland.

Atari plans to start its tour on the 19th October in Edinburgh and will then move down the country to Newcastle, Leeds, Liverpool and Bristol before finishing in Birmingham. Entrance to the shows will be free and once inside the visitor will find presentations, workshops and demonstrations.

Commenting on the decision to miss this year's CES, an Atari spokeswomen told 'USER, "It's been a difficult decision but Atari remains dedicated to user groups throughout the country and we are acting on feedback from June's Atari '90s show. By having the National Tour, users in Scotland will not be left out in the same way as they would with one London show".

Despite Atari's absence at this years' CES, Gary Williams promises that all the major software publishers will be present, making it a worthwhile day out for ST games players looking for some new action..

Menzies welcomes back ST



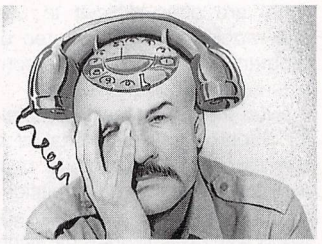
John Menzies re-stocks the Atari Discovery Pack

Just three months after its decision to drop the ST in favour of the Commodore Amiga, chain store John Menzies has experienced a change of heart, axing the Amiga and refilling its shelves with the Atari machine. The move is due to be completed by the last two weeks of September 1990 – in time for the Christmas spending spree – and present plans are to have the Discovery Pack knocked out at no less than 50 shops nationwide.

Last Christmas both machines were sold side-by-side. Amigas sold slightly better than the ST during the period, due in part to Commodore's bundling of the Batman gadgetry which was then riding high in popular esteem and as a result, Menzies decided to stop selling the ST during the slacker summer months.

Marc Gould, Menzies' merchandise manager for home entertainment products, said that the company is aiming the computers at first-time buyers and so needed to sell the cheapest 16-bit micro – the ST was that machine. At the moment the cheapest Amiga sells for £399, which is £100 more than the Discovery Pack, Atari's cheapest ST bundle.

Also reappearing in 122 stores will be Amstrad's Spectrum, which was scrapped at the same time as the Atari model. A range of software for the ST has been sold at 65 of the chain's stores throughout the summer months and there are no planned changes in that area.

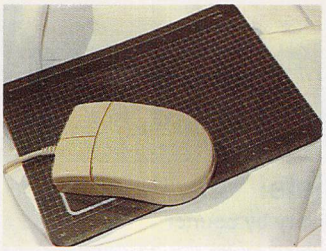


fone in

It seems that every subject you could think of has its own hot-line telephone number, which those of the populace desperate for a friendly voice ring to listen to a recorded message (and have their phone bill rise faster than the cost of petrol). So it isn't strange that they've started to appear for the home computer user.

Well-known industry tout Bruce Everiss has recently started four of the said lines, although only two will be of interest to STers. Mel Croucher's Computer Fun Line (0898 299399) has the distorted voice of the chaotic computer story guru himself trying desperately to amuse the callers. Megatip Gamesline (0898 299388) is the one to call for the help necessary to complete your favourite game.

The services are updated each Monday and cost 25 pence per minute at the cheap rate, and 38 pence per minute at all other times.



Another mouse

In addition to their Naksha-based replacement mouse, Gasteiner has introduced a new mouse for the knock-down price of £19.95, including mouse mat. The new rodent has a large body which is claimed to be more comfortable for anyone with a normal-sized hand (whatever that is...) or larger.

The mouse has a high resolution of 280 dpi, which means that it will race across the screen with the minimum of wrist action. Gasteiner are on 081 356 1151.

...and yet another

If your work space would qualify for an entry into 'USER's Dicky Desktops section, then you'll benefit from buying the Pilot Mouse. New from Logitech (0753 37222), the 200dpi self-cleaning rodent has its sensitivity controlled via a desk accessory.

And as an added incentive to buy the mouse, it's accompanied by three levels of Pipemania, one of last year's best selling games. Pilot Mouse is housed in an easy-to-hold attractive cream-coloured casing. It costs £39.10 with a two-year guarantee.

Speedy network

Fresh from the States is Lantech Network, which is to be distributed in the UK by Ladbroke Computing (0772 203166). Lantech is a high-speed network which allows access to floppy, hard and RAM disks as well as Centronics printers. With supplied accessories, messages can be sent or received across the network.

Data transfer is 10 megabits a second and STs can be up to 200 feet apart. The network operates by plugging units into the cartridge port of the ST, with a BNC connector. The STs are connected with coaxial cable and although neither this nor the BNC connectors are supplied in the kits, they're available from Ladbroke Computing at a reasonable cost.

The Starter Kit sells for £374.99 and each add-on kit costs £179.99.

Calamus price slashed

The price of Signa Publishing's (0252 341600) top desktop publishing package Calamus, has been slashed by almost 50 per cent. This is to make room for the colour version of the program, due to make an appearance in late September.

The announcement will come as good news to all those home DTP tinkerers longing for Calamus but not able to meet its hefty retail price.

The 'colour' version of the DTP heavy-weight has lots of new features including full colour separations. Speaking of the new version, Mike Dale head of Signa Publishing said, "[it] will take the top of the Calamus tree". Price of the monochrome Calamus is £258.75.

Also to be upgraded is Signa's MacWrite lookalike word processor, Script. Version 2 will have many improvements to bring its specifications closer to those of its main competitors. Perhaps the most significant addition is a spell checker, but the program will also enable text to be mixed with graphics and provides end notes as well as footnotes.

The new version will be available from late September and its price has yet to be fixed.

And to keep up with the mountains of business in emanating from t'North, Signa has recently opened a second office for sales and support situated at Aizlewood's Mill, Nursery Street, Sheffield, S3 8GG. Tel: 0742 82155.

MIDI line up

Canada-based Phil Comeau Software, has just launched two programs for the ST range. GEM-based MIDIX32 plays standard MIDI files through the ST's built-in sound generator and can output either C or GFA Basic source code, making the creation of musical effects for programs much easier. The program will run in either colour or monochrome and with any version of TOS.

The other release from Phil Comeau is MidiMagnet. Capturing MIDI output from other programs it creates standard MIDI files and can add format 0 and 1 standard MIDI output capability to most sequencer programs. Again the program is GEM-based and runs in medium or high res on any ST.

The company's at 43 Rueter Street, Nepan, Ontario, Canada, K2J 3Z9. Both cost CDN$15 (about £7) plus CDN$2 for shipping.

SOUND TRACKER STORMS THE ST

Due to be released at the forthcoming European Computer Trade Show is MPH's TCB Tracker, a four-channel sample-based music synthesiser which features a built-in drum machine, a sequencer and mixing program, with which you can play back four samples simultaneously (in stereo if you're using an STE).

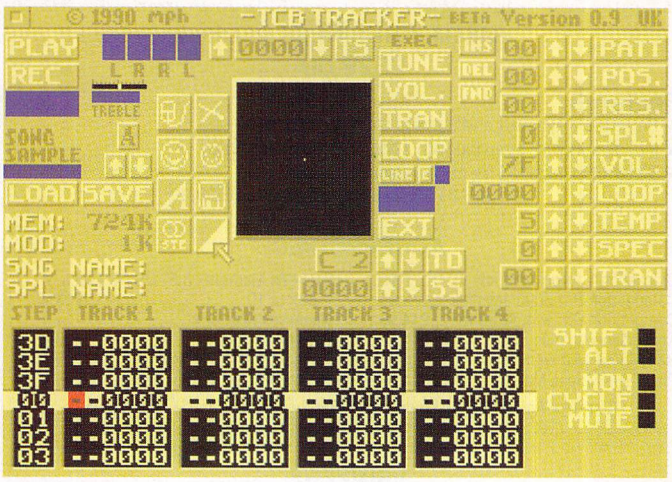
TCB Tracker has been written by the extraordinarily talented hackers/programmers responsible for the Care Bears demos. Among the many technical achievements built in to the program, the TCB crew claim to have implemented hardware scrolling on non-STE machines.

It's claimed that no knowledge of music is needed to use the new product, music is created from either the ST's keyboard or MIDI keyboard. Features include a volume control, loop control, special effects and a function to tune samples, all done using 28 per cent of the processor time so the computer is left with plenty of time to do other things.

Another major feature of TCB Tracker is its Amiga Mode. When a piece of music is converted from the Amiga, sounds are all of a slightly higher pitch. The Amiga Mode adds extra bass to the music to give it an improved sound quality, making it more like the original piece.

Other features include a mouse edit function and 30 cut and paste functions. The program can be used from a hard disk and can hold up to 16 samples in its memory at the same time.

Registered users will receive a quarterly newsletter, extra disks of .SPL and .MOD files and information on updates. A demo version of the program is also available in the public domain, but doesn't have MIDI keyboard or Amiga compatibility. Cost? A mere £49.95.



The TCB Tracker. If you want to find out more, try this month's cover disk

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NEW! fantastic value for money pack includes:

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- ★ Includes the new 1 megabyte 1040STE keyboard plus over £200 worth of business software including K-WORD wordprocessing software, K-CALC spread sheet and K-DATA Database software. Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.

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Red Mouse Mat with Amiga logo..£5.95	Amiga 1/2 Meg Expansion.....£99.95
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- ★ RAINBOW ISLANDS – smashing new arcade game – replacess New Zealand Story
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ARChive

More glorious pearls of wisdom from the golden days of ST computing, when only the 'in crowd' had their TOS operating systems in ROM!

FOUR YEARS AGO

The infamous blitter chip was seen for the first time in a pre-production form. At this time, it was a rather tricky upgrade to 520/1040STs which involved installing the blitter chip under the 68000 CPU. Needless to say, the upgrade never arrived, but blitters did eventually feature in Mega STs... Atari produces two new monitors: its own badged SC1224 colour monitor, and the SM125 monochrome model which had a swivel base and external picture size controls on the back panel... Atari produces a 400-page ring-bound guide to ST software, £14.95 to anyone who asks. The planned updates never arrived and the catalogue was shelved due to lack of staff to maintain it at Atari HQ, and the sheer volume of products arriving...

THREE YEARS AGO

Antic releases Base Two, a re-write of DB Master One, the database package bundled with some of the first STs sold... Talent Computer Systems upgraded their semi-relational database management package, TRIMbase... Metacomco releases a much improved version of their Pascal programming development system... American leisure software giants, Electronic Arts, sets up a new headquarters in the UK. Titles such as Skyfox, Chess Master 2000 and Marble Madness were set for imminent release...

TWO YEARS AGO

Third Coast Technologies emerges as a supplier of cheap ST hard drives. £399 for 25Mb was one of the best prices around in '88... Silica introduces the Marconi RB2 trackball as an alternative input device to the mouse. It was aimed at the CAD market... Precision Software, developers of the excellent Superbase range of products, opens a US office in Texas. This had very little to do with their ST products, which are still the best around. Precision's main target is the bigger PC market... Frontier introduces a meaty 120Mb model in the Supra hard drive range...

ONE YEAR AGO

The Xtra-RAM memory expansion kit falls in price to £299 for the populated 2Mb model... An ST version of Microtext's Teletext adapter is released. Microtext produced the Amiga version before the ST's, and found that the ST adapter proves to be just as successful... Mirrorsoft confirms that Fleet Street Publisher III will use the UltraScript PostScript clone routines for vector font hardcopy... Signa indicates that it will be taking on the innovative paint package, ZZ Rough. Sadly, the product failed to emerge although Rombo had a limited license to sell copies of ZZ Rough with their Vidi-ST digitiser... n days of ST computing, when only the 'in crowd' had their TOS operating systems in ROM!

SILICA SELLS SYSTEMS

Silica Systems (081 309 1111) struck a deal to distribute the Vortex Computer Systems range of products. Germany-based Vortex already has distributors in many European countries including Italy, France and Scandinavia as well as having a wholly-owned sales division in the Swiss town of Zug near Zurich.

Managing Director of Vortex, Reinhardt Michel, said of the move: "There's a large market in the UK which until now, our products haven't been reaching. We've been looking for a distributor there and consider Silica Systems to be the best company to promote our range."

One of the products making its first UK showing recently at Silica's Tottenham Court Road office, was the new AT emulator board, ATonce. The device is the first 80286 emulator for the ST and at £199.95 is more than £50 cheaper than its XT rivals.

Already selling well on the continent, ATonce runs all major PC packages including Windows 3, an advanced graphical user interface about to transform the PC market. ATonce runs at 8MHz, provides CGA, Hercules, Olivetti and Toshiba T3100 modes and has a Norton CI rating of 6.7. The board fits the entire range of STs, and adaptors priced at £26 are available for Mega and STE owners.

Also shown in the UK for the first time by the German company was the Datajet range of hard disk drives, 3,000 of which have been sold in mainland Europe since its release at the CeBit show in March. Aimed at professional users, the neat-looking drives have capacities ranging between 30 and 180 megabytes and all (with the exception the 30 megabyte model) have an optional 44 megabyte removable hard disk.

The disk accepts up to 30 partitions, 14 of which are accessible at any one time and at start-up, the user can choose which partition to boot from by pressing an Alt key combination. Another feature which sets it aside from cheaper competitors, is a hardware write protect on the drive, protecting it from the increasing threat of viruses.

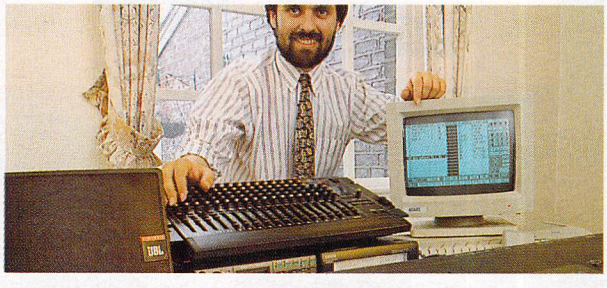
The drives are said to be quieter than most and the low level of sound emitted has been qualified with a certificate from the German Government body T.Ü.V. If the sound of the fan still drives you insane it can be turned off by pressing a combination of keys when the drive is not in use. When the drive is accessed, it's turned on automatically.

Prices for the Datajet range start at £499 for the 30 megabyte version.

Baby Cubase appeals to wider audience

New from Evenlode Soundworks (0993 898494) is Cubeat, a MIDI program designed as a low-cost alternative to Steinberg's expensive Cubase. It's nearly half the price of its sister program, making it especially attractive for those who'd like Cubase but are not able to pay the high price for facilities they may never need.

Score printing and editing, and advance MIDI management functions are among the features to be dropped, but Cubeat makes full use of Steinberg's Visual Song Processing, the technology which makes complex recording and editing processes clear and straightforward.



For £285 a MIDI recording system is offered to both the beginner and professional user. Work can be modified using the mouse and graphic tools used to cut, copy or move parts in your sequence, even while it's still running. A grid or key editor can be used to edit single MIDI events.

The program is fully M.ROS compatible and several programs can be run at the same time, or the ST can be networked to other machines of other makes. It is compatible with Cubase, Pro24, Twelve and MIDI file files.

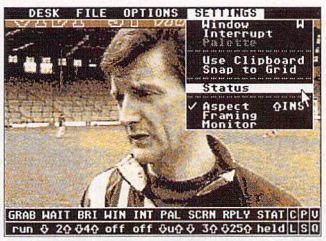
Minimum requirements for the program are a 1Mb ST and a monochrome monitor.

ATARI ST USER DISC BARGAINS

Send for the full version of selected programs from Atari ST User cover discs - and SAVE UP TO £60

Grab graphics like never before

. . . with the Vidi ST Digitiser



Rombo's Vidi-ST is a fully featured digitiser consisting of a plug-in cartridge, sophisticated picture manipulating software and a comprehensive manual.

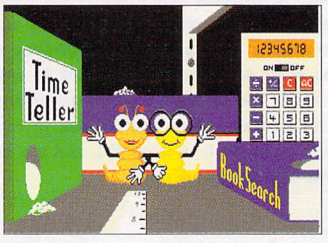
As will as grabbing single images from TV or Video for use with art programs or DTP packages, the Vidi can actually capture pictures and display them in real time – at up to 25 frames a second!

This is the essential package for anyone who wishes to make use of the full graphics potential of their ST. With a saving of £15 off the retail price this is an offer you should not miss.

SAVE £15! RRP £99.99 Our Price **£84.99**

Fun number crunching

. . . with Things to Do with Numbers



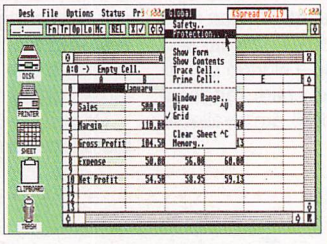
Softstuff is one of the top software houses producing high-quality educational software for the ST. And Things to Do with Numbers is one of their best creations.

On the disc there are three games designed to combine learning with fun in such a way that the child using it will automatically pick up various useful elements of mathematics – without even realising it.

With its clearly designed grahics and well thought out structure, Things to Do with Numbers is a value packed educational tool which, with a saving of £10 is even better value for money

SAVE £10! RRP £19.95 Our Price **£9.95**

K-Spread 2



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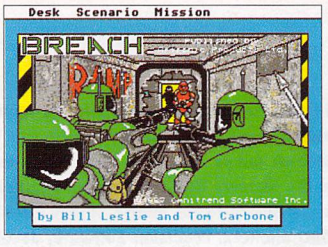
Once more . . . unto the Breach



Breach is a game which demands nerves of steel and sound tactical judgement for you to win.

You can select from a number of scenarios. For example with Breeder your task is to wipe out an alien installation and rescue Federated World citizens who are being used as fodder for man-eating monsters.

Breach is one of those games you just can't put down. With its addictive gameplay, tactical combat and facility for extra scenarios, its guaranteed to kep you coming back for more.

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world news

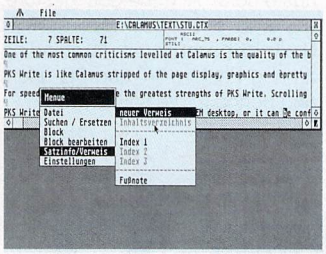
NEW TEXT EDITOR FOR CALAMUS

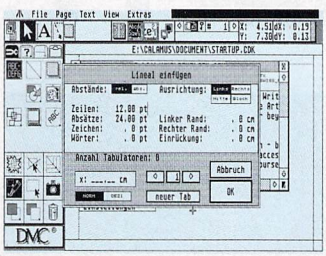
One of the most common criticisms levelled at Calamus is the quality of the built-in text editor. DMC, the German creators of Calamus, have answered this criticism by commissioning the Pahlen & Krauss Software programming team in Berlin to write a stand-alone editor totally dedicated to supporting Germany's leading DTP package. The result is PKS Write, which does for Calamus word crunching what Outline Art did to Calamus vector graphics - expands the famous DTP program's horizons beyond the limited features of the core program.

PKS Write is like Calamus stripped of the page display, graphics and pretty fonts. You can do anything with the text which you would be able to do inside the DTP program including selecting fonts at various point sizes and styles (although you only get to see the Atari system font), inserting text rulers with tabs and indents, and even pagination, footnotes, chapter numbers and indexing. The editor writes Calamus text (.CTX) files containing the appropriate codes, so that on return to Calamus, everything looks exactly as if it had been produced within that program.

Speed and ease of use are the greatest strengths of PKS Write. Scrolling and most block operations are blindingly fast, and the user interface benefits from a clever implementation of pop-up menus: the menu bar is almost bare but instead, all the program's functions are accessed by a right mouse click, instantly producing a hierarchy of menus and dialog boxes at the position of the mouse pointer.

Further speed improvements can be achieved by making full use of the extensive keyboard macro facilities offered by PKS Write. Again, the macro files are compatible with Calamus.





TOP: When run from the desktop, the PKS Write menu bar seems a little sparse. Instead, commands are accessed via pop-up menus

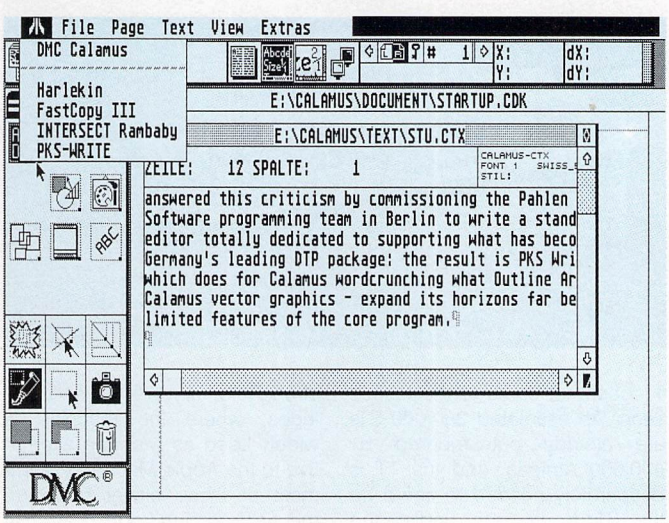
ABOVE: All the Calamus text formatting functions are available inside the editor, although in the form of dialog boxes rather than icons

BELOW: Configured to run as an accessory, PKS Write is instantly accessible from within Calamus to fine-tune your text files

PKS Write can be run in the usual way from the desktop, or it can be configured to run as a Desktop accessory from within any GEM application. Unfortunately however, it is not possible to flow text directly between an on-page text frame and the editor. Unlike the built-in editor, the detour of saving and loading .CTX files is necessary.

The most significant advantage over the built-in editor perhaps, is the ability to work on more than one file simultaneously in up to seven separate windows, and to cut and paste text between them. Care is necessary however, if these files are created at different times as both Calamus and PKS Write refer to fonts not by name or fixed numbers, but by variable numbers according to the order in which they were loaded and this can lead to some confusion unless you always load the same fonts in the same sequence.

PKS Write is available from DMC, Postfach 89, D-6229 Walluf,Tel. 010496123-7132. A British version may soon be available from Signa Publishing Systems, Tel. 0252-341584.



Video text

Coming from New York-based Water Fountain Software (010 1 212 929 6204) is VideoText, a character generator and video titler for the ST. It takes ASCII text from any word processor and creates text of various sizes, styles, colours and fonts.

Once done, output can be put on-screen in many different ways with screens created in paint or CAD programs. Completely GEM-based, the program can use up to 200 palettes and the output can be displayed on a VDU, or videotaped and used with or without a genlock.

Text lines can be positioned anywhere on the screen using the mouse, or can be centred and spaced out automatically. Up to nine GDOS fonts can be loaded and sizes range between 4 and 99 pixels. The text can then be put in one of several styles including normal, bold, light, outlined, underlined or shadowed.

VideoText requires a colour monitor and at least one megabyte of memory. It costs US $125 and is available from the publisher at 13 East 17 Street, 3rd Fl, New York, NY10003.

Rampant rodent

Here's an unusual tip picked up from a reader's letter we found in a German computer magazine. None of us here have seen this idea anywhere else. It requires some practice and dexterity but could be useful to reduce the drudgery of opening files in deeply nested folder structures.

The procedure is simple and works as follows: double-click on a drive icon to open a window as usual, but keep the mouse button pressed and move it swiftly away from the icon or several windows will open.

Just keep the button down and touch one, two or as many folders as you want, for them to open as if by magic. Finally, to open the file you want, highlight it and then release the button.

This method really works, but is not recommended for very high-resolution mice with hyperactive pointers for obvious reasons!

AMNESTY FOR EAST GERMAN PIRATES

The fall of the iron curtain is generally good news for export-hungry computer manufacturers, but software houses face a giant headache in Eastern Europe because of the absence so far of any effective copyright protection.

Even large institutions have been happily using pirated Western programs and will be very reluctant to pay huge sums in retrospect, in order to qualify for future upgrades. Add to that the rapid spread of personal computing as a hobby, and you have all the ingredients of a coronary for visiting FAST investigators.

In an attempt to make the most of a tricky situation, Tommy Software has announced a general amnesty for all users of illicit copies of MegaPaint and other Tommy products in the German Democratic Republic, soon to be reunited with West Germany.

East Germans have until 30 September to claim a free registration number, entitling them to the same support as Western customers. A generous gesture, but also good business as it is likely to boost Tommy's standing among Eastern ST and PC users and hence future sales.

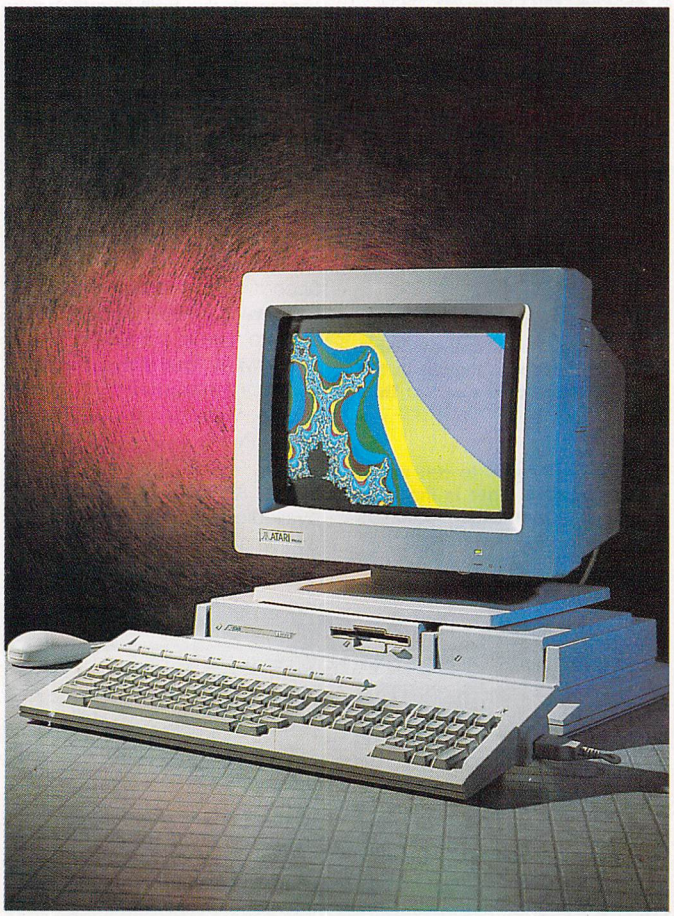
Waiting for the TT

ST users in the UK, where Atari's 16-bitters are sadly underrated as little more than games machines, could be forgiven for imagining Germany as the land where the Fuji logo rules supreme. After all, much serious software including such giants as Calamus, Signum, Megapaint, Tempus and Adimens has its origin there, not to mention hardware add-ons such as PC-Speed, Supercharger, large-screen monitors, scanners and many fast hard drives.

Compared to the UK and even the US, Germany takes the ST far more seriously, but it's as well to remember that Commodore is the real king of German personal computing. Not only has Commodore had more luck with its football sponsorship there (Bayern Munich instead of Chelsea...), but the top three best-selling home computers are the Amiga 500, C64, and the Amiga 2000. The PC1 and 128 also feature in the top ten, while in the business PC sector, three of the ten top models are from the same stable.

By contrast, Atari's best-selling 1040 is only fourth, with the 520 further behind among the home machines, and no ST models at all in the business rating - no more than a creditable showing for the Atari PCs.

Atari Germany is still ahead of such giants as Amstrad and Schneider in the home market, but the writing is on the wall if the TT does not come to the rescue soon. An estimated 350,000 STs are already outnumbered by 400,000 Amigas, and the TT is desperately needed to shore up the ST in its one undisputed stronghold: universities and colleges, where the machine is widely used as a cheap alternative to the Apple Mac, and where most of those clever programmers are coming from.



Memory gets mega

Richter Computer, based in Germany, is putting the finishing touches to a new type of memory expansion for the Mega range of computers. The extensions provide memory ranging from 6Mb increasing in 2Mb steps to 12Mb.

The MB-12 gives the ST 12Mb of memory and costs DM4,000. The device should be shown at the Dusseldorf show.

Paint by micro

A new art package from SCET is set to be a winner. Running on a 1040ST with monochrome monitor, Paint Shop allows for free-hand painting and object drawing. Signum and Borland fonts can be used and the package has a built-in programming language for geometric drawings and auto plotting of mathematical functions.

At DM59, Paint Shop is very much cheaper than its competitors and can be ordered from SCET at Postfach 500103, 3200 Hildesheim 5, FRG.

AtariFest

The seventh WAACE AtariFest will be held between October 6 and 7, 1990 at the Sheraton Reston Hotel in Reston, VA, near Washington Dulles Airport. There'll be demonstrations, tutorials and seminars at the show. Special events include an art contest, multi-player air combat competition, a MIDI concert and a user group meeting. Atari's goodwill ambassador Bob Brodie has claimed the WAACE show is one of the two 'must see' events for Atari users held in the States. More information from chairman, Russell Brown (010 1 703 680 2698).

World Newsdesk...

Gunter Minnerup: Hailing from the home of the sausage, Gunter is ideally placed for news from the ST scene

Ma Leiberwitz: Mother to Harvery and JJ and filling in for the guys this month

Are you wasting your valuable time setting your ST's clock?

Frontier's Forget-Me-Clock II is the answer

If you're one of those people who has an auto-run program annoyingly prompting you for the time and date every time you turn on your ST or STE or even worse, if you're one of those ST or STE users who doesn't set the system clock then Frontier's Forget-Me-Clock II cartridge is the solution you've been hoping for.

Just Plug It In And Go

With the Forget-Me-Clock II plugged into your ST or STE's cartridge port the system clock (used by the Control Panel) and keyboard clock will automatically be set at turn on or reset by a small auto-run program supplied with the Forget-Me-Clock II. No longer will you have to waste your time setting your ST's clock. Using the Forget-Me-Clock II also means that files saved on disk are always properly time and date stamped making finding the latest version of a file the simple task of just looking for the file with the latest time and date.

Full Pass Through

Frontier's Forget-Me-Clock II is a clock cartridge unlike any other. All other clock cartridges for the ST will tie up the cartridge port making it impossible to have your ST's system clock set automatically while still using another cartridge. The Forget-Me-Clock II has a full cartridge pass through which means that any other cartridge for the ST can be plugged into it while it is plugged into your ST. The Forget-Me-Clock II remains totally invisible so

Frontier's Forget-Me-Clock II Cartridge With Pass Through

that the other cartridge can be used normally, but it still automatically sets the system and keyboard clocks in your ST.

No Need To Open Your ST

Installing some clock cards for the ST means that you have to open your ST's case and pry computer chips out of their sockets. The Forget-Me-Clock II is a cartridge which plugs into the cartridge port on the side of your ST which means that its installation couldn't be simpler - you just plug it in and turn on your ST.

Software Included

Every Forget-Me-Clock II cartridge is supplied with time and date setting software for the Forget-Me-Clock II's clock together with a small auto-run program which automatically sets your ST's system and keyboard clocks every time you turn on or reset your ST. Built into the setting software is the facility to stop the Forget-Me-Clock II's clock to save on battery life when the Forget-Me-Clock II is not being used.

Satisfaction Guaranteed

The Forget-Me-Clock II is supplied under Frontier's ten day money back guarantee, which means that if you don't like the Forget-Me-Clock II for any reason, you can return it for a full refund within ten days of purchase. The Forget-Me-Clock II has been designed to work with any model of ST whether it be ST, STM, STF, STFM, STE or Mega ST.

Two Year Guarantee

The Forget-Me-Clock II carries a full two year guarantee which includes the battery. Battery life has been tested to be many times the guarantee period. Frontier will supply replacement batteries outside of the guarantee period for a small charge.

Price

Forget-Me-Clock II Cartridge £24.99

Price includes VAT. Please add £1.15 for postage and packing to all orders under £50.00. Frontier accepts payment by Visa or Access. Price subject to change without notice. Goods subject to availability.

Frontier Software

P.O. Box 113, Harrogate, North Yorkshire, England HG2 OBE. Phone (0423) 567140/530577. Fax (0423) 522874.

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music

MUSICAL MAGIC

And now, give just a minim of your time, while crotchety old maestro Ian Waugh provides a breve guide to making music on the ST – you'll positively quaver with excitement...

Arcade games, adventures, word processing, graphics, DTP - just a few of the near-limitless applications to which you can put your ST. Music of course, is another and you're probably aware that the ST is widely regarded as the music computer.

Unlike other applications however, computer users often think of music as a complex subject, difficult to understand and even more difficult to produce - whether you're using an ST or not!

This really isn't so. Making music with your ST is no more difficult than using it for word processing or to zap aliens. All applications require a little skill and it's simply a question of maximising the help the computer can give you.

Just as a word processor is an enormous aid to writing, letting you re-order words and sentences and checking your spelling, so your ST can help you create music by facilitating the re-order of sections which go to make up a piece of music. It can correct bad timing (ideal if you're not a keyboard wizard), it can enable you to hear a music line using hundreds of different sounds and it even helps you to compose music.

The ST's MIDI interface gives you access to some of the most sophisticated musical equipment on the market. It also enables you to control less-expensive instruments too. Via MIDI, even a cheap instrument can perform feats which would be impossible without a computer. Interested? Good, but what do you need and more to the point, how much does it all cost?

If you want to dip your toes in the water before taking the plunge, the sampler is a good place to begin. You can create music using sampled sounds for only a few pounds, and you don't have to be an expert musician. Start with programs from the public domain.

Soundtracker for example, enables you to create your own four-part songs using sampled sounds. You enter notes one at a time from the ST's keyboard, and there are lots of excellent demo tunes so you can see how it's done.

If you can read music or want to enter pieces into your ST from sheet scores, check out Quartet (£49.95) from Microdeal. This lets you create four-part pieces of music using sampled sounds, but the notes are shown on a stave in traditional notation.

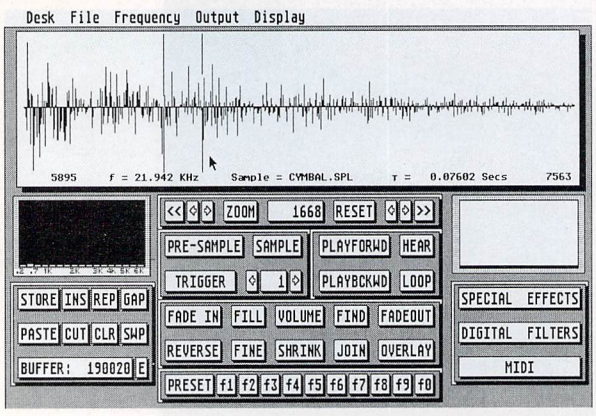
Using sampled sounds is great fun and the results can be very impressive as you'll realise when you listen to some of the demos. You can even go one stage further and work with complete pieces of music rather than building up a tune note by note. For this you

SIMPLE SAMPLING

Sampling: The process of converting audio information (sounds) into digital information (numbers) and back again. In number form it can be stored inside the computer and manipulated in a variety of ways.

Sampling rate: The speed or frequency with which the sound source is sampled. The more samples you take in a given time, the better the resulting quality, but the more memory it takes. Most samplers operate at a wide range of frequencies. CD quality is 44.1kHz (1kHz = one thousand cycles per second) although speech may be perfectly intelligible at 5kHz.

Sample editing: This is usually of the cut and paste variety. For example, the infamous n-n-n-n-nineteen effect is easy to produce. Having sampled someone saying nineteen, you use the markers to isolate that part of the sample which says n. Insert a copy of this before the start of the rest of the word to produce and Hey Presto! N-Nineteen. Repeat until you have as many Ns as you want.



LEFT: Main screen of AVR's ST Replay Professional. Using markers to home in on a section of the sample

need a sampler, but there are demo sampler programs in the public domain. Try the PD demo of AVR's ST Replay. This enables you to work with large sections of music - even complete songs.

Sound is displayed in graph form and using a series of markers you can isolate and highlight different sections, copy them, merge them, play them backwards and add effects such as echo.

In order to make samples of your own you need some sampler hardware such as an analogue to digital converter. Unfortunately, these are not available in the public domain. ST Replay costs £59.90, but ST Replay Pro at £129.95 will give you better quality sound and includes a drum pattern creator and a program to play samples from a MIDI keyboard. There's also the IS Digitiser at £69.95. STOS Maestro was designed to provide sounds for STOS programs. The software is £24.95 and the software plus sampling cartridge is £69.95.

MIDI INSTRUMENTS

The next step in musical exploration with your ST is to use the MIDI interface and plug it into a real instrument.

This does not have to cost you an arm and a

SEQUENCER CHECKLIST

All sequencers perform the same function of recording, manipulation and play back of MIDI data. Some however, have more bells and whistles than others and although they may be more sophisticated they may also be more complicated to use.

Number of tracks: Most sequencers have at least 16 tracks although some only have eight or 12. If you only have eight sound sources such as an eight-part multi-timbral instrument, you may think eight tracks will be enough. More tracks however, will enable you to lay down alternative music lines which can be experimented with before deciding on the final arrangement thereby greatly increasing your flexibility.

Macro editing: One of the most common operations performed is to copy part of the music from one track to another or to a different part of the same track. It's a quick way of building up bass lines and inserting repetitive themes throughout the music.

Most programs use a system of counters (also called markers or locators) which stipulate the exact start and end positions of the section to be copied, rather like markers in a word processor. Others work in bar increments which is much more coarse (like being restricted to marking sentences in a word processor), but is easier to perform.

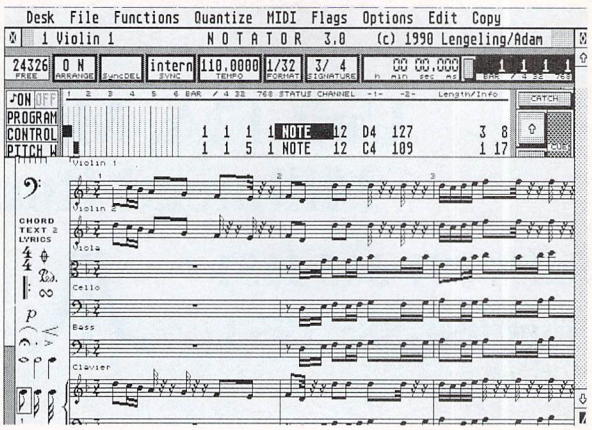
Note editing: If you can't read music, don't worry because most sequencers have a grid editor which shows the notes as bars on a grid. The higher up the grid the bar is, the higher the pitch of the note. Many musicians find these more intuitive to work with than notation.

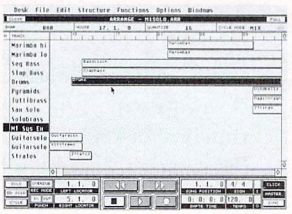
Quantisation: This is one of the joys of sequencing. If you play a part into the sequencer and your timing is a little out, quantisation will tidy it up. This is achieved by pushing and pulling the notes so they fall on exact divisions of the beat. The process may give rise to a 'robotic' feel, but to counteract this many sequencers now include partial quantisation which only drags back those notes which are well out of line. Some sequencers have a wide range of quantise options including humanise which adds time variations to the music, and swing.

As you can imagine, this shifting of notes could result in irrevocable damage to the original music. Many sequencers, therefore use non-destructive quantise which only affects the notes on play back leaving the original data intact should you change your mind.

MIDI File Format: Not all sequencers are equal. As with all types of program, some have more sophisticated features than others. Because of this, each tends to save the music in its own format which is not compatible with other programs. The MIDI File Format is a specification for a general format which can be loaded into all programs which support it. The feature enables you to transfer your music to another sequencer should you upgrade and it permits transfer into a score writer.

Score writers: A score writer converts MIDI data into traditional music notation. If you can read music you'll love using this feature. Few programs actually incorporate score writing facilities - C-Lab's Notator and Steinberg's Cubase are two of the most well-known - but there are stand-alone score writing programs available which will convert data imported into them.



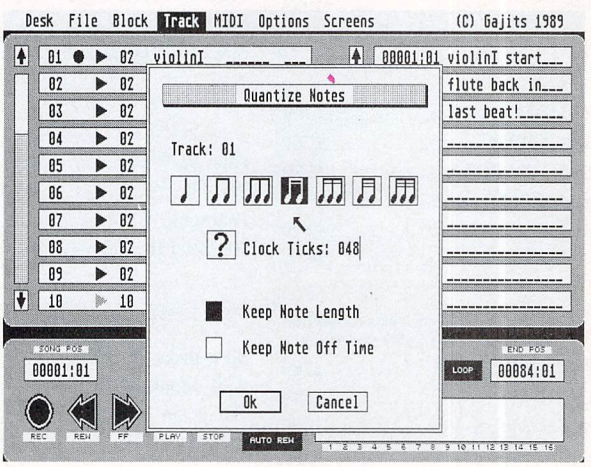


ABOVE: The Score Edit page of C-Lab's Notator. Notes can be edited here on the stave and printed out

LEFT: Steinberg's Cubase showing how music sections can be dragged to any position within a song

RIGHT: Main screen in Sequencer One showing helpful long track names and easy-to-use tape transport controls

BELOW: Quantisation function in Sequencer One showing the durations to which the notes can be quantised



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Access

VISA

leg. One of the cheapest ways into MIDI music is with a portable keyboard. These have lots of sounds, typically 50 to 100, built-in drum rhythms and accompaniment patterns. They all have easy-play features such as one-finger chords which, as their name suggests, will produce a full chordal accompaniment simply by holding down one key.

You can have fun with these instruments even before you plug them into your ST and some of the more up-market keyboards are used by singers in cabaret to accompany themselves.

Portable keyboards are good instruments to start learning music on because you can get a lot out of them for a relatively small amount of effort. An instrument with those all-important MIDI sockets start from just over £100. Things to look for are high multi-timbral ability and polyphony.

Once you've got a means of recording music into your ST you'll probably want a greater range of sounds to play the pieces back on. You could plump for a synth which can also be used to record the music, but a more cost-effective alternative is an expander. This is simply the sound section of a synth without a keyboard .

Synths and expanders vary in price enormously from around £300 to over £3,000. Most of them are geared towards the pro and semi-pro market so you can expect them to have a good range of facilities. But do check their multi-timbral ability and polyphony.

Synths may have a touch-sensitive keyboard (some of the more expensive portable keyboards do, too) which means the harder you play it, the louder the sound. This can also affect the tone of the sounds making it a more expressive instrument. Other facilities include a more sophisticated MIDI spec and the ability to load, save and edit new voices.

SEQUENCERS

Now you need some software. If you don't want to commit too much of your budget initially, try some of the PD sequencer programs. An intermediate step before moving on to a MIDI system is a program which uses the ST's sound chip. These have fallen out of favour of late and you may be able to pick up a copy of Activision's Music Studio or The Music Construction Set for £10-20.

Although these use the ST's sound chip, they can also play music via MIDI, although they have limited facilities. Incidentally, there are dozens of Music Studio songs files in the public domain.

A sequencer is the most marvellous musical device. In its most basic form it can be likened to a multi-track tape recorder on which you record a separate music part on to each track so building up a complex piece of music. But whereas even the most sophisticated multi-track recorders have only 24 tracks, a sequencer can have 64 or more.

The music in a MIDI sequencer is simply the digital representation of the note information, not the actual sounds (such as those which would be recorded onto an audio tape recorder). Digital signals are far easier to manipulate. If you speed up a tape recorder the pitch of the sounds on it rises. You can

TYPICAL SYSTEMS

System 1 - Oliver Twist

Software: The PD sequencer Alchimie offers an excellent range of sequencing facilities at a very reasonable price.

Hardware: To make the most music for the least cost, a keyboard with built-in drums and accompaniments, which is also multi-timbral is ideal. Yamaha's PSR590, costs £149.99 or less and has 49 mini keys, 100 AWM (Yamaha's custom sampling system) voices and 50 accompaniments. It is also 28-note polyphonic (more than many dedicated synths), and it has an excellent MIDI specification making it ideal for a MIDI workstation.

System 2 - Arthur Daley

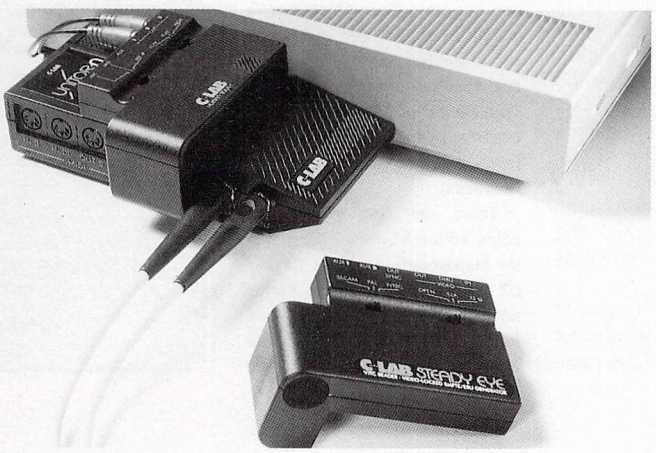
Software: There are lots of excellent budget sequencers on the market and for a compete list check out the guide in our May issue. They generally don't include the more esoteric functions of the big boys but newcomers won't miss these. Look for ease of use, flexibility and power. And will it run in half a meg of RAM if you have an unexpanded 520?

You could begin by looking at Dr.T's MRS (£49.95) although a few clams more will get you something more powerful such as Prodigy (£129.95), Trax (£85) - an updated version of Master Tracks Jr - Tiger Cub (£99) or Sequencer One (£89).

Hardware: In order to have more sounds at your disposal you'll need two or more instruments. A synth or digital piano could be the main keyboard and an expander or sampler will give you extra sounds.

There's a large number of suitable instruments on the market. A digital piano will set you back over £1,000 and expanders start at £400-500 (although check out the new EVS-1 at £299). There are many synths around the £1,000 mark such as Yamaha's SY55 (£1,099) and SY22 (£799), Roland's D-5 (£599) and U-20 (£1,050).

Once you acquire a few bits of MIDI gear you need a way of re-routing their connections without rummaging around unplugging and re-connecting them. The Philip Rees 5X5 MIDI Switcher (£89.95) can connect five Ins and five Outs in any combination.



C-Lab's synchronisation hardware, Unitor, provides a direct link between Notator and the world of audio. Steady Eye enables Notator to sync perfectly to video tape

Effects units are important for adding ambience like reverb or delay effects such as echo, phasing or chorus. The Alesis Microverb II (£179) is the latest in a long line of budget effects. QuadraVerb (£439) can run a signal through up to four effects at the same time.

System 3 - Lord Snooty

Software: This system will most likely be based around C-Lab's Notator (£495) or Steinberg's Cubase (£550). For professional work you need some sort of synchronisation and these programs have dedicated hardware sync devices - essential when writing music for film and video.

Stacy is the likely computer, especially for musos on the move, Mega 4 is a possibility or the new TT when it arrives. If you really have been elevated to the peerage, you may have two or more ST's, one running a direct-to-disk recording system such as DigiDesign's Soundtools (£1,995) which enables you to record music of CD quality direct to a hard disk.

Hardware: The main keyboard will probably be a dedicated master keyboard by Yamaha or Roland. These make no sounds at all, but have an extremely comprehensive MIDI specification ideally suited to creating, controlling and transmitting MIDI data.

There will also be a synth or several such as Korg's mega T1 (£3,700), Yamaha's new SY77 (£1,999) and Roland's new D-70 (£1,799). A professional sampler or two is needed, possibly the Akai S110 (£3,499) or Roland's new super sampler, the S-770 (£4,860).

To connect everything together, you'll need a MIDI routing box and also a mixer for the audio signals.

As well as a digital reverb unit or two, there will be lots of other audio processing equipment. Most of this will be mounted neatly in racks. Neat from the front that is, the rear will look like a spaghetti junction of cables.

How much for this lot? If you have to ask, you can't afford it. I could get a nice little set-up together for around £100,000. And even then there's bound to be something I'd forgotten!

speed up the music in a sequencer simply by throwing out the note data faster and with this method there is no corresponding increase in pitch.

Editing is far more comprehensive. Since we're dealing with discrete items of data, we can home in on any one of them with great accuracy. You can increase the length, volume or pitch of just a single note.

Many other manipulations are possible. For example, some sequencers can reverse the order of the notes and so play a piece backwards, but without the backward sound effects you get if you reverse an audio tape. Transposition is simply a matter of adding an offset to the note data.

You can set limits on the highest and lowest notes which will be played, copy any section of the music to another track, play two or more absolutely identical parts on different instruments, mute an individual music part or solo it so it plays by itself and insert tempo changes throughout a piece

To help make life easy, most sequencers adopt a method of operation similar to that found on multi-track recorders. You simply select the track that you want to record, then move backwards and forwards through the piece with familiar tape controls such as record, play, stop and rewind.

Most sequencers will enable the novice to plug-in and go fairly quickly (some quicker than others), but you'll have to read the manual to discover all the secrets.

GOING FURTHER

When you become familiar with sequencers and what they can do, you'll discover a whole range of other programs which can help make your musical life easier. Voice editors are available for most popular synths and expanders, and there are librarian programs which help you edit and organise the voices, then save them to disk. Many companies also sell new voices for synths stored on ST disks.

There are score writers which will print out your work as music notation, composition programs that help you come up with some totally original musical ideas or else manipulate and change music input of your own.

Exploring music with the aid of your ST may start off simply as a fascinating pastime but it could turn into something more. Few of today's pop musicians had a formal musical education and if you have the ideas, your ST can help you realise them. At the very least you could develop a life-long interest in creating music. Between you and your ST, who knows what musical artistic depths you may uncover...

FREE, GRATIS AND FOR NUTHIN'

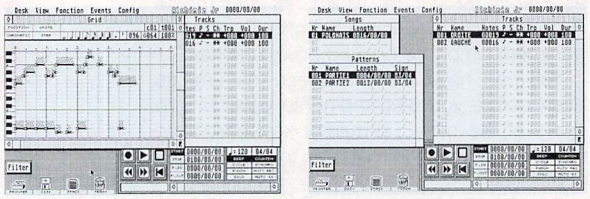
As the ST is the number one music computer it's hardly surprising to learn that there are dozens - hundreds - of music programs for the machine in the public domain. The mainstay of any MIDI set-up is a sequencer.

New Yorker Brad Quick has produced a very simple 16-track sequencer which runs in medium resolution, but the program has little more than basic record and play back functions.

Rather more sophisticated, is the Waddington or Canadian sequencer (named after the guy who wrote it/his country of origin). It's fairly simple to use but doesn't quite work as intuitively as the programmer suggests and the documentation is poor (but then at this price, you're gonna complain, right?)

However, a new PD sequencer has recently appeared in Softville's catalogue. Alchimie Jr. comes from Switzerland and it's the most sophisticated PD sequencer yet. It lets you construct up to 256 patterns which can be arranged in any order to create a song. For editing there's a MIDI event list and a grid editor. It will run on an ST and STE but requires a mono monitor. Documentation is very thorough, especially for a PD program (even if it does contain a little Franglais).

There are also several PD voice editors/librarians for popular instruments such as Casio's CZ series, Yamaha's DX series and the TX81Z expander and Roland's MT-32 and D110. Some of these are rather basic and none pose a threat to commercial editors.



Alchimie Main screen showing LEFT: Grid Editor window and RIGHT: Songs, Patterns and Tracks windows

There's some interesting composition software in the PD. Random Tune Generator from Goodmans lets you set up note selection lists for four music lines which it plays via MIDI. AMI (Algorithmic Musical Instrument) also from Goodman, selects notes from a list which you enter. It plays back music in four parts.

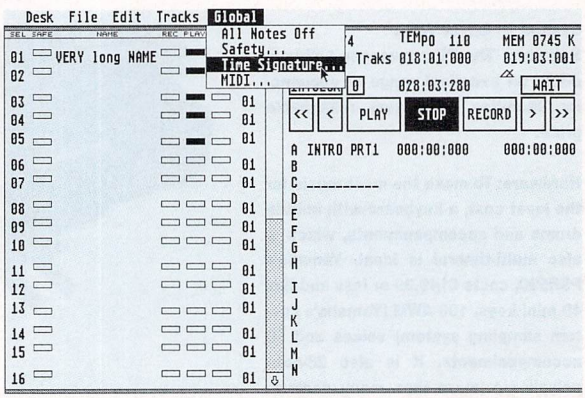
The are also PD demos of many professional programs. These usually have no save facility and may time out after 15 or 20 minutes, but they're well worth investigating. They also let you see the range and variety of music applications to which you can put your ST.

The following are some PD sources with comprehensive lists of music titles:

Softville PD Service, Unit 5, Stratfield Park, Elettra Avenue, Waterlooville, Hants, PO7 7XN. Tel: 0705 266509.

Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-On-Trent, Staffordshire, ST3 1SW. Tel: 0782 335650.

BELOW: The Waddington /Canadian sequencer's main screen showing the 16 tracks and tape transport controls



MASTERING MIDI

MIDI sockets: There are three types of MIDI socket called In, Out and Thru. The In socket receives information and the Out socket transmits information generated by the instrument itself. Thru transmits a copy of the information arriving at the In socket. Some instruments have two Out sockets and Thru is not to be confused with these.

Thru does not transmit anything generated by the instrument itself. it's used simply to link instruments together (the Out of the first goes to the In of the second, the Thru of which goes to another instrument's In and so on. This arrangement is known as a daisy chain.

MIDI channels: MIDI can handle data on 16 channels. This enables you to arrange music using 16 sounds (as long as your equipment can handle them all). It's like having a 16-piece band.

Multi-timbral: This means many tones or timbres and is the ability to play different sounds at the same time, piano, bass, strings and so on. With a MIDI sequencer you can create many separate music lines meaning that you should choose a multi-timbral instrument which will be able to handle all of them on play back.

Polyphony: The total number of notes an instrument can play at the same time. For example, if you press down all the keys on an eight-note polyphonic instrument, only eight of them would sound. If a keyboard was eight-part multi-timbral and 16-note polyphonic you would be able to play eight different sounds at once, each of two notes, or some such combination, seven parts using just one note and the eighth part using the other nine.

Professional synths are now typically eight or 16-part multi-timbral and most are 16-note or more polyphonic. Some portables, however, are 14-note polyphonic or more so these instruments don't necessarily sacrifice facilities in all departments.

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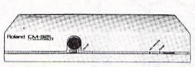

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Presenting PROTEXT 5.0

Five years to the month after Protext version 1 was launched Arnor are pleased to present version 5, an enormous leap forward in both ease of use and performance.

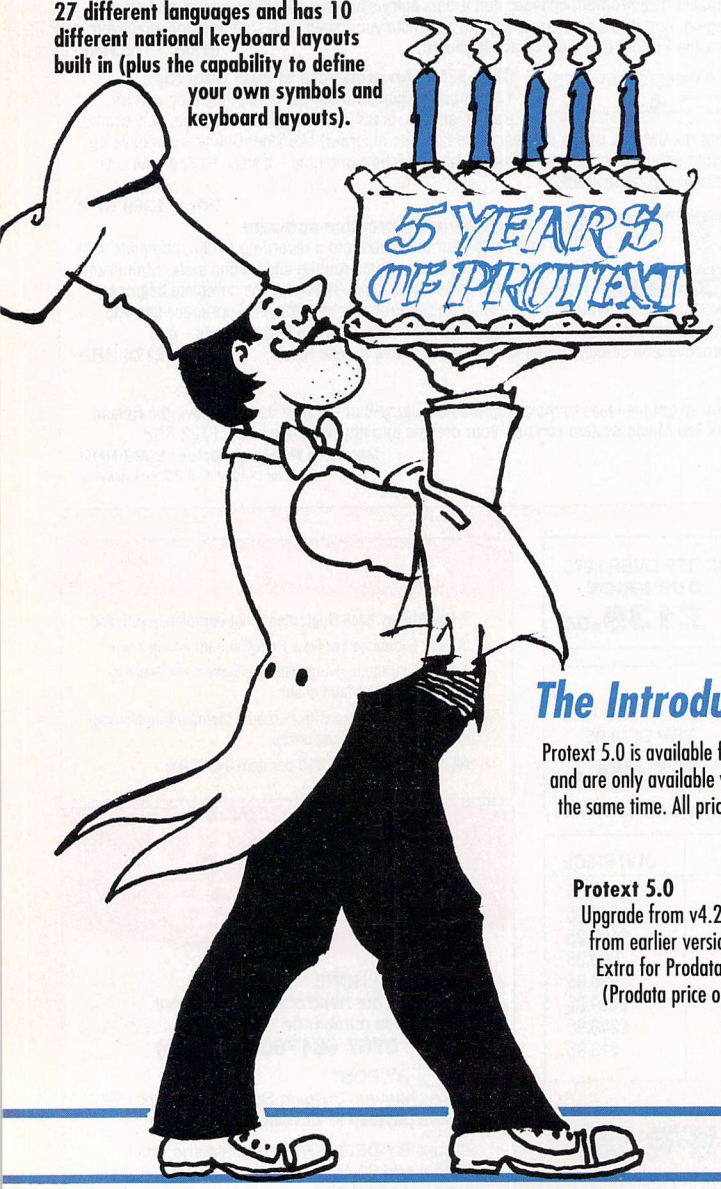
Protext 5.0 introduces a completely integrated system of pull down menus and dialogue boxes. The menus are among the many operations that may now be carried out with either the mouse or the keyboard. Protext really does give you the best of both worlds.

Protext 5.0 handles printer fonts flexibly and accurately. You can make full use of any number of proportional printer fonts, mix them freely within any line, centre them in headers, use automatically formatted footnotes. And Protext correctly formats your text as you type it, no matter how many font changes you use, showing you line and page breaks exactly as they will be printed.

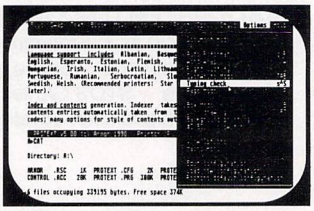
Protext 5.0 is still the fastest word processor around. Even though we have made all these major improvements we have taken great care to ensure that text editing is as fast as ever. The menus work smoothly and quickly even with high resolution displays. But of course, you can use Protext's efficient set of commands and keys just as before and 5.0 remains compatible with all earlier versions from 1.0 onwards.

Protext 5.0 is a worthy successor to version 4, which was described as "the best word processor at any price", "the best text processor on the Amiga" and "the most powerful word processor on the Atari ST" (AUI, ST/Amiga Format, ST User).

Protext 5.0 heralds a new era of multi-lingual European software, in time for 1992 and the opening up of Eastern Europe. Protext may be used in at least 27 different languages and has 10 different national keyboard layouts built in (plus the capability to define your own symbols and keyboard layouts).



The Features



☆ **New fast & easy to use pull down menu system** with dialogue boxes and alerts; file selector; mouse dragging to set blocks. Menus complement existing commands and keyboard shortcuts, do not replace them. Menus may be used with mouse or keyboard. Amiga version follows Intuition guidelines.

☆ **Enhanced printing capabilities** supports multiple proportional fonts; mixing of different font sizes on the same line; proportional formatting whilst editing; side margin, headers and footers independent of main text font. Tabs, decimal tabs and centre tabs. Extensive range of printer drivers supplied.

☆ **Multiple file editing** - up to 36 files may be open; split screen editing.

☆ **Graphics mode support** on PC allows use in virtually any text or graphics mode including 132 column or 75 line VGA modes; user defined characters and on-screen bold, italics and underlining now on all versions; use of 14 different accents on any character.

☆ **Language support includes** Albanian, Basque, Czech, Danish, Dutch, English, Esperanto, Estonian, Flemish, Finnish, French, German, Hungarian, Irish, Italian, Latin, Lithuanian, Norwegian, Polish, Portuguese, Rumanian, Serbocroatian, Slovak, Spanish, Slovene, Swedish, Welsh. (Recommended printers: Star LC24, HP Laserjet II or later).

☆ **Index and contents** generation. Indexer takes marked words or phrases; contents entries automatically taken from titles wrapped in control codes; many options for style of contents output.

☆ **Spelling checker** features completely new 120,000 word Collins dictionary with very fast phonetic lookup. Anagrams and find word pattern. Foreign language dictionaries (German, Swedish available now, others to follow).

☆ **Many other enhancements** including multi-line footnotes and endnotes; automatic timed save; add column or row of figures; indent tabs; find word at cursor; 40 column mode support; sentence operations; inter- paragraph space; much improved expression evaluator; self incrementing variables; Roman numerals; newspaper-style column printing; file sorting utility with special options for names and addresses; revised manual plus new tutorial guide.

☆ **And don't forget Protext still includes** background printing; box manipulation; macro recording; exec files; headers and footers; find and replace; mail merging; undelete; file conversion utility; configuration program; auto reformatting; on screen help; time and date; typewriter mode; line drawing; disc utilities.

The Introductory Offer Prices

Protext 5.0 is available from late August 1990 for the Amiga, ST and PC. These prices are valid until 30 September 1990 only and are only available when ordering direct from Arnor. You can also buy our database, Prodata, for half price if purchased at the same time. All prices fully inclusive. Amiga and ST versions require 1 Mb.

	Aug/Sep	from Oct 90
Protext 5.0	£125	£149.95
Upgrade from v4.2	£49.50	£60
from earlier versions	£64.50	£75
Extra for Prodata v1.1	£40	£79.95
(Prodata price only if ordered with 5.0 new or upgrade)		

Access

VISA

ARNOR

Arnor Ltd (STU), 611 Lincoln Road, Peterborough, PE1 3HA. Tel: 0733 68909 (24 hr), Fax: 0733 67299

USERDISK

OCT '90

ON THE DISK

SLEUTH
Calling Dick Tracy! Calling Dick Tracy! Come in please! Unfortunately, he's off on holiday so it's down to you to solve the mysterious murder at Grimley Manor. It's gruesome, but great fun!

TCB SOUND TRACKER
Beef up your ST's sound output with this demo of The Care Bears' superb four-channel stereo sound sample replay system. Pump up the volume and play the demo music or compose your own using the ST's keyboard.

MULTICOLOUR MAGIC
Don't believe that your STE has 4,096 colours in its palette? Here's a program to display them all on screen (try counting them!) This utility can wrap horizontal and vertical blank interrupts around its little finger.

RUBIC'S CLOCK
More frustrating than Rubic's cube was his infuriating clock. The dials, buttons and clock faces are interconnected with a puzzling logic that's hellish to work out. It looks easy, but wait until you try it!

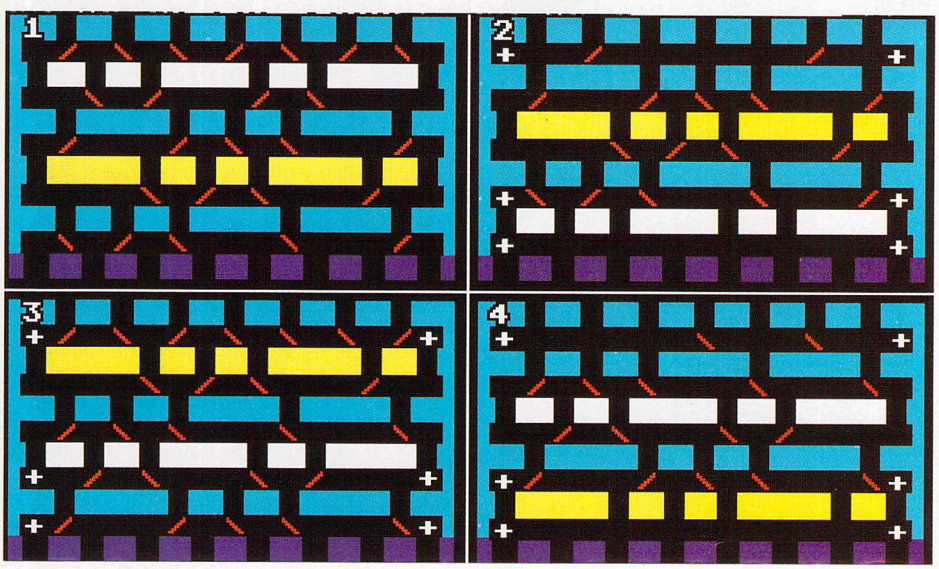
MULT-FORMATTER
Not only can you format ST disks to 80 or 81 tracks, 9 or 10 sectors, single or double sided, but you can also format PC disks as well. Added to that, you can speed ST disks by up to 50 per cent!

ANTIDOTE
Viruses are spreading like wildfire. Make sure your disks are regularly scanned and disinfected. This virus killer kit wipes out 99 per cent of all known germs, dead!

DISK COMPARER
Eliminate floppy disk errors by making sure that your duplicate backup copies of valuable software are identical to the original ones. This utility searches for and displays data and program corruption and can also detect viruses.

LOCATION CRISSLEFRIDGE
A massive 32 screens of puzzling arcade adventure are awaiting you in this STOSsed game. Save the planet by collecting and disposing of radiation canisters, digging out radioactive earth and killing the evil cribblewerts.

DISK COPIER
Before you ask - no it won't copy commercial software. But it will enable you to back up all other disks including 80 or 81 tracks, 9 or 10 sectors, single or double sided. DiskCopy



WHAT'S IN DOC?

• Well over 1Mb of stunning games, sexy demos and scintillating features as well as sound samples, MIDI libraries, clip art, the flotsam and jetsam of everyday computing, how can you be without it? Forget the rest, 'USER gives you the most and best!

• We use the most cunning disk formatting program ever devised to enable even single sided drive owners to get their read/write heads on the goodies, but even we're limited by natural physical forces ie if you only have one head then you'll only get one side, right?

• To access side two, simply double click the folder Side_2 and you'll be transported to an Aladdin's cave of electronic delights.

• And for those who just can't live without the tempting teasers on side two, we offer our Side Two Service. For the stunning 'cheaper-than-the-rest' price of just £1.50 (which includes the all-important postage and packing) we'll put the goodies from side two on a single sided disk and whizz it to your door. Cheques or postal orders made payable to Atari ST User Disk Offer to the usual address.

LOADING GUARANTEED

Look, we do our utmost to ensure that every disk is 100 per cent perfect. Unfortunately, physical forces such as those propounded by Einstein himself, suggest that a tiny proportion of those disks will contain errors.

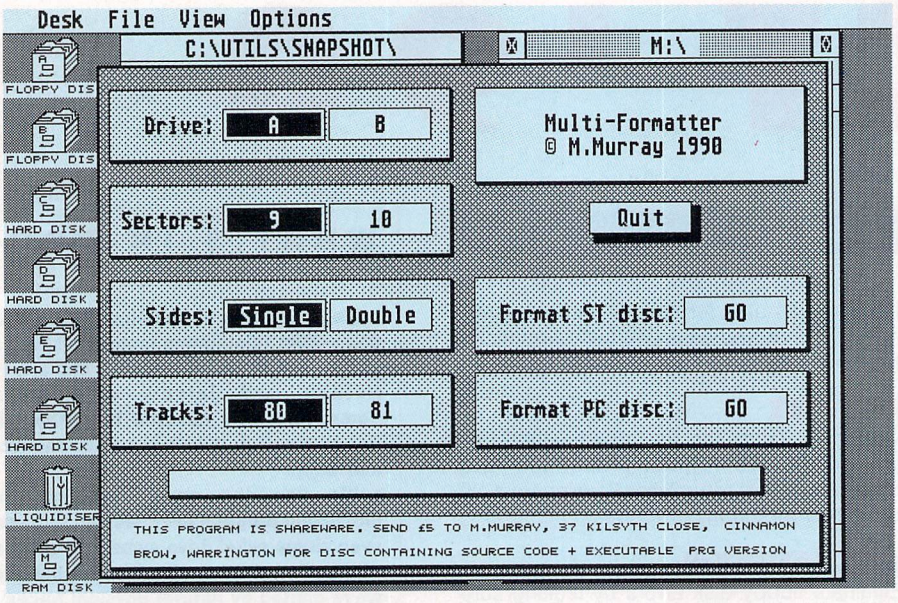
If you're one of the lucky readers who has a disk which conforms to Einstein's theories, but would rather have an ordinary, common or garden working disk, here's what to do: Stop panicking! We've come across the problem before and know just what to do. Wrap up the offending item in some stout packaging (you don't want to frighten the postie-man, right?) and send it to Stanley Precision Data Systems, Unit F, Cavendish Courtyard, Sallow Road, Weldon North Ind. Est., Corby, Northants, together with your name and address and we'll replace it.

MFORMAT.ACC

Configuration: All STs, colour and mono

"Not another formatter!", we hear you cry. This one however, is far better than any of the others you may have. It will format both ST and PC disks in a variety of ways, and speed up disk accessing by as much as 40 per cent.

Multi-Formatter is provided as a desk accessory so that it can be used from within any GEM-based program. Pull down the accessory menu, click on Multi-Formatter and up pops a dialogue box. Select either drive A or B, single or double sides, 9 or 10 sectors per track and 80 or 81 tracks (more options could easily have been added, but the disks become unreliable outside these limits). Now click on either the Format ST Disk or Format PC Disk buttons to format the disk.



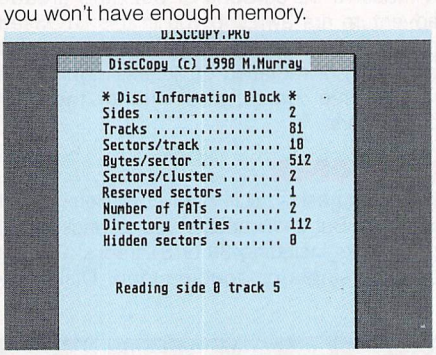
DISKCOPY.PRG

Configuration: 1Mb RAM, mono and colour

Back up any-format disks with this intelligent utility which formats as it copies. DiskCopy is a fairly straightforward utility for copying standard and non-standard disks, but not for copying protected disks.

Using special formatters, you can create disks in a variety of ways, such as single or double sided, 80 or 81 tracks, 9 or 10 sectors. Copying from the GEM desktop restricts you to just 80 tracks, 9 sectors per track, single or double sided and you can't copy anything else.

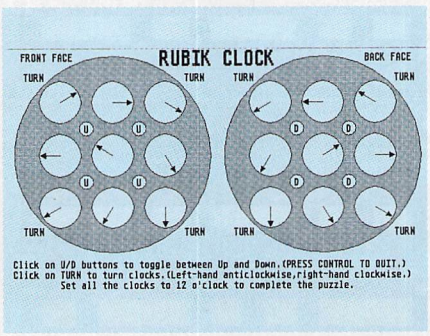
DiskCopy is an intelligent program that looks at the source disk to see how it is formatted. It then formats the destination disk in the same way and copies the data across, so you end up with an exact duplicate of the original. It requires 1Mb of RAM so it won't run on a 520ST, and if you have a 1040ST, don't install too many desk accessories otherwise you won't have enough memory.



RUBICLOC.BSC

Configuration: All STs, mono, FAST Basic

Rubic's cube and later his clock, proved addictive beyond all reason for a whole generation of youngsters. Here's your chance to re-kindle that addiction with a computerised version of Rubic's famous clock. Four clocks on each side of a thick plastic disc must all be lined up to 12 o' clock. The dials and buttons around the side appear to have an effect on the clocks, but what devious form of logic is employed in the connections? Can you solve the puzzle of the dials? If you're having problems you'll also find a solution on the disk.



CRISSLE.PR

Configuration: All STs, colour monitor

Location Crisslefridge is a mind bending puzzle game that will soon have you tearing out your hair in frustration! The most undemanding job on the planet Crisslefridge (...in a solar system somewhere on the edge of the Universe), was nuclear waste disposal, simply because there was never any waste to dispose of. Until that is, the Cribblewerts invaded the planet with the intention of turning it into a nuclear waste dump.

You, as Denby (a native of Crisslefridge), must dispose of the radiation canisters as quickly as possible by pushing them into carnivorous plants with huge chomping jaws. You also have to clear all the radioactive earth, collect the anti-radiation crystals, diffuse the time-bomb (with which the Cribblewerts hope to destroy you), and kill any Cribblewerts - phew! No time to stop for lunch.

COLOURS.PRG

Configuration: All Sts, colour

There may be only seven colours in the rainbow, but you can display 4,096 on your STE using Adam Greenwod's utility. How is it done? If you try to display all 4,096 on the screen you'd have to swap palettes more than once a scan line. However, using some clever palette switching techniques that continuously move coloured bands up the screen it's possible to see all of them scroll past underneath the desktop.

Colours is not just a useless demo however, because we've also supplied the fully commented 68000 assembly language source code, so you can insert the routine into your own programs. If you're not convinced that the extra colours are there just have a look at the same program on an old ST. If you don't believe us that the program displays all 4096 colours then count them!

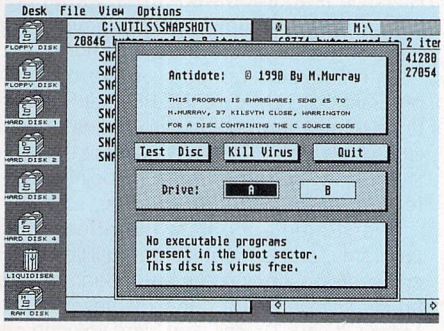
ANTIDOTE.ACC

Configuration: All STs, mono and colour

Antidote is a virus killer kit which can be used to detect and kill all boot sector viruses. Unlike all the other virus killers available, Antidote is unusual because it is a desk accessory. This means that it is instantly available from the desktop or from within any GEM-based program any time you require it.

BootSpy is also provided and this is an AUTO folder program that checks your machine each time it's booted and reports if a virus is present on the disk or in your ST.

Antidote and BootSpy don't try to identify or name particular strains of viruses, they simply kill them. This is achieved by disabling any boot sector program present on your disks.



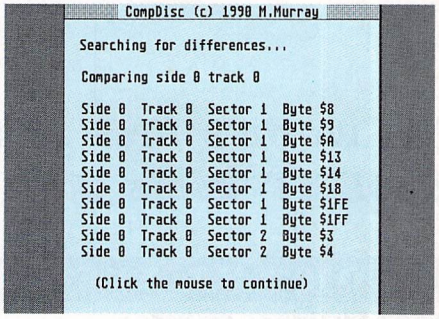
COMPDISK

Configuration: 1Mb RAM, mono or colour

When you back up a disk, are you certain that the copy is identical to the original? Maybe the duplicate has become corrupted? CompDisk will compare two disks to see if they're identical and will list any differences.

The program requires 1Mb of RAM so it won't run on a 520ST, and you shouldn't install too many desk accessories on a 1040ST because these will also eat up memory.

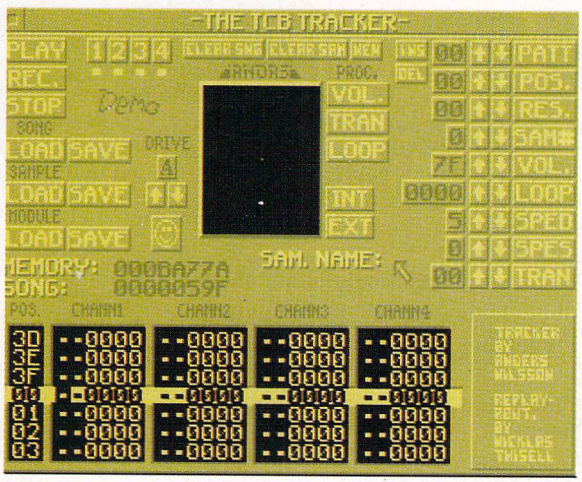
To use it simply double click on COMPDISK.PRG and insert the first disk at the prompt. When it has been read into memory, you'll be prompted to insert the second disk. The differences - if any - will be displayed.



TCB SOUND TRACKER

Configuration: 1Mb RAM colour

Make music with the ultimate sample player from the world renowned Care Bears programming team. Sound Tracker is another stunning piece of software from The Care Bears, but this time it's not a demo - it's a four-channel stereo sound sample replay system that enables you to create your own songs.



The sound quality is far better than anything heard before on the ST and what's more, it only takes up about 28 per cent of the ST's processor time. That means there is still plenty of processing power to drive fast arcade games with dozens of sprites, scrolling backgrounds and so on.

To play the demo piece of music on the disk, boot up Sound Tracker in low resolution then click on the Load Module button. Using the cursor keys select Vortex and then hit the Return key. Now click on the Play button. Sound channels one to four can be selected or de-selected by clicking on the buttons 1, 2, 3 and 4 at the top of the screen. Click on Stop when you've had enough.

CRICKET.BAS

Configuration: All STs, colour, STOS

Stumped is the only cricket simulation for the ST! Get out your pads, pick up you bat and stonly cricket simulation for the ST! Get out your pads, pick up you bat and stride out onto the wicket at the latest test match. Stumped gives you realistic ball by ball commentary of a cricket match - either limited overs, or full county or test match.

It can be played by two players or teams, or solo for fun. Tell the ST what type of game you want, the teams and players, and even which side is stronger if you like. Then toss up, decide whether to bat or bowl, depending on weather and wicket, and away you go.

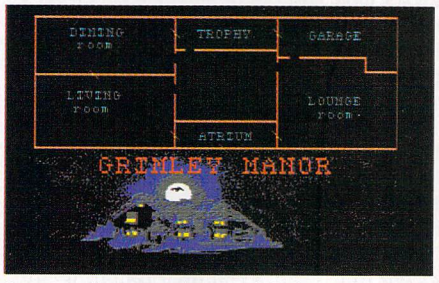
All major rules of cricket are catered for, and a full score card is given at the end of each over. A range of tactical choices are also available, letting you bat aggressively or defensively, declare and so on, or else set your field and change your bowlers as circumstances dictate. The game has been designed for maximum realism and is true to life right down to the occasions when rain stops play!

SLEUTH

Configuration: All STs, colour

'USER presents a whodunnit to rival Cluedo. Can you solve the mysterious murder at the manor? Sir Harry Grimley was a likeable and extremely generous man, loved by everybody in the village and certainly not a man to create enemies. But someone at that fateful gathering at Grimley Manor wanted Sir Harry dead. Between 1pm and 9pm, Sir Harry was murdered in an evil and monstrous way.

The call went out for the best detective in the land to solve the mystery (er, you...) The only way to nail the culprit is by questioning the guests at Grimley Manor. One of them is



the murderer and your job is to find the miscreant, the time the ghastly deed took place and where.

RUNTIME

ISSUE FOUR

The world's first totally dedicated electronic media magazine for all ST users goes from strength to silicon-based strength . . .

ON THE ELECTRONIC PAGES...

PROGRAMMERS' CLINIC

Questions and answers about Spectrum 512 pictures, bombing programs, and changing dialog button text make Mathew Lodge's clinic this month. Setting the double click speed from the AUTO folder also makes a come back. Got a problem? The Clinic will soon solve it.

GEM TUTORIAL

Get to grips with the ST's graphic environment manager and harness the power of the best micro available. The virtual device interface is the key to all graphic output and Roland Waddilove's step-by-step guide, will lead you gently by the hand through this programming minefield.

SCREENFULL

Two handy utilities have been supplied in response to this month's Screenfull challenge, TAB22, a program which converts tabs to spaces and Whereis? which searches for lost files on your hard disk. Could you write these in only 22 lines of code? See how it is done...

ARCADE PROGRAMMING

Phil Lawson takes a break from discussing STOS programming techniques, to give you the bare bones of a fascinating puzzle game. The aim is to drop balls into a vertical maze so that they fill the holes at the bottom. It's up to you to finish it off, so boot up STOS and get cracking!

Each month Atari ST User's disk-based programming magazine becomes more popular. The cover disk submissions are rolling in thick and fast and although the vast majority of programs are stunning, we're stuck with the ST's minuscule 800k floppy disks - only the lucky few make it to the duplicators. Don't panic if your submission hasn't yet been used - you're probably on the waiting list!

In this month's packed Programmer's Clinic there's a mixed bunch of problems and solutions. Maybe yours is answered this month! First up, is the thorny problem of setting the mouse double click speed in the AUTO folder to improve mouse response. Normally, this can't be done because GEM hasn't been initialised. One clever Clinic reader however, has used a bit a lateral thinking and worked around the problem.

Les Kneeling has also replied to the query from Ian McCall about changing the text in a dialog box in Laser C. Les provides a full worked example that can be compiled and run.

MIDGET GEM

RunTime's GEM programming tutorial continues its exploration and documentation of the ST's almost impenetrable virtual device interface, or VDI for short. This is the part of GEM responsible for drawing lines, arcs, circles, boxes and filling shapes.

This month, Roland Waddilove sheds some light on rectangles and fill patterns. Faced with a choice of 24 fills and 12 hatch patterns, filled and hollow rectangles, borders and rounded corners, the article is packed with facts, figures and programming examples.

Screenfull is an exciting challenge for programmers - to write a program (or just a subroutine) that will fit on one standard monitor or TV screen. That's about 22 lines.

This month's two Screenfull submissions are supplied by talented programmer Les Kneeling. The first is the classic utility program Whereis? which tracks down an elusive file that you can't find. When you have 30 or 40Mb of hard disk space and possibly several hundred files, finding the one you want can be difficult. Pass the filename to WHEREIS?.TTP and it will seek it out and tell you the complete path name.

```
/*-------------------------------------------------------------------------
  WHEREIS? - by Les Kneeling

  Lost a file? Don't know which folder it is in? Give the file name to
  WHEREIS? and it will search all of the disk for it. When it finds an
  exact match for the filename it will display the full path on screen.
  WHEREIS? will find all of the files with the specified name on the
  disk. Only exact matches will be found. Sorry about the readability of
  the code but it was the only way I could get it into 22 lines.
-------------------------------------------------------------------------*/
#include <stdio.h>      /* WHEREIS.TTP - search a disk for a lost file(s)  */
#include <osbind.h>     /* Written in Laser C by Les Kneeling              */
#include <strings.h>
typedef struct dta{ char r[21]; char fattr; char r2[8]; char fname[14]; };
char spec[15], path[160] = "\\";
main( argc, argv )
int argc;
char *argv;{
strcpy( spec, argv[1] );strcat( path, spec );
locate( path ); puts("Finished");Cconin(); }
```

TAB22 removes tab control codes from program source code and replaces them with spaces. Of course it would not be sufficient to simply replace each occurrence of a tab character with say four spaces. This would result in a ragged listing. What's actually needed, is to replace the character with the required number of spaces to move the cursor to the next tab column. And that's the task TAB22 performs.

Over the past couple of months, STOS games programming expert Phil Lawson has been showing how to bounce sprites all around the screen and in particular, off various obstacles.

You may have been wondering where all these techniques and methods were leading, in which case your question is answered this month. What Phil's done, is to write the main controlling loop of a strategy game, but it's up to you to finish it off. This should put your programming skills to the test.

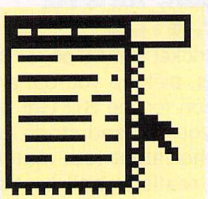
GETTING STARTED

RunTime is a disk-based magazine program with articles providing programming help, hints for games writers and much more.

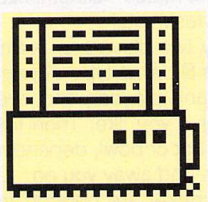
The magazine appears on the disk as a program called MAGAZINE.PRG, all you need to do to read it is double click on the program icon. You'll see a GEM menu bar at the top of the screen, moving your mouse pointer over it reveals several drop down menus.

These menus contain the titles of the programs, articles, games and utilities on the cover disk. Click on a menu option and the article will be loaded and displayed on the screen. If your TV isn't very clear you can print out the article , then study it at your leisure.

At the foot of the screen you'll see several icons. Here's what the main ones do when you click on them with the mouse...

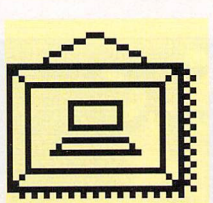


This is the icon which enables you to return to the opening GEM menu bar. Click this if you want to stop reading the current feature

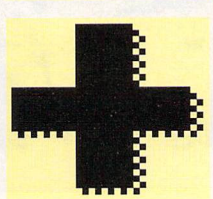


Use this icon if there's a particular page of the feature which interests you and which you wish to have on paper

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

THE 1990 ATARI ST PRODUCT GUIDE

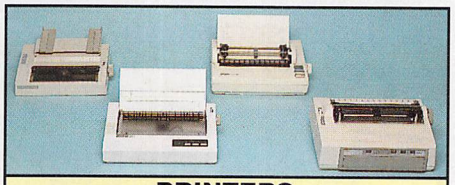
PERIPHERALS & ACCESSORIES

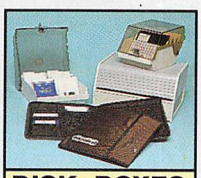
FLOPPY DISK DRIVES

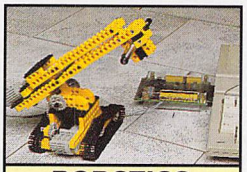
MONITORS

JOYSTICKS

SCANNERS


PRINTERS


DISK BOXES


ROBOTICS

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A MUST FOR ALL ATARI ST OWNERS!

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If you own an Atari ST, then you will not want to miss the FREE Atari ST Product Guide from Silica Shop. This 48 page, full colour guide is packed with details of peripherals, accessories, books and software for the Atari ST range of computers. In fact, the 1990 Atari ST Product Guide is the most comprehensive product handbook available for Atari ST owners. Not only does the Product Guide provide an invaluable source of information to Atari ST computer users, it is available absolutely FREE OF CHARGE! Just complete and return the coupon below for your FREE COPY! In addition to ALL Atari hardware, the range of products featured in the catalogue includes:

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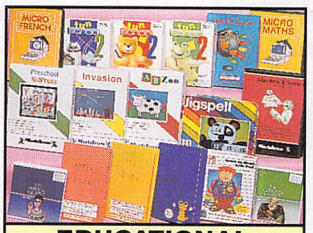
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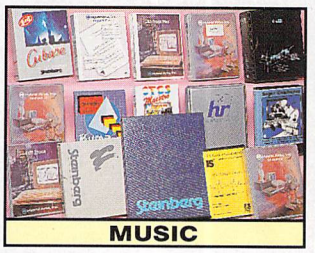
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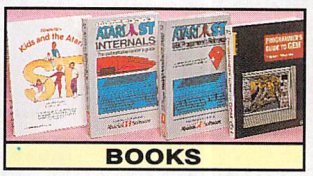
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- *Faster than any other competitor
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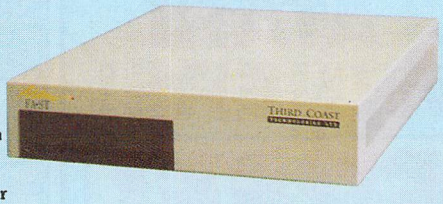

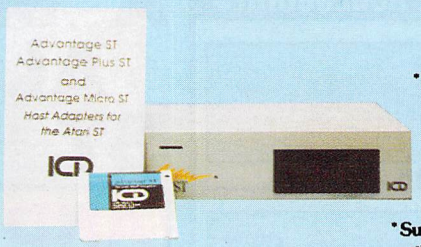

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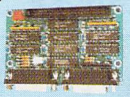
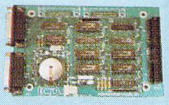
Hard drive DIY kits for SCSI & ST506 drives

Connect IBM PC type drives to the ST upto two drives off one controller

DIY Kits





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Hypercache ST £199.99

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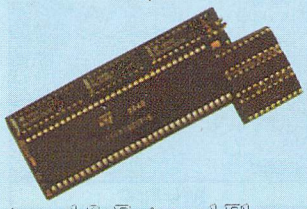

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- *Full comprehensive manual with detailed fitting instructions
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Hypercache 030 for the Mega ST range available soon call for details

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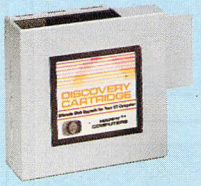

Happy ST Copier

Backups all Atari software as well as most Amiga and PC. Requires no external floppy drive to run. Software updates available every week. Over 200 copying routines included with the cartridge. Floppy to file transfer allows programs to be modified etc. Comes supplied with analyser software so that you can find the protection on the disk. Uses custom hart chip. Buy Happy ST and you will never need another copier.

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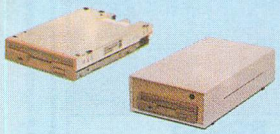

1M/Byte internal replacement offers extended track count upto 84 tracks fully software compatible slight case modification required supplied with full fitting instructions

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Broadcast quality genlocks

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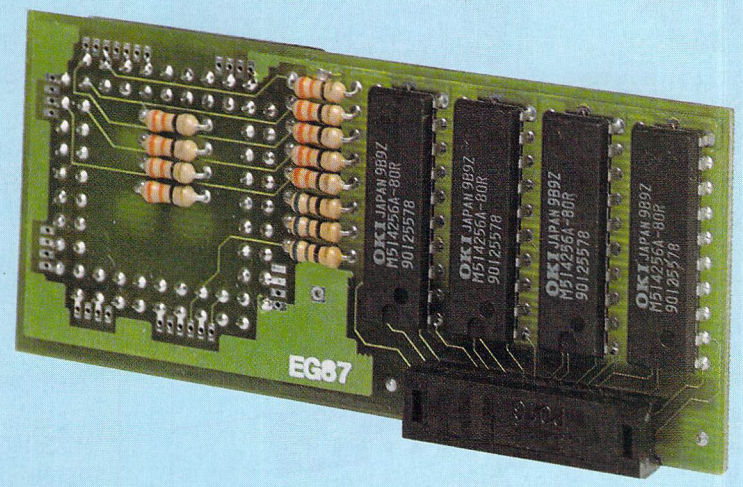
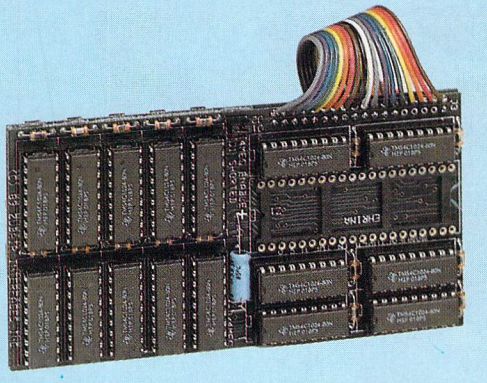


1/2 megabyte plug in board Atari ST User September 1990
"Features–Excellent Ease Of Use–Good"



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

Easy To Install

Upgrading the memory of your Atari ST has never been easier using Third Coast's range of memory upgrade boards. We have plug in upgrade boards to take your machine upto a realistic 4 Megabytes so you get no more out of memory headaches. Third Coast's range of memory expansion boards take around 1/2 an hour to install and come supplied with full fitting instructions for all revisions of Atari's. If you should get into any difficulty fitting any of our memory upgrade boards are technical staff will give you any assistance you need over the telephone. Third Coast's memory upgrade boards are fitted by plugging a socket over the MMU chip and the Video shifter chip and require no soldering whatsoever.

Expansion Policy To 4MB

With Third Coast's 1/2 megabyte plug in board for Atari's with and without surface mount MMU chips we offer an expansion policy to 4MB. What this entails is, if you purchase a 1/2 megabyte expansion board from us and you decide you need either 2.5 megabytes or 4 megabytes. Return the board to us and we will discount you the price tou paid for the 1/2 megabyte board off the current price of the 2.5 megabyte or the 4 megabyte board. You are not left with 16 useless chips like the solution offered by offers but merely a cost effective simple way of upgrading your machine to 1 megabyte, 2.5 megabytes and eventually to a full 4 megabytes.

Expansion Options

If you have a 520STM, 520STFM or even a 520STFM with surface mount MMU chip we have the solution to take your machine upto 1 megabyte with the expansion policy to 4 megabytes as described above. Third Coast also offer expansion to 2.5 and 4 megabytes for 520ST owners. For 1040ST and Mega 1 owners we have an expansion board to take your machine upto 2 megabytes, 2.5 megabytes and 4 megabytes. For Mega 2 owners we offer a plug in board to take your machine to 4 megabytes.

Fully Compatible

Third Coast's range of expansion boards are all auto configuring and compatible with all software for the Atari ST.

Warranty

All memory expansion boards carry a full 12 months warranty and free 12 months telephone support.

Software

All Third Coast ram upgrades come supplied with a ram checker which checks every chip on the upgrade so you know if you have fitted the upgrade correctley. Also included is a ram disk, print spooler and several other useful public domain utilities.

1MB Internal Floppy And Upgrade

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Pricing

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RFI Interferance

All Third Coast's ram upgrade boards fit under the RFI shielding so that you get no interferance on your screen.

For more information on any of Third Coast's products please return the form below to the address listed at the top of the page.

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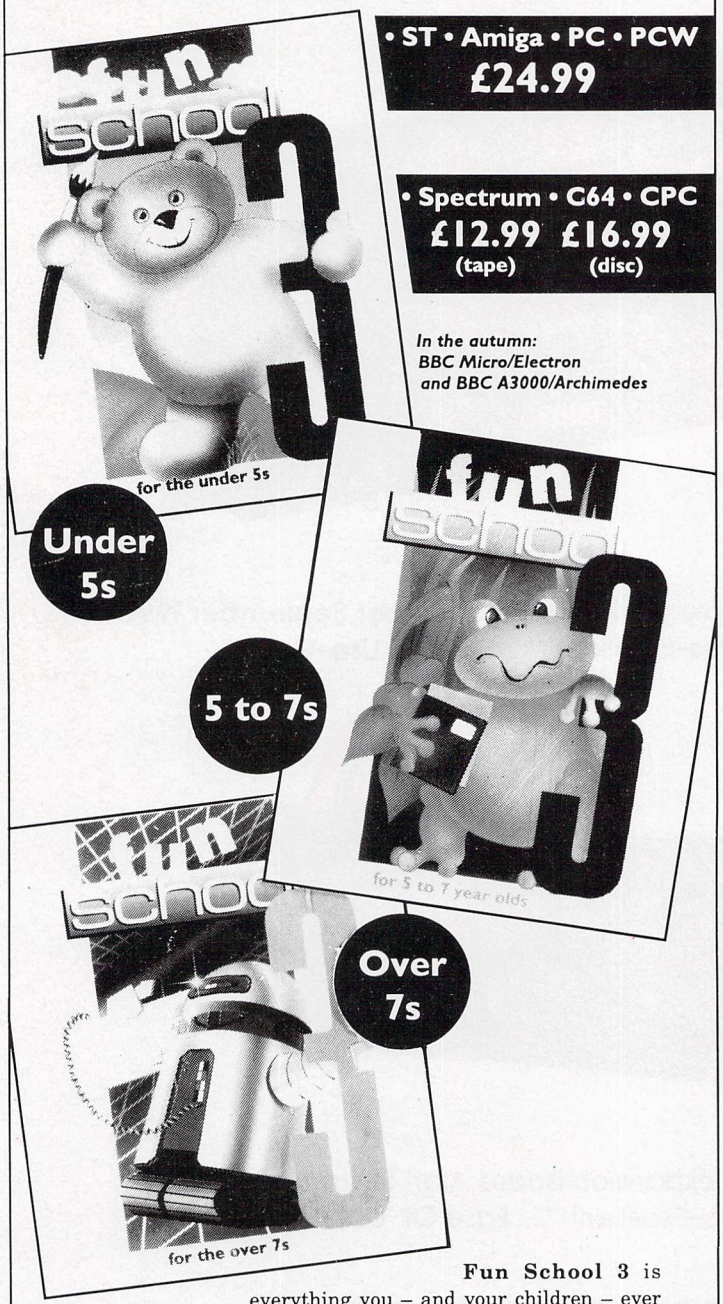

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AT-Speed is installed inside the ST's case and sits on top of the 68000 processor – like PC-Speed. Because installation is the same, swapping from PC-Speed to AT-Speed is simply a case of removing one board and replacing it with AT-Speed.

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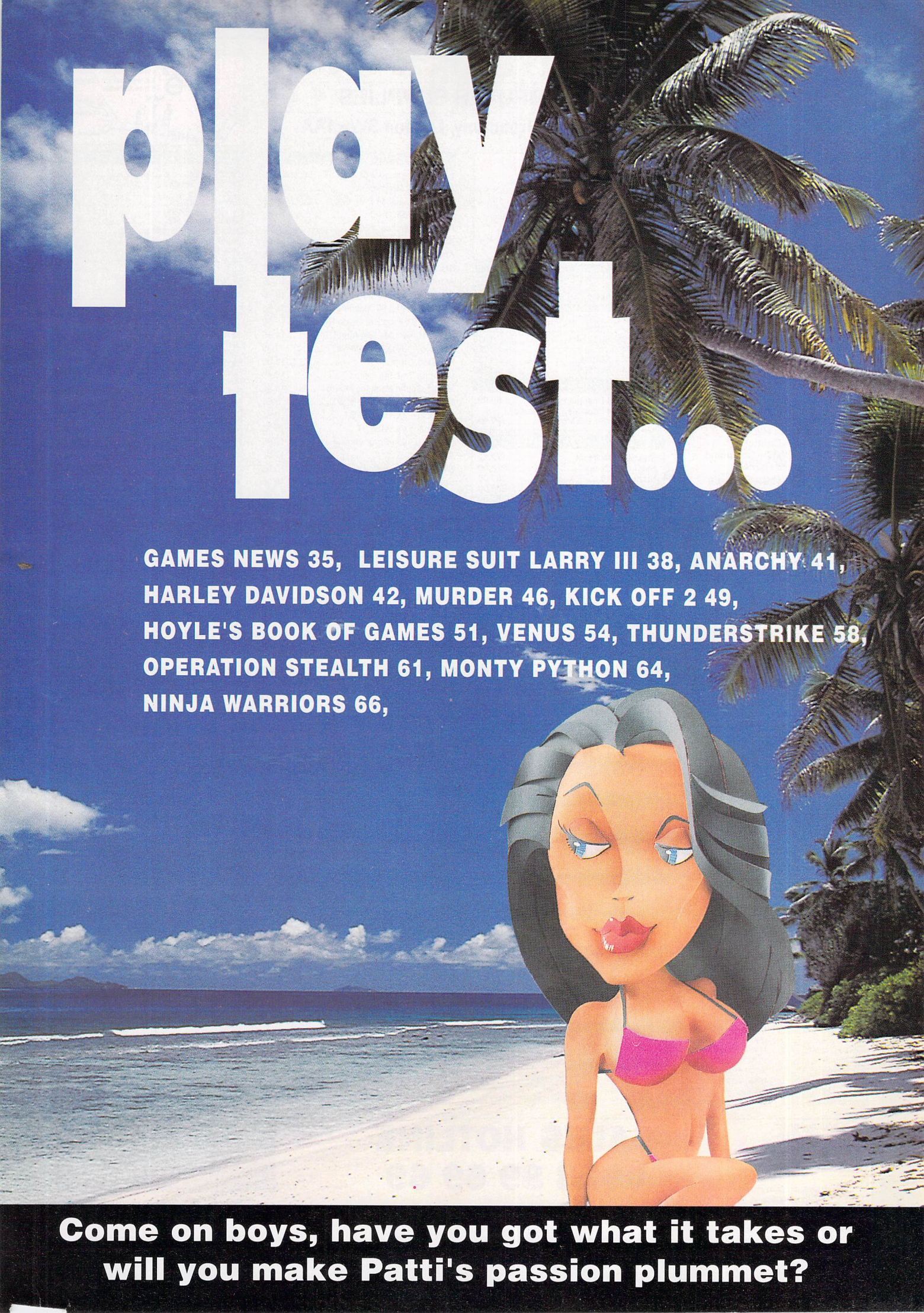

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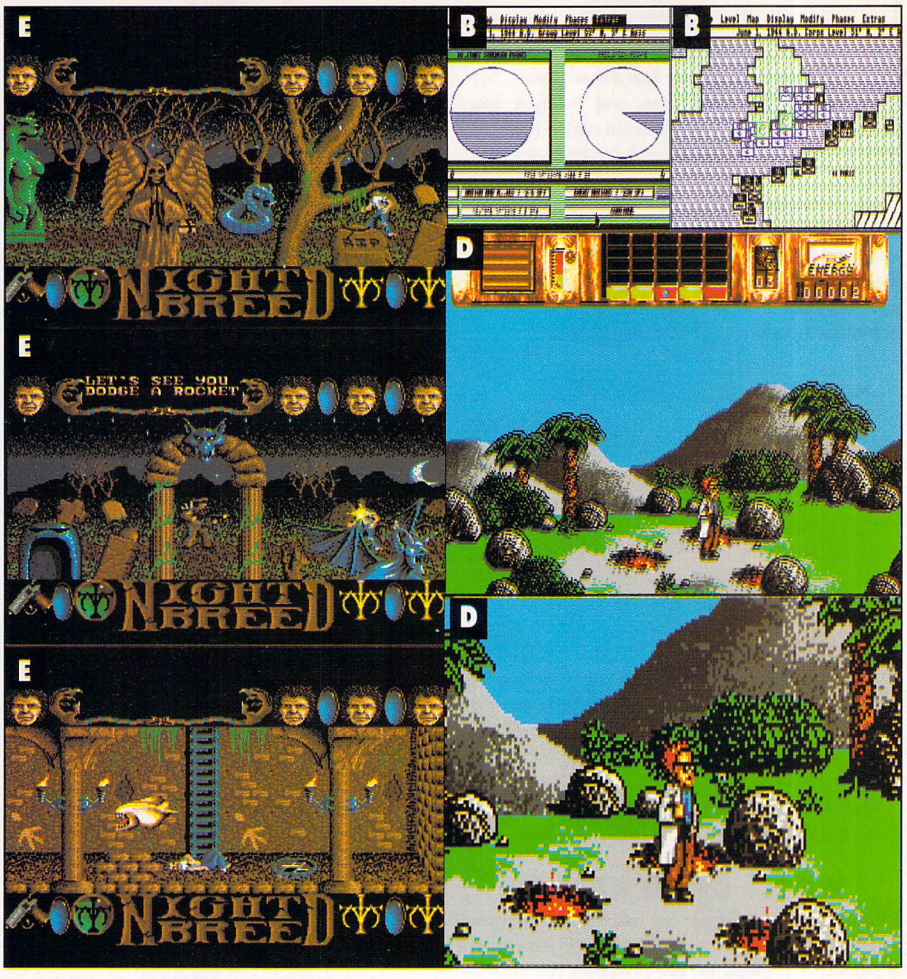
PERSONAL CALLERS WELCOME AT BOTH SHOWROOMS

MONDAY-SATURDAY 9.30am - 5.00pm

With the Christmas season in our sights the games scene is becoming busier by the minute. The major software houses are all targeting their games for this lucrative time of year and we'll be here to tell you what's what just before it hits the streets.



A THE LIGHT CORRIDOR

Dear, dear me! Somehow you've managed to get yourself trapped in an endless corridor and it seems there's no light at the end of it. Still, if you can conquer the passages you may just escape.

Controlling a translucent racket you bounce a sphere through the tunnel. The ball bounces off both walls and various obstacles scattered around the corridor. By collecting shapes you can help or hinder your chances.

The game takes place over seven separate tunnels, each one consisting of two parts. Each of these tunnels/corridors corresponds to the colours of the rainbow and becomes progressively more difficult. Included with the game is a screen editor that enables players to create their own tunnels.

The Light Corridor joins the other titles of Infogrames - Alpha Waves and Weltris - in the company's Crystal Collection. The game will be available from September priced £24.99.

B NATIONS AT WAR

Remember the intense strategy of UMS? Now prepare for the ultimate challenge as UMS II: Nations at War hits the streets. Billed as the definitive military campaign simulator, UMS II has been developed to truly universal proportions.

The game's predecessor kept strategy to a single battlefield but with UMS II, you can engage the enemy on a global scale. This piece of software history has been worked by Intergalactic Development's team leader Ezra Sidran, and has taken the American programmers over three years to complete.

The simulation enables over 16,000 units to be controlled by one player. Up to 127 players (computer-controlled or human) can simultaneously control 525 provinces and 32,000 units in the titanic struggle for world supremacy.

With a wealth of other options too numerous to mention, UMS II must be the most advanced simulator of its kind. Available in August, UMS II will be released on the Rainbird label priced £29.99.

C THE SPY WHO LOVED ME

Bond is back! This time Domark has decided to take The Spy Who Loved Me and turn it into an action-packed computer game. Bond has been called in as a last ditch effort to halt the evil machinations of arch villain Karl Stromberg.

The evil old megalomaniac has stolen two nuclear subs, one Russian the other British, and now plans to use their missiles on New York and Moscow. Naturally, the results of such an attack would be catastrophic, leaving the door wide open for Stromberg and his dream of a new undersea Atlantis. Together with the beautiful Soviet spy Anya Amasova, Bond (ie you!) must put a stop to Stromberg's plans. The action hurtles along at a startling pace, with wild chases in the converted Lotus Esprit, speedboat and jet-ski skirmishes and vicious gun battles deep within the bowels of a giant oil tanker.

In order to equip Bond's Lotus, you'll have to collect Q-tokens before driving into the Q-mobile to upgrade the car. The game even features you wrestling with Stromberg's evil, but loveable henchman, Jaws. The Spy Who Loved Me is available from Domark in September, priced £19.99.

D TIME MACHINE

Remember Hammerfist from Activision? Well, the programmers behind that game have just finished work on their latest project, Time Machine. Mev Dinc and the Vivid Image team have created a 4D fantasy role-playing game that Activision claims will keep gamers glued to their computers.

The game has the slightly nutty Professor Potts trying out his latest prototype time machine. The tall, rather awkward Prof is instantly recognisable by his shock of untidy red hair and his lab-coat and goggles. Now it just so happens, that while testing his latest invention, the Prof was hijacked by a gang of merciless terrorists. The result being that our hero is thrown back through the years to the very dawn of time.

Using skill and judgement, you take control of Potts with the intention of getting back to your own time. This is a difficult task and involves interfering with evolution, and Potts must perform certain tasks in each zone before the next one may be initiated.

Travel through both time and space is possible by using a limited number of reusable transport pods. Time Machine is available from Activision at the end of September and priced £19.99.

E NIGHT BREED

Have you heard of Midian? The name means 'a place of refuge' and is a legendary city where all sins are forgiven. For those poor souls who have given up all hope however, Midian hides a darker side.

Boone has nowhere else to run. Accused of a series of murders he didn't commit, fleeing from a disturbed past and an empty future - Midian calls.

Pursued by his beautiful girlfriend, an obsessed law officer and a psychopathic killer, Boone must learn to survive amidst the living dead Shapechangers, of the labyrinthine necropolis that is his destiny. Residing among the Nightbreed, Boone will have to face the terrors and nightmares that Midian holds and be prepared to defend the subterranean haven against those who would destroy it.

Before the final struggle is over and his transformation complete, Boone will discover that even monsters have souls and also the evil that lurks behind the faces of men.

Nightbreed is just one of the three games based around Clive Barker's books. The eerie tale takes the form of an arcade adventure and will be available from Ocean in October priced £19.95.

F SLY SPY

Ocean has undertaken the conversion of Data East's espionage extravaganza, Sly Spy: Secret Agent. The game will be available soon and involves you attempting to rescue a beleaguered nation from the oppressive regime of the Council for World Domination.

Ocean has successfully converted all nine of the original's levels and the action takes place in many settings such as a high-speed sports car duel and intense underwater guerilla warfare. One thing's for sure, you won't want to miss out on this one. Sly Spy will be available in September priced £19.99.

G RICK DANGEROUS II

Remember the intrepid hero of the classic Firebird platform game? Well, he's back! Yes, Rick Dangerous is once again about to wing his way to our computer screens, in this sequel to his archeological adventures.

Kitted out in his new-look Flash Gordon outfit, Rick has to make his way through five alien-infested levels before putting a stop to the Fat Man's devilish scheme. With a whole host of options, traps and puzzles, Rick Dangerous II looks to be every bit as good as its predecessor. But with improved graphics and gameplay both the game's programmers, Core Design and MicroStyle are hoping it will be even better!

Rick Dangerous II is available in October with an asking price of £24.99.

H GOLD OF THE AZTECS

U.S. Gold have called upon the talents of ex-Psygnosis programmer, Dave Lawson and the Kinetica team to produce a stunning arcade adventure called Gold of the Aztecs. The game features over eighty trap-riddled screens which you must successfully negotiate before claiming the cursed gold.

With over 9000 frames of animation, 1500 of which are used on your character alone, the game looks really impressive. Curse of the Aztecs is due for an August release. However, with all the strange events happening to those who have anything to do with the game, you'd better wait for exact dates and prices...

I OPERATION STEALTH

As mentioned last month, U.S. Gold has acquired the rights to publish Delphine's games in the U.K. Operation Stealth will be the first title to appear and is the second Delphine game to use the impressive Cinematique adventure system.

You play John Glames in the game and in a top secret mission, travel to Santa Paragua to try and discover what has happened to the multi-million dollar Stealth Fighter. With a wealth of hi-tech gadgets at your disposal you must out-wit the South American dictator's men, fool the KGB and escape with the Stealth.

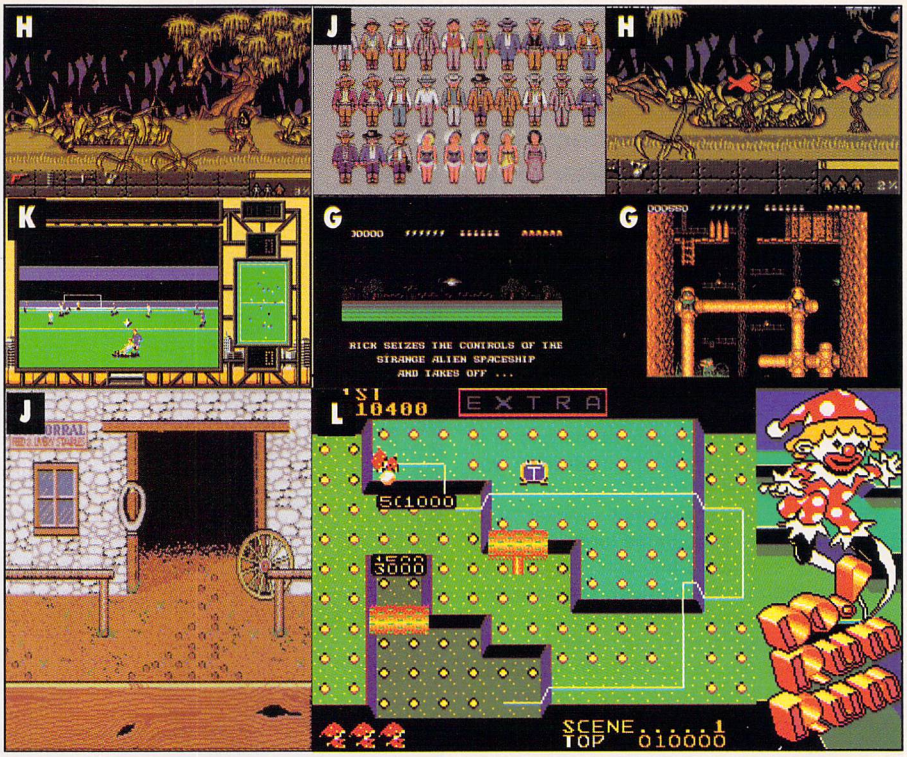
Delphine has improved on the Cinematique operating system and Operation Stealth features new enhancements. The game will be available from U.S. Gold in August and priced £24.95.

J BILLY THE KID

Manchester-based software giant Ocean, has called upon the talents of adventure-game specialist Level 9, to help produce the company's next blockbuster. As you might imagine, Billy The Kid features a strong Western Theme.

The game is similar to many of the Cinemaware games in appearance, and the action sees you as either the young Billy or the local sheriff, Pat Garret. As Billy, you and the rest of the infamous Dolan gang must ride the Wild West, robbing banks, holding up trains and generally creating havoc where ever you go.

If you choose to play the part of Pat Garrett, you'll have to put a stop to the young whipper-snapper's tricks. Billy The Kid will appear sometime in October priced at £19.99. Watch this space!



K INTERNATIONAL SOCCER CHALLENGE

Scheduled for an Autumn release, Microstyle's International Soccer Challenge is the follow-up to Microprose's highly successful soccer game. However, the similarity ends there. International Soccer Challenge is like no other footy game.

We've all seen the side-on and the bird's-eye views, well now there's a game that is played on pitch level. International Soccer Challenge has you playing either in position or as a team. Your aim is to win either the World Cup (the teams of which are taken directly from the last competition) or the Microstyle trophy.

Graphics are a superb mixture of both sprites and solid vector graphics. Available soon on the ST, International Soccer Challenge will cost £24.99.

L MR. DO RUN RUN

The latest coin-op conversion to appear from Electrocoin is our old favourite Mr. Do. Featuring the same cutesy graphics as its arcade parent, the game has been tweaked to include various raised levels. Like Pacman, the basic idea is to collect all the dots from around the screen without being gobbled up by the various monsters. The game will appeal to younger gamesters and should be available towards the end of September, priced £19.99.

M MONTY PYTHON

And now for something completely different... Virgin has called upon the talents of Core Design to bring to life, the zany cartoon characters featured at the beginning of the Monty Python programmes. Graphics are very close to Terry Gillham's originals, and the game is a shoot-em-up-cum-platform romp. You assume the role of Mr. Gumby and try to find just what has happened to the four pieces of your brain. During a routine check-up, your brain cells decided that life was too dull inside your head. They made a run for it and now you have to relocate all of the bits before starting in your chosen career of chartered accountancy.

Monty Python should be available from the end of September priced £19.99.

N SIMULCRA

Calling upon the outstanding talents of the Graftgold programming team, Microstyle is proud to announce the imminent release of Simulcra. The game takes place in a vast fantasy world of solid 3D vector graphics.

Featuring 30 levels, the game has you guiding a tank around the hostile enemy environment. In order to survive, you'll need all your wits about you. Destroy the enemy installations and you'll be awarded with points and a 'special extra' to enhance the capabilities of your craft - for instance, collecting a set of wings will enable your craft to glide over chasms, thus allowing you access to other areas.

Simulcra should appear sometime in October on the Microstyle label. No definite price as of yet, but we'll keep you informed.

A THOUSAND WAYS TO DIE...

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Kinetica

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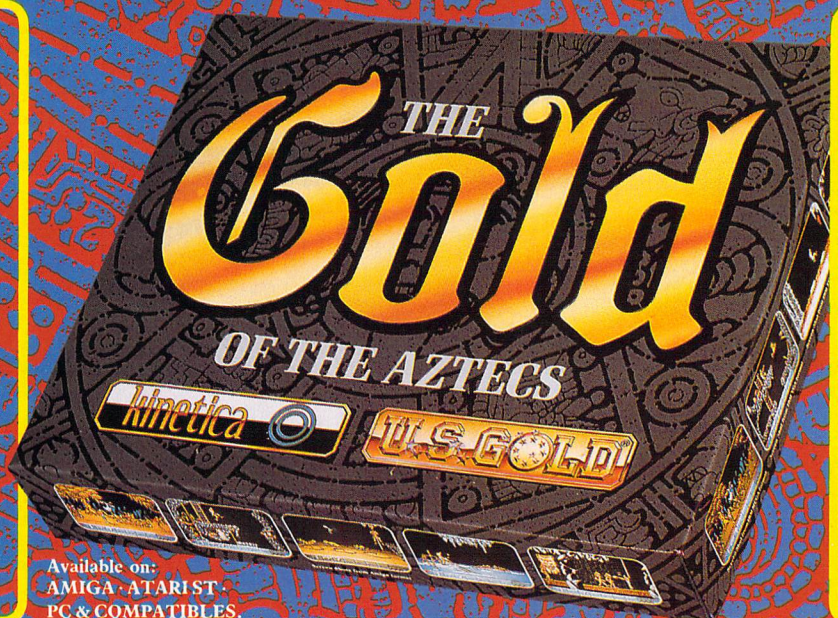

VISIT THE LAND OF THE AZTECS!

We think this game is one of the toughest action adventures ever devised. That's why we're giving away the trip of a lifetime to visit the Land of the Aztecs in Mexico – Summer 1991. To win you have to beat all-comers in THE GREAT AZTEC GOLD RUN!

(See inside box for details.)

Screen shots are only intended to be illustrative of the game play and not the screen graphics which vary considerably between different formats in quality and appearance and are subject to the computers specifications.

U.S. Gold Ltd, Units 2/3 Holford Way, Holford, Birmingham B6 7AX. Tel: 021 625 3366.

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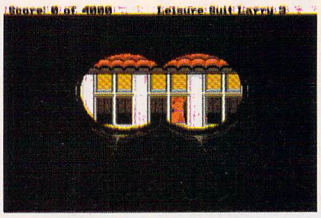
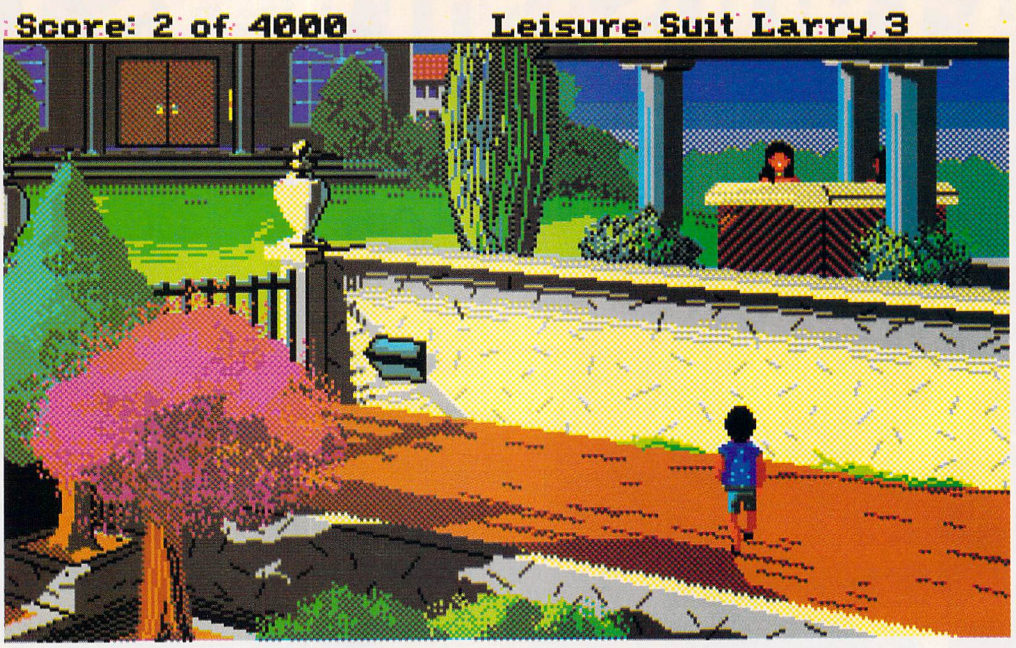


ABOVE: In true Leisure Suit Larry style, you can gain extra points depending on the different perverted things that you can get up to. The first thing that's possible is to spy on a young lady undressing in her flat. Luckily, the nearby telescope provides the perfect view!



RIGHT: Unfortunately for you, your boss also happens to be your ex-wife's father. Not only do you lose your woman but your job as well. To top it all, you are literally bowled over by this news!

LEISURE SUIT LARRY III

House: SIERRA ON LINE Price: £29.99

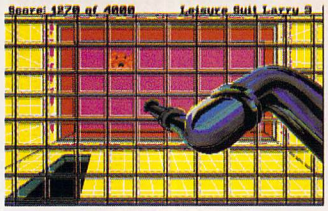
It's time for that 'nerd in the white suit' to reappear in the third in the hilarious Larry trilogy. The original and perhaps best Leisure Suit Larry game had the Moral Guardians up in arms at the sexual innuendo that seemed to be its attraction. However, the sequel was tamed down, and cries came from unhappy game players who demanded more of the humour that featured in the original. Sierra have taken note of these comments and to please the public, Larry is back and in better shape than ever before!

Larry III has the same write-protection system as the first, hopefully stopping minors (not the type that dig for coal!) from seeing the jokes that could corrupt their innocent minds! However, instead of not being allowed to play the game, the level of 'filth' changes depending on the number of questions answered correctly. This means that if only one of the five answers is right, the filth level is pretty damn tame. Three out of five is getting near to the knuckle and five out of five qualifies you for all out perversion!

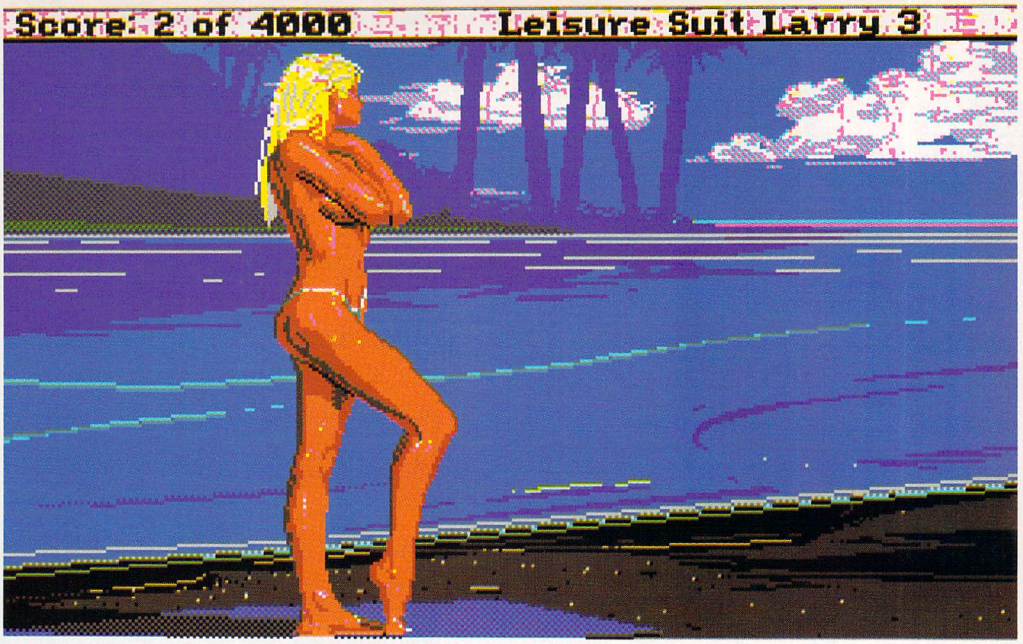
Set on Nontoonyt, the island the second instalment finished on, it seems that you've been abandoned by your wife, Kalalau for an Amazon cannibal slot-machine repair woman! As a result, you lose your job – your boss is also your ex-father-in-law! Being down in the dumps, you must pick yourself up and throw away your Hawaiian shirt and Bermuda shorts in favour of your polyester white suit! Nothing can stop you in your search for

BELOW: The nerd in the white suit is attracted to every woman he sees, and more often than not, he'll attempt to get to know her a little better! Using all of the charm and wit he has, Larry actually seems to succeed more than fail (are we talking about the same guy?)

LEFT: Once you have changed role for that of your alter-ego Patti, you must search for Larry. After collecting supplies, a jungle maze must negotiated before you can once again be united with the love of your life



RIGHT: Larry is surrounded by beautiful women who only need the smallest amount of enticing before they will react to his every whim. Tawni is the girl who sunbathes on the beach, and for a small amount of money, she'll perform for you!



ABOVE: The humour is somewhat near to the knuckle in Larry's third adventure, and as he struts around the shower some people may think the odd 'CENSOR' should appear. However, Larry wouldn't be the same if the pixelised pornography was absent

fame, fortune and, above all, women!

The game begins on a cliff-top overlooking the empire that you created. Tall skyscrapers merge with tropical jungles, the beach and mountains. There are two telescopes perched at the top of the cliff which allow you to look at the view. However, Larry is not bothered about seeing the distant waves lap against the shore. Instead he turns the binoculars towards the high-rise flat and stares in awe at an unsuspecting nude woman! Points are gained by executing rude deeds such as this and believe me, there will be more than a couple of times that you can let the 'Larry' in you shine through!

It seems that the first two adventures proved a little too much for our hero and middle-age spread is taking over. Obviously, this makes him less appealing to the female species so it's a good idea to visit Fat City, the island's only health club. Once inside, your worst nightmares will come true as you'll have to pump iron with the motto, 'no pain no gain' in mind!

To raise your spirits you can visit The Comedy Hut where Paul Paul will attempt to make you laugh with jokes concerning your favourite ethnic minorities. There is also a Casino to keep you amused, but instead of playing on the one-arm bandits, you decide to watch the cabaret including Cherri Tart instead. With only one set of clothes to your name, you must try and make some money or at least gain a little cash in some way. You don't have to resort to selling you body, but a quick look in your mail box or a visit to Dewey, Cheatem and Howe, the local attorneys, may prove useful.

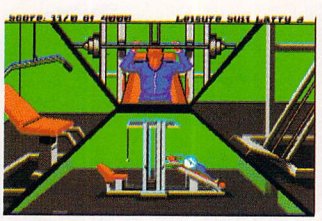
Instead of having a code wheel or some other sort of code protection inside the packaging, a Nontoonyt Tonite guide to the island holds indispensable clues to parts of the game that would be impossible without it. As with all of Sierra's recent releases, it's compatible with a Roland MT-32 or other sound module thus creating brilliant sound that's sure to impress.

The main difference between the third installation and the other two is the fact that you change roles from Larry to Passionate Patti halfway through the quest. Patti has the tough task of retrieving her lover from the clutches of the native Amazonian cannibal, if she's not quick enough, he'll be turned into a sex-slave for the rest of his days!

In my opinion, the Leisure Suit Larry series is by far the best set of adventures by Sierra, as they successfully combine humour with a tricky, long term quest. Everything is highly polished and the graphics are colourful and well defined. Thankfully, my main gripe with the other two – the hands-off sequences, has been rectified as there are less of them and any that are included are either short or can be skipped completely. With the increase of humour in both the game and the manual, this is the best in the series and possibly the best game from Sierra to date.

TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 84%
SOUND: 78%
GAMEPLAY: 82%
OVERALL.....83%



ABOVE: It's obvious that Larry could do with a few session in Fat City, but it seems that he only has a single chance. However, a tough work-out should hopefully tone up his muscles and dispose of the excess fat

LEFT: As in the original, The Comedy Hut is a place where you can laugh out loud at the joke told by Paul Paul about your favourite ethnic groups. You only have three choices so don't waste them!

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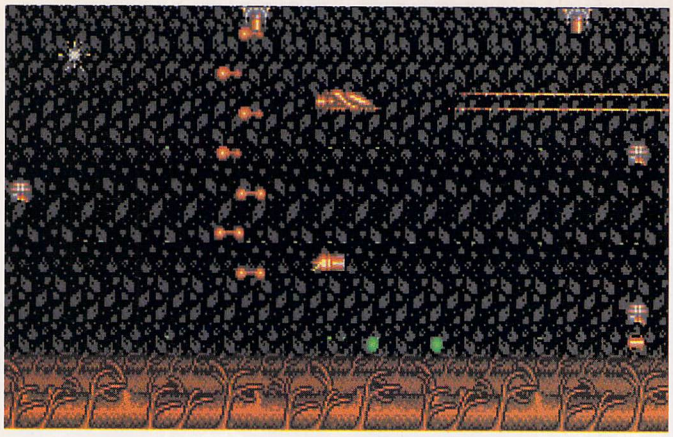
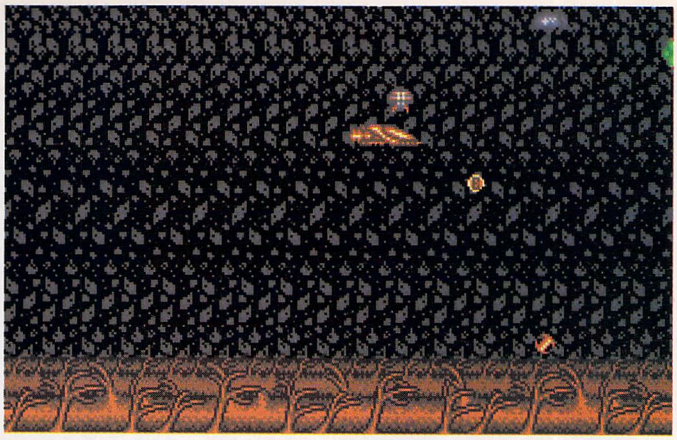
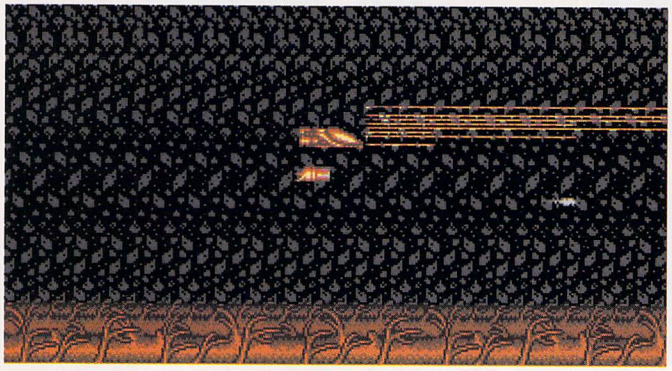


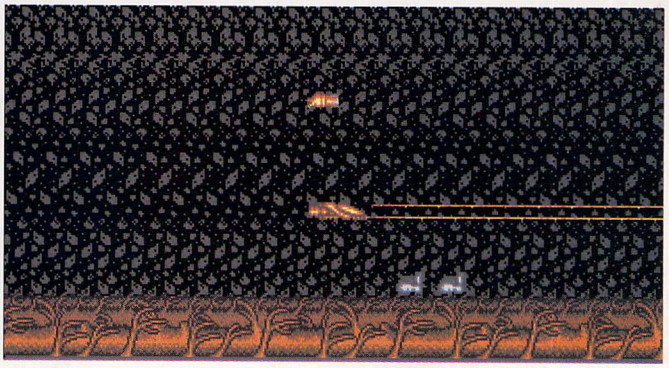
As the game progresses and the action becomes thicker, you'll wish that a handy outrider cannon was at your disposal. These weapons release balls of plasma that nuke the enemy if contact is made - awesome!



The key to increasing the power of your ship is collecting small tokens left by destroyed alien ships. Orange tokens increase the laser fire for a short period, green coins add an outrider cannon and blue rewards equip your ship with twin lasers



The laser that comes as standard on your interceptor is rather puny - a single laser is no fun at all! However, it's possible to boost the streams of death by destroying the oncoming craft



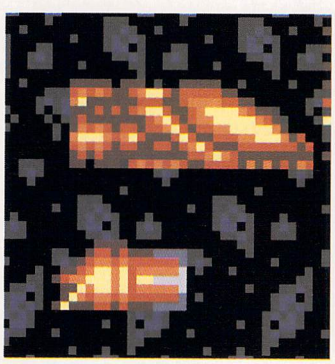
The objective of Anarchy is to rescue all of the unfortunate fellows on the planet's surface, as they are constantly in danger from the invading species above

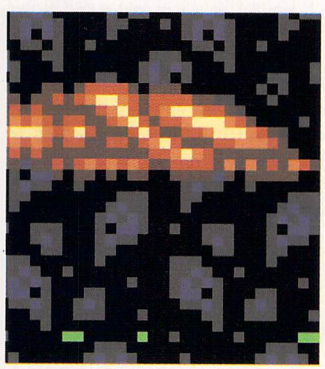
TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 74%
SOUND: 72%
GAMEPLAY: 76%
OVERALL.....75%

ANARCHY

House: PSYGNOSIS Price: £19.99





It would be an easy mistake to make to think that Anarchy is Defender - basically, it is. Thankfully Psygonsis don't try to hide the fact, and therefore Anarchy benefits from it's likeness to the classic coin-op.

Even the storyline follows closely to the original - the planetary status is critical, and the high loss in manpower means that law and order is almost impossible to uphold.

To add to the mayhem, large waves of aliens have launched an attack on the dying planet and are concentrating on important personnel - they need to be saved and quick.

Although the similarities between the two games are somewhat uncanny, Anarchy is a new kettle of fish altogether.

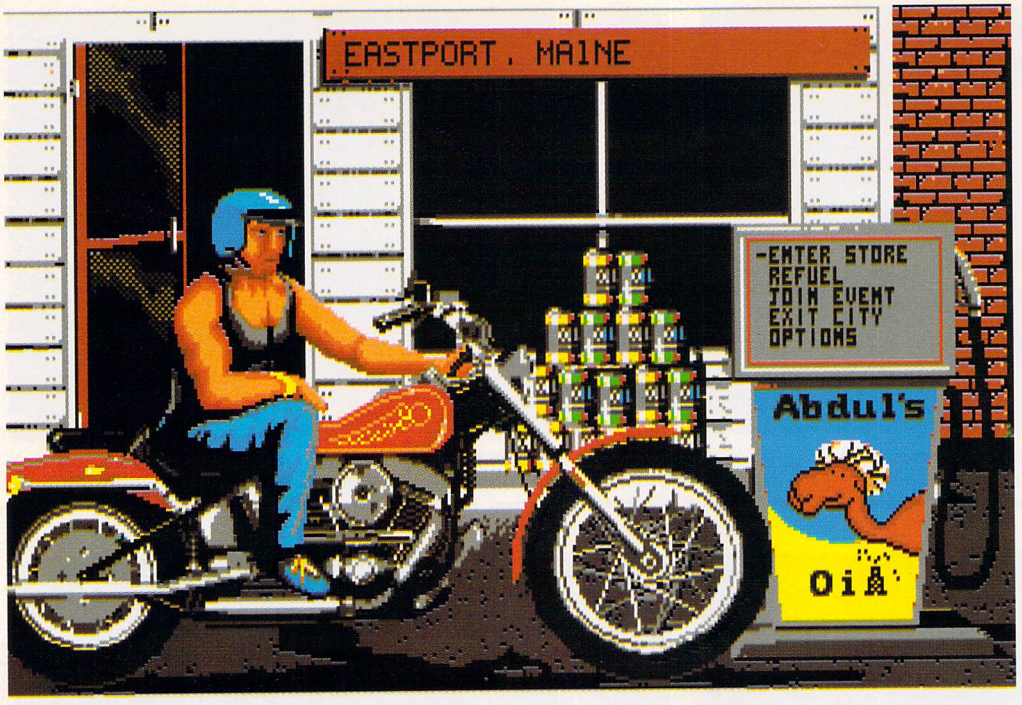
Most other Psygnosis games feature large sprites that have been beautifully drawn and animated, and also stunning backdrops that are bold and colourful - this is where Anarchy is different. The excellence in graphics has been dropped in favour of addictive gameplay and fast 'n' furious action. The sprites have been miniaturized, making the gameplay stand out.

The basic objective of Anarchy is to rescue the people of the planet before they are taken by the enemy. Previous versions have been slow in comparison to Anarchy's 50 frames per second speed, four levels of parallax and up to 50 colours on screen! Add to this a possible 80 aliens all running around the screen and you'll be left with utter chaos.

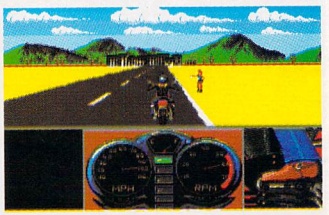
There are two levels of difficulty in Anarchy - expert and novice. The difference between the two is that inertia is experienced when playing at expert level. Without the use of your air-brakes, it'll be much harder to concentrate your fire when approaching your target - mastery of the joystick controls is the only answer.

Your interceptor can only fire its single beamed laser from the front of the craft, but it's possible to turn tightly to destroy an alien attack from behind. As an extra aid bolt on more weapons, such as boosted laser beams and outrider cannons, as well as temporary invulnerability.

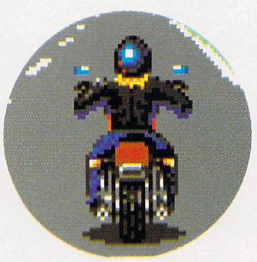
Who said Defender clones were past it? The action in Psygnosis is furious, and although the graphics are simple, they are effective - anyway who's going to notice when the game's running at 50 frames a second. It may take a while to get to grips with the rather awkward joystick controls, but perseverance will unveil a game not to be missed by anyone wanting a good blast.



RIGHT. You begin the game outside one of the stores at the start of the ride to Sturgis. You can refuel here, enter an event or enter the store shop and purchase something



ABOVE: There are numerous events to choose from, although there's only one event per town. Here we see the poker run where you must take cards from the card-handers. The rider with the greatest hand wins



HARLEY DAVIDSON

the road to sturgis

House: MINDSCAPE Price: £24.95

Sturgis is a little town located off highway 190 in the Black Hills of South Dakota. Everyone's gonna be there, but a word of warning: keep your eyes peeled for the pigs – the road to Sturgis is crawling with 'em. Burn rubber only when you're absolutely sure that there are no cops about. Good luck...

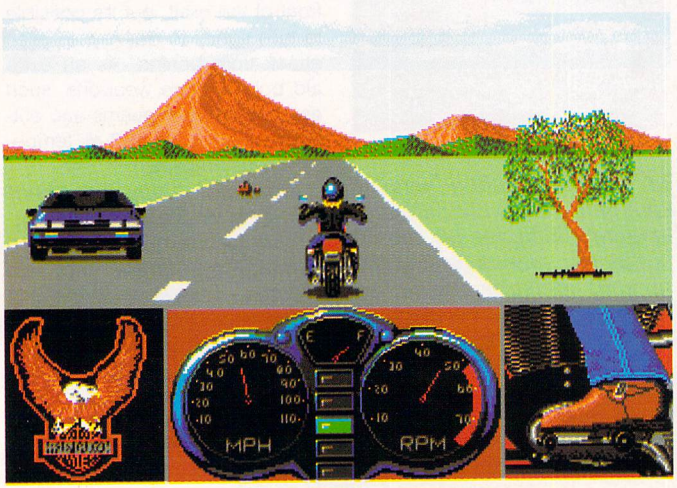
Before you can take part in the trek to Sturgis, you'll have to create a character in the style of a character in a role- playing game.You'll be asked for your name and exactly how much experience you have – whether you're baby-faced or rugged.

Provide a name, and you'll be able to decide on the skills your biker has. These are riding, mechanical know-how, brawling, charisma and wealth. Points are allocated to these individual skills and can be either raised or lowered as you desire. You only have a certain points total and you won't be able to exceed this amount.

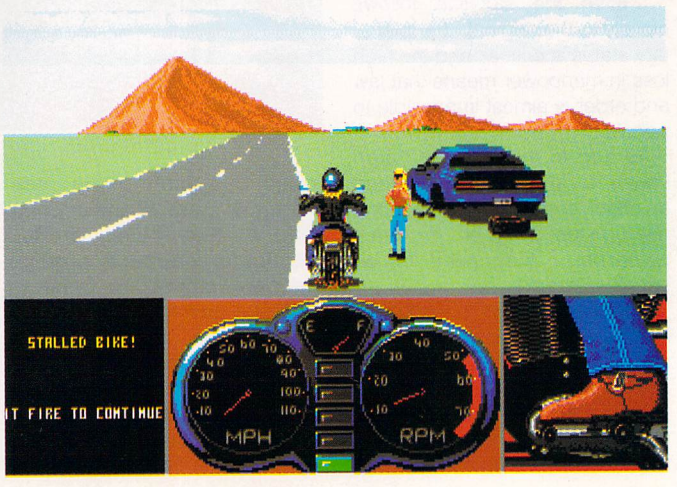
You begin the ride outside one of the many towns that dot the road to Sturgis. Your first port of call is the store and on entering, you'll find yourself in a bikers' dream-world.

The shop is absolutely littered with bike hardware and other

BELOW: The roads are full of hazards such as logs, puddles and rocks but the most deadly has to be the motorist. If you travel too slowly then they will knock you off the road



BELOW: If you don't pull yourself a chick along the way then you will be laughed at by the other bikers. There are plenty of girls stranded along the road but picking them up can prove difficult



novelty goods. Items are purchased by moving the screwdriver pointer around the shop and selecting the required item. A more detailed display of the object will appear, and you'll be given the option of either buying the item or selecting a new one.

Each product is individually priced and the total spent will be deducted from your wallet. Jackets, helmets, boots and add-ons for your Harley can all be purchased here. There are other novelties to choose from, including animal pelts, sunglasses and tattoos. To exit the shop select the welcome mat.

Once outside the store, there's a choice of what to do next. Maybe you should refuel or even enter an event. Visit each town, and you'll be able enter one event. In the poker run you're required to race to the finish line while snatching cards from card-handers positioned along the side of the road.

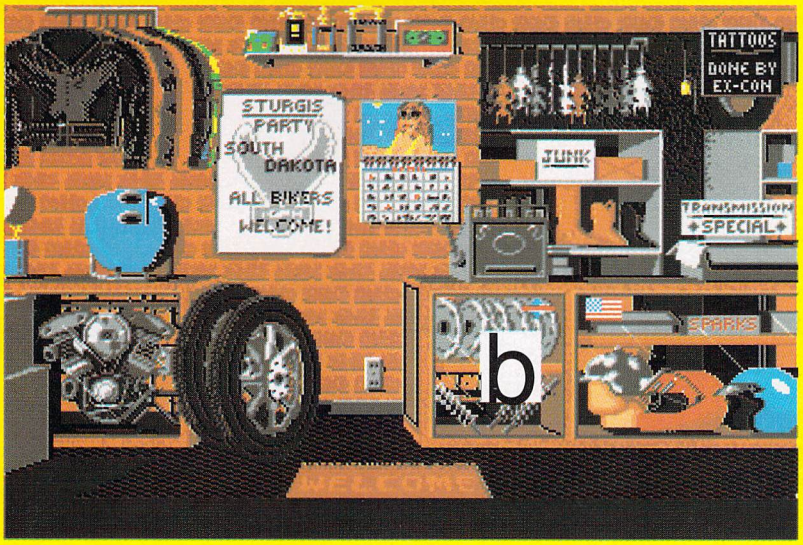
The weenie-run requires your girl to stand up on the bike and eat sausages that hang from bridges. Do well and you'll be awarded a cash prize.

From here take to the road and make your way to the next town. The Harley is controlled with the mouse – the left button controls acceleration, while the right button switches through the gears and to brake, use the space bar.

You can travel at whatever speed you wish, but it may be wise to keep to the speed limit of 65mph, otherwise you may bump into a smokie and be given a ticket. You can choose to try to bluff your way out of the fine, but you won't be lucky every time.

Roads are full of hazards, and as well as other cars, you'll have to watch out for debris on the roads. Logs, puddles and rocks will damage your Harley Davidson and should be avoided at all costs. Along the way you will find stranded motorists on the side of the road - girlies! Pick a chick up by cruising up to her and braking just in time, she will then leap on to your bike.

I can definitely see Harley Davidson appealing to all motorbike fans and pre-pubescent boys. The game has been beautifully presented with colourful and humorous graphics that move smoothly and convincingly through the play area.

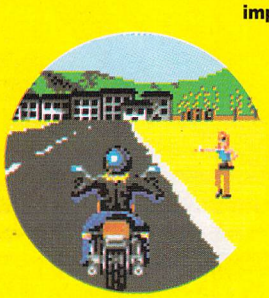


LEFT: The store – a bikers' paradise

RIGHT: A leather jacket to keep off those chilling winds

LEFT: A more ridiculous looking helmet is difficult to imagine.

RIGHT: A fuel tank with meaty looking flames is bound to impress



TRIED AND TESTED:

REVIEWER: .....STEVE
GRAPHICS: 80%
SOUND: 72%
GAMEPLAY: 83%
OVERALL.....85%

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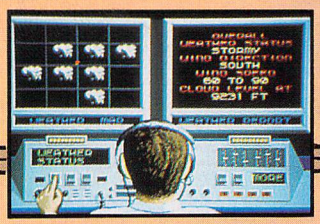

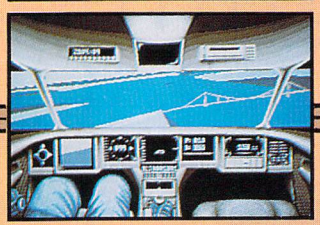

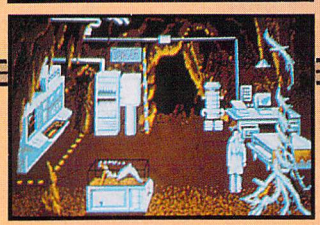

Mean Streets

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- Use the innovative 'point 'n' click' system which enables you to search without typing.
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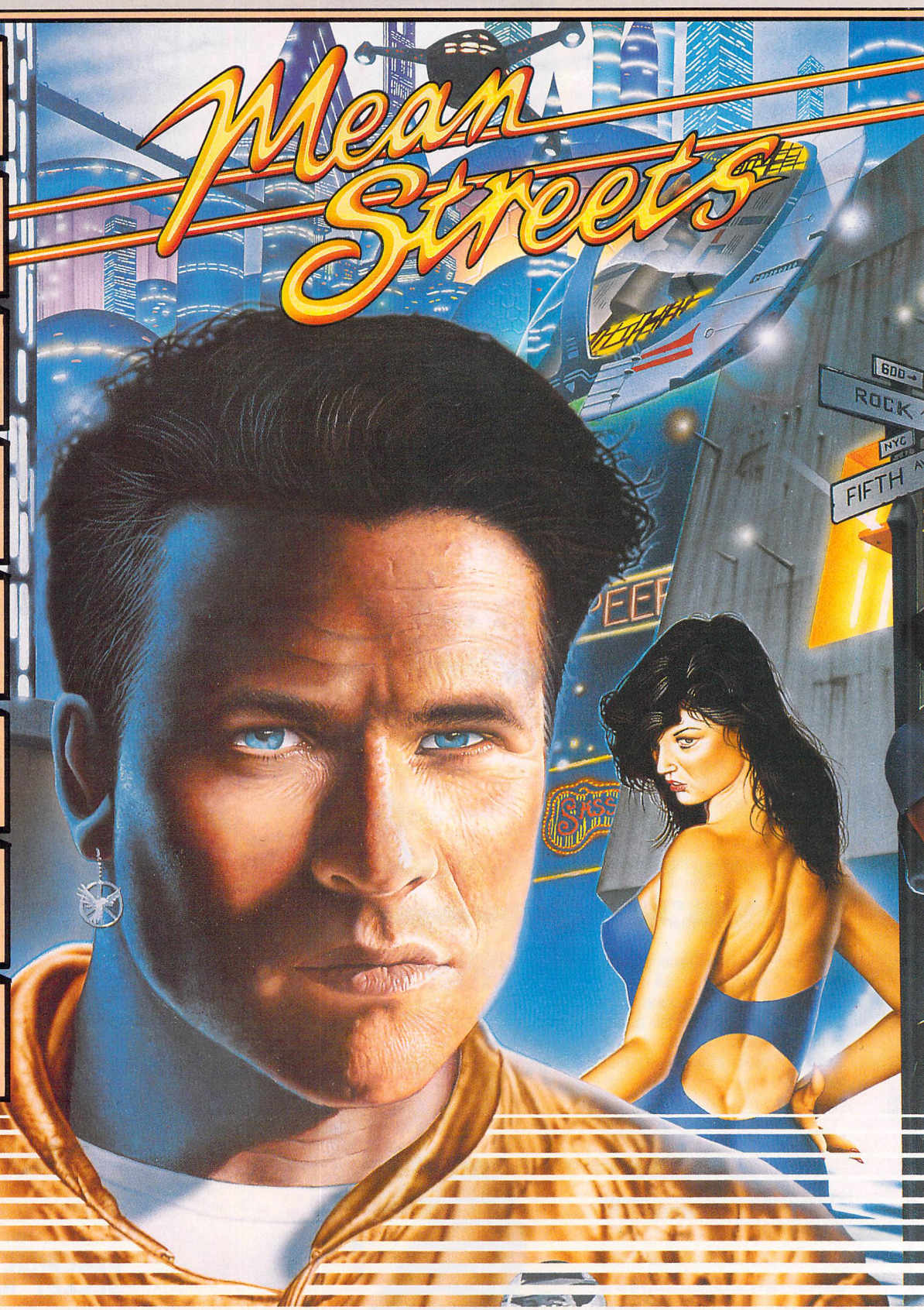

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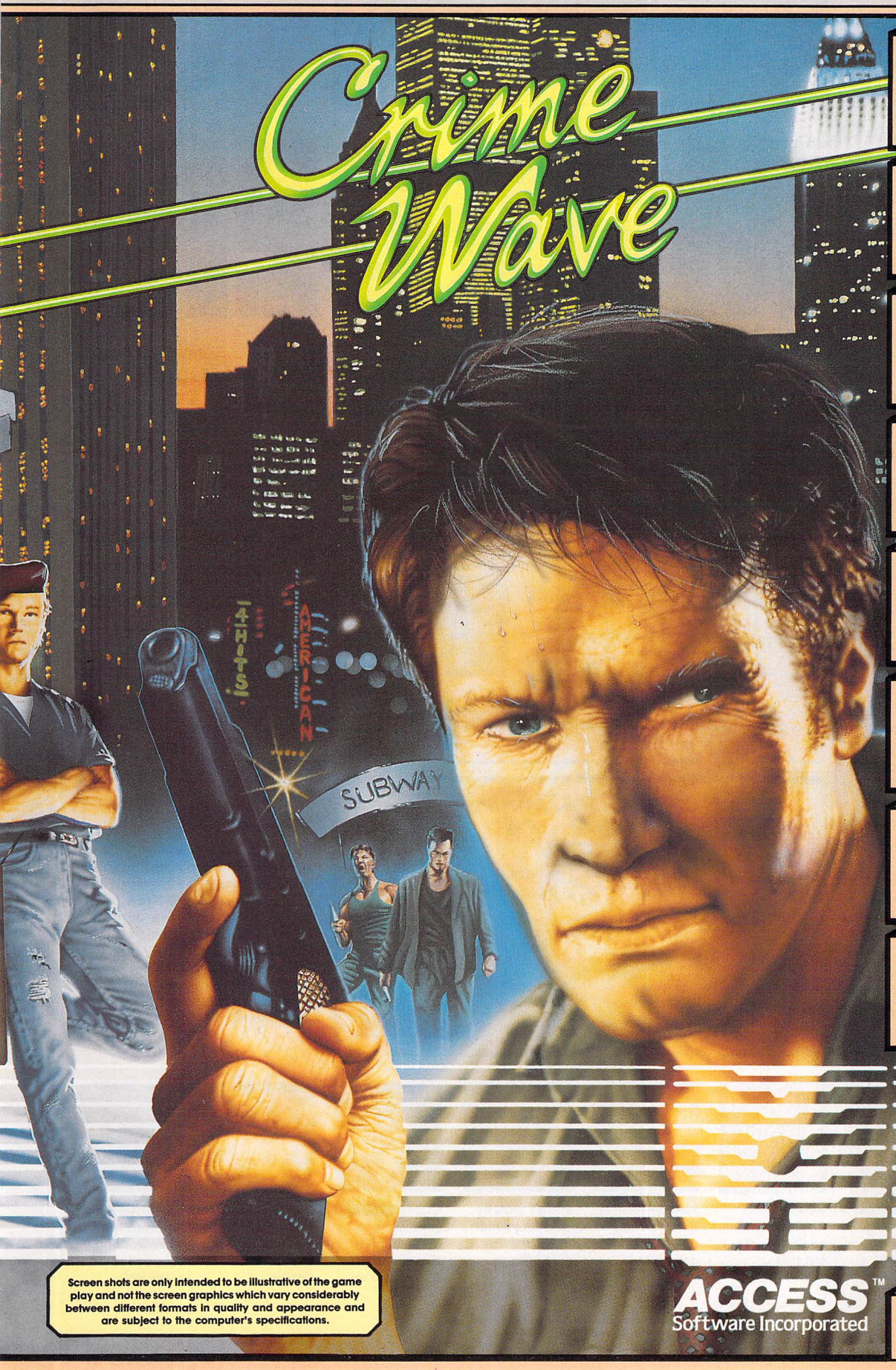

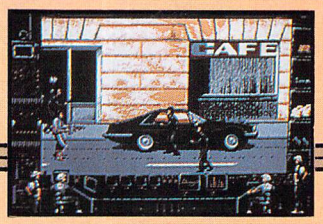

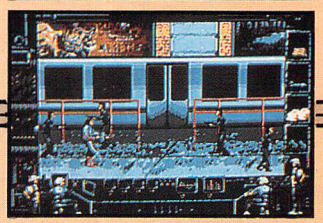

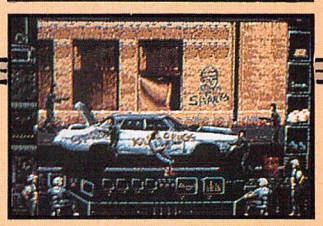

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- Tremendous depth and playability.
- Breathtaking 256 colour VGA/MCGA graphics.

Screen shots are only intended to be illustrative of the game play and not the screen graphics which vary considerably between different formats in quality and appearance and are subject to the computer's specifications.

ACCESS™
Software Incorporated

A cold blooded murder has been committed at Spookhill priory, and you've been asked to join a selection of guests to find the murderer, before Scotland Yard arrives in two hours. 3D Isometric action is the flavour of Murder, with each room being depicted in grey and usually holding a host of vital clues, such as weapons or guests all revealing information.

Murder is in similar vein to the board game Cluedo, making you the star of the game. The objective is to solve any of the possible three-thousand murders that could be committed. The front page of the newspaper is in fact a menu screen, with the various sub-headings being interchangeable, thus creating a new scenario.

Murder is run entirely by the mouse, and in turn, the icons on screen. By clicking on the various symbols, you can make your amateur sleuth pick up and examine icons, write down notes, question unsuspecting guests and even throw the book at the suspected killer.

Clicking on the right hand button will flick from the magnifying glass to the movement cursor. The magnifier is simple to use, by placing the lens over the object you wish to see, you'll be given a detailed description of the item in question. The cursor is self-explanatory, and allows our case-cracker to move freely throughout the rooms of the many granges, manors and mansions that he'll travel to.

The guests present at the house are prime sources of information, as are the weapons which are scattered around. Ask these people questions that are based around a certain person or a group of people, a weapon or a weapon in conjunction with a would-be assassin.

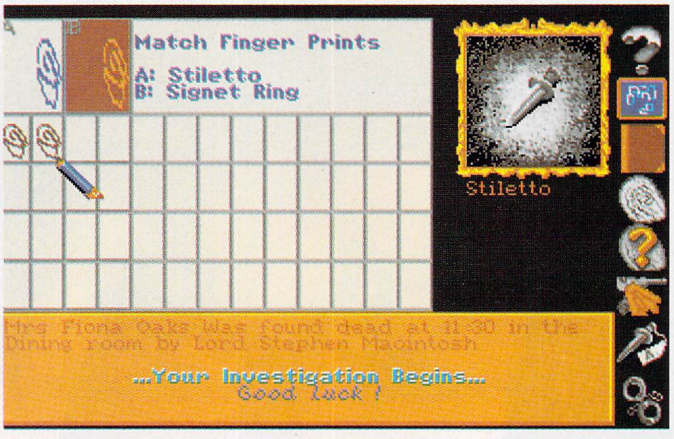
After a few laps of the mansion you may think you're ready to make the accusation. Make sure the suspected murder weapon is in your possession, then simply confront the man or woman of your choice. You'll only know if you're correct by reading the front page of tomorrows paper!

Murder certainly is an acquired taste. Stick with it and you'll probably be surprised with

LEFT: You begin your search where the last clue was left - which obviously is the victim's lifeless body. It appears the poor person was brutally stabbed in a cold-blood, and the killer is still on the loose

MURDER

House: US GOLD Price: £19.99



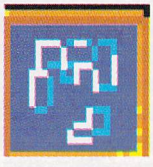
LEFT: Using the sleuth kit you brought along take a print from the dagger's handle. Hopefully, vital information can be gained from the print, you can compare these with other prints taken earlier

LEFT: Consulting your note book, it seems this lady was arguing with the deceased before the crime was committed. She informs you that she will now inherit a large sum of money, and to top it all, her fingerprints match the ones left on the knife - she must be the murderer! Tomorrows paper confirms your deductions.

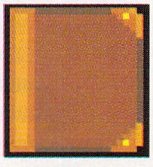
TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 78%
SOUND: .....N/A
GAMEPLAY: 82%
OVERALL.....81%

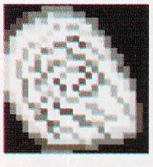
QUESTION MARK: This icon allows you to question anyone



MAP: Automatically notes down any rooms that you've visited



NOTEBOOK: No detective could be without this...



FINGERPRINT: Examine any object for fingerprints...

PRINT BOOK: Allows you to compare any two sets of prints

CLOTH: Wipe your weapon clean- you'll then notice if it's picked up

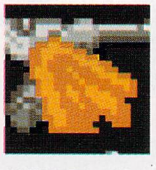


EXHIBIT: Use exhibits against suspected murderers

HANDCUFFS: Confront the murderer and slap on the bracelets

THIS TIME THEY'RE OUT TO GET HIM!

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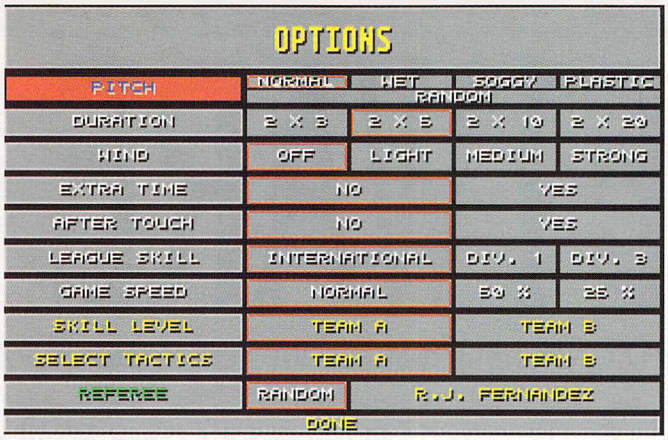
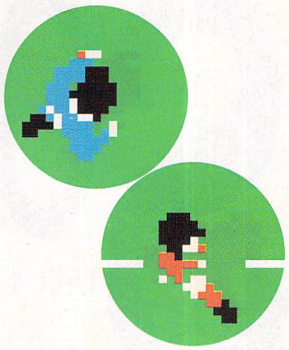




RIGHT: There are a wealth of new options included in Kick Off 2. As well as being able to change the weather conditions you can also alter the pitch surface to suit your needs

KICK OFF 2

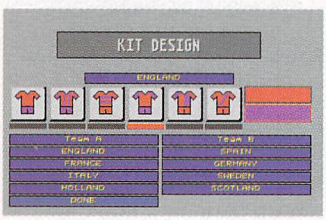
House: ANCO Price: £24.95

While the World Cup football games were snatching much of the limelight lately, it seemed that software houses were releasing one footie sim a month. But now the euphoria has died away, we can gather our senses and take a serious look at probably the best one to emerge – Kick Off 2.

The sequel to the hit original has been enhanced in many ways and Kick Off 2 has to be the best footie game around at the moment. On loading up the game you're presented with an easy-to-use menu system offering several options before you begin your game. You can choose the weather conditions for your game, how long you'd like the game to last and even the skill level you want to participate at.

The practice option is ideal for those of you who have never experienced Kick Off before. The practice session allows you to test out your passing and trapping skills without being harassed by the opposition. You can also select from various weather and pitch conditions and although these won't be visual changes, they'll affect the way in which the teams play. Plastic pitches will make the football bounce higher, while water-logging will make the ball stick and reduce the bounce.

The enhancements come in the form of extra time. If the game is tied at full time then extra time is allocated, if the game is still a draw after this then the result must be decided on penalties. Exciting stuff, eh?



ABOVE: If you're not content with the look of your team, enter the strip editor and choose your team's colours from a wide range of different footie kits

BELOW: On charging up the pitch pass the ball to your attacker who shoots. GOAL! You can now review both build up and goal on the replay option. You can even save your goals

BELOW RIGHT: Be careful where you foul your opponent, because you may give away a penalty.

Each team member now has his own skills and if one isn't performing too well then he can be substituted. There are several levels of play – ranging from fourth division players to the top class internationals. Likewise, there are several different speeds at which the game can be played. The slower option is useful if you wish to play a slower and more tactical type of game with sweeping passes. There are some new kicks that can be used – banana shots and scissor kicks can all be played now. Enhancements have also been made to dribbling, heading, shooting and tackling.

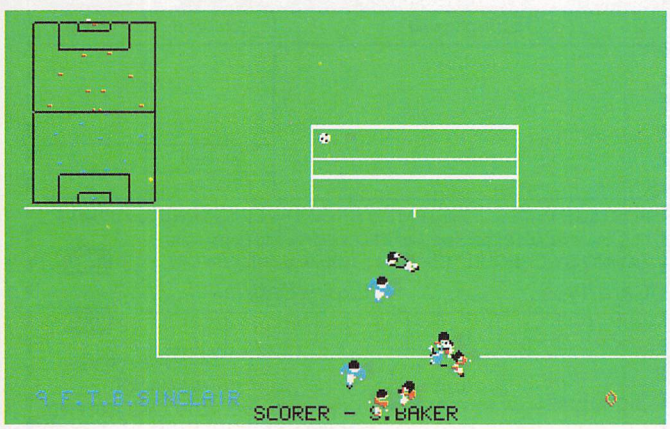
The game is accompanied by a 1990 World Cup league. This allows players to re-live the events of Italy and even change the outcome. Also included is the option to load other special events which Anco will no doubt be releasing in the near future. Until then, you'll just have to play this to your heart's content.

If you've never played the original Kick Off then you won't realis what you've been missing. Fortunately, the sequel offers a larger variety of options to enhance the original, and if you're a fan of footie games you'd be a fool to miss it.

The control system is easy to use with a wide range of different moves and tactics that are easy to pick up and implement. It would have been nice to see a little more pitch detail with perhaps a few weather effects, but this minor gripe in no way detracts from an otherwise superb game. Miss it at your peril.

TRIED AND TESTED:

REVIEWER: .....STEVE
GRAPHICS: 83%
SOUND: 75%
GAMEPLAY: 90%
OVERALL.....92%



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STU10

ABOVE: You are presented with a choice of decks as well as a selection of six different games to play. Each one is detailed in the manual, as well as onscreen, allowing you easy access to the rules

RIGHT: Sierra have included eighteen opponents to choose from and play against, ranging from the designer's family to the quest stars such as Roger Wilco

TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 69%
SOUND: 67%
GAMEPLAY: 66%
OVERALL.....69%

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House: SIERRA Price: £24.95

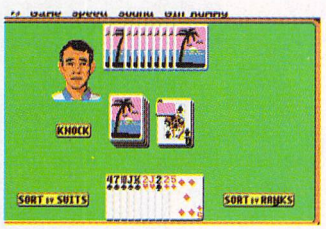
Sierra have turned their attention from their usual 3D quests to card games. They are concentrating on simple games that should please the young and the old alike and make the card sharks out there go crazy. Worry no more if you like a quick game of cards but are fed up with playing patience on your own. Instead, you can boot up your ST and choose your favourite Sierra character to play against. You can also choose any of the six games to play – fun, eh?

To begin with, you must make the all-important decisions, choosing the colour and pattern that will grace the back of the deck. This makes no difference during the game, as the cards are not marked in any way! Next you select one of the six games available – Klondike, Crazy 8's, Solitaire, Gin Rummy, Old Maid, Cribbage and lastly, that old favourite, Hearts.

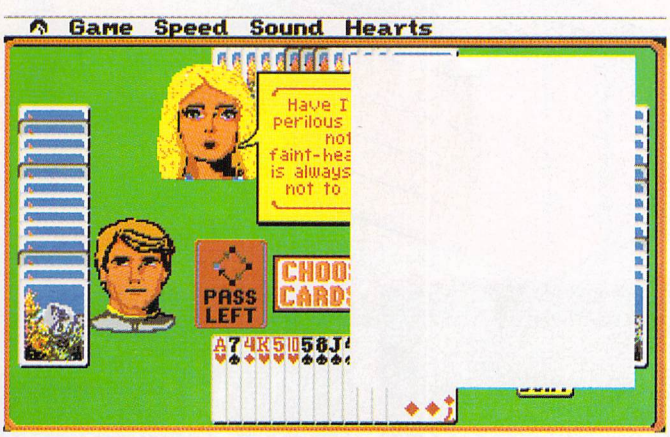
Each game can be played by more than one player (apart from Solitaire), but sadly your opponents can only be controlled by the computer. After you've selected the game you want to play, you must decide which player/players to compete against. There are eighteen different opponents to choose from all with different skills, weak spots and good points. They range from famous characters like Leisure Suit Larry who is not worried if he loses or not (he's more worried about what happened with him and the girl he met last night!), to the more difficult – the games designer who is a bit of an ace (no joke intended!) with the cards.

Each game is detailed both in the manual and on the pull-down menus, allowing you to brush up on the rules of a game whilst in the midst of the action. If you make a wrong move or leave the cards for a while, your opponents will inform you that you've done something bad or they'll start talking between themselves. For instance, Rosella from King's Quest fame likes to brag about recent quests and how she has many more years of exploring left in her. Their facial expressions also give away what they are thinking. If you have a run of bad luck a large grin will appear on their faces, but at the slightest hint of a poor hand, they will grit their teeth and curse in disgust!

Hoyle's Book of Games is a change from what Sierra usually do. Branching off into a new style of game has shown that they can produce something more than an adventure. However, Hoyle's didn't really shine through for me. Although I enjoyed playing against the different characters, I found the game too easy, and one that I think will appeal more to the younger generation.



ABOVE: Play your turn by simply clicking on the card you want to use and then on the deck or icon
BELOW: If you leave, your opponents will chat among themselves.



Apprentice

Zolo, an apprentice to the Master of the Guild of Magicians, is young, talented and wise beyond his years. Though he has another 400 years of apprenticeship to serve,

Zolo has given glimpses of brilliance. His reward is a chance to enter the Guild provided he can cross the bewitched and dangerous world of Fumo, the dragon. The world of Fumo is colourful and full of cute but intelligent inhabitants. There are many hidden levels and rooms which can only be entered after solving different puzzles.

Zolo will need all his guile, wit and mastery of his craft to solve the complex puzzles. His youth and agility will be an asset as he journeys through the bewitching colourful land of Fumo. An arcade adventure full of colour, superb graphics and intrigue, to grip your attention from start to finish.

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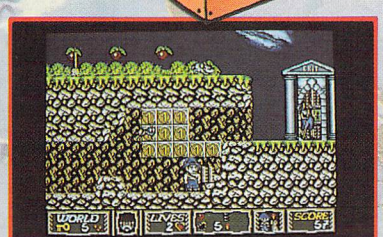

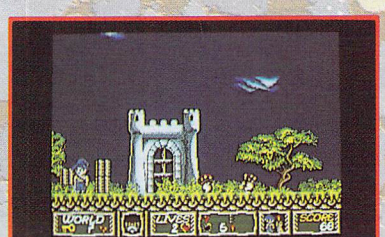

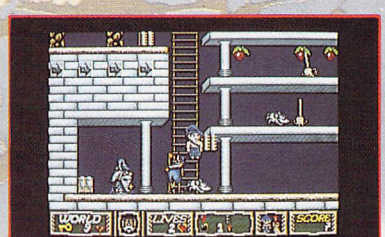

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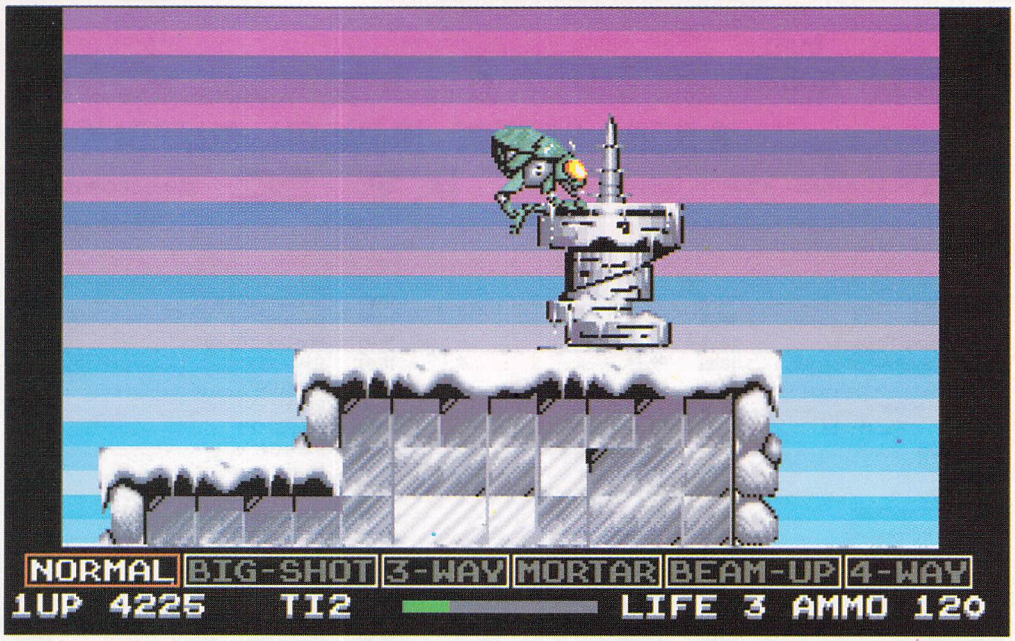
RIGHT: As a rest from the alien hordes on the ground, a bonus screen between levels allows you to attack the enemy. Time for air-to-air combat!



BELOW: Being built of a mixture of steel and other metals, Venus is one tough cookie, and more than a match for any single opponent. But they over-looked the problem of having more than one opponent – oops!

VENUS

House: GREMLIN Price: £19.99

The world's most topical issues at the present time are, of course, the depletion of the ozone layer and other 'green' subjects. Everyone likes to think that they are helping to save the planet by using bottle banks or buying recycled goods, but that still doesn't stop endless quantities of pollution being pumped into the atmosphere, or halt the destruction of thousands of square miles of precious rainforest.

Gremlin have taken note of these issues once again (their last 'green' game being the litter-clearing Skidz) their new release is Venus – a combination of furious shoot-em-up action and platform-to-platform jumping!

Set in the future, Venus takes place after the world has been destroyed by the ignorance of the human race. Apparently, we ignored the advice to stop damaging our planet and finally, of course, the inevitable happened.

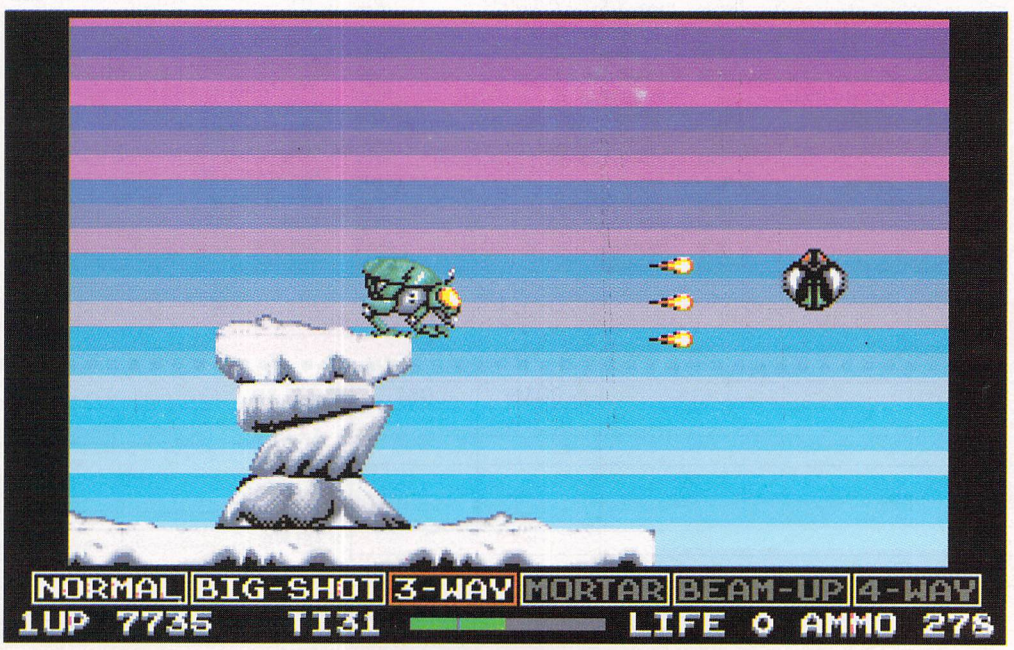
However, a few scientists who had survived attempted to rebuild what had been lost, in the hope of creating a better world. Many ideas were thought up, most of which failed. Finally they came up with a brilliant idea – to release a swarm of flies to restore the balance of nature.

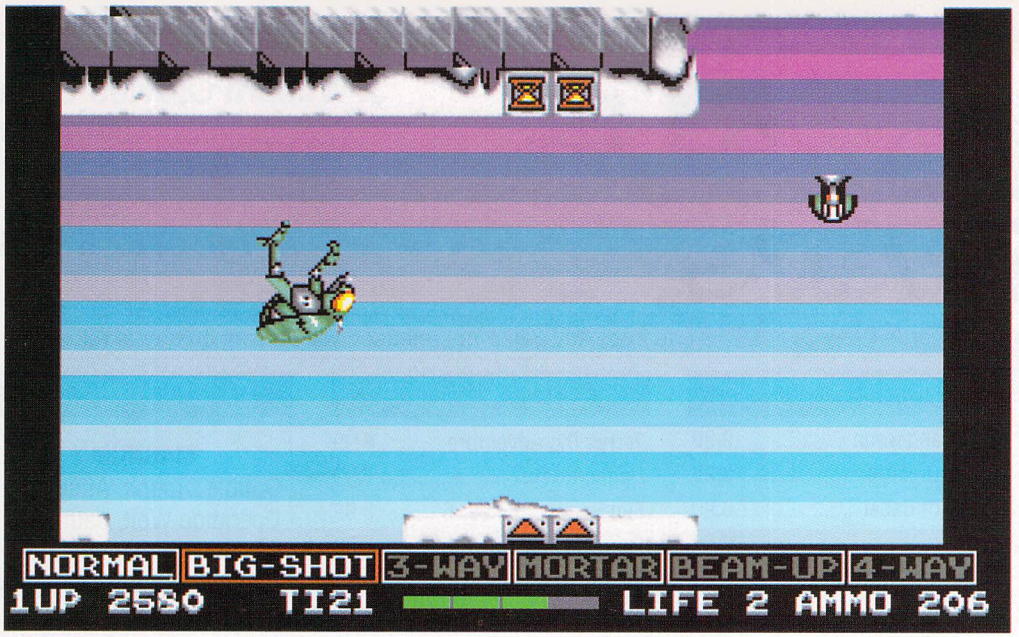
But when everything was beginning to go smoothly, disaster struck once more. The flies were affected by a mixture of chemicals and they turned against the unfortunate professor, changing dreams to nightmares. There remained a single hope – a mechanical Venus combat fly which had been made for emergencies. It's up to you to take control of the Venus fly, taking it out over the plains and desolate wasteland that once was Earth.

Set over fifty levels, Venus -The Flytrap includes ten different types of terrain to battle through, ranging from an ice age to a wood world. Each requires excessive fire button-tapping

Venus has been set over a number of different levels, and more notably, terrains. These range from the cold ice age, to a totally different wood world that features, yep, loads of chipboard! Thankfully, the fly can adapt well to the differing climates and never shows a sign of giving up

RIGHT: There are various insects that need to be dealt with, but the one thing they have in common is the fact that they want you dead. Hopefully they shouldn't be a match for you though, especially as you are the only remaining hope for the few humans left

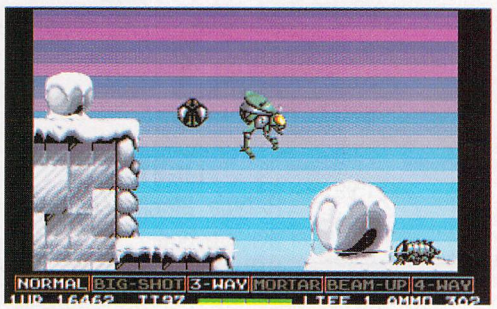




LEFT: Thankfully, Venus doesn't get dizzy if he moves too quickly, and when he jumps upside-down, it's enough to make your head spin. However, you must keep your wits about you and above all keep blasting the oncoming myriad of creatures

TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 86%
SOUND: 82%
GAMEPLAY: 84%
OVERALL.....85%



Certain power-ups give our mechanical friend the ability to sprout wings and take to the air. This is handy when trying to cross chasms that are too wide to jump

Unfortunately, our hero is not invincible and it only takes a few shots before he fuses his circuits and blows up! Luckily, you are blessed with a number of lives and the battle will soon recommence

and joystick waggling in a desperate battle to the end – be it yours or theirs!

Help is at hand, numerous power-ups in the form of metallic balls can be collected. Begin with a single-beamed laser, but soon a deadly four-way photon thrower could be in your possession. To add to the pressure, each level is set against the clock, and failure to complete that level in the time given results in Venus exploding, and another precious life is lost. However, some opponents leave behind small alarm clocks that add extra time to your depleting time-limit.

Venus can take a number of hits before being destroyed, and every time it receives a wound, a certain amount of life force will be knocked off the energy bar. The result of this,besides losing energy is the fact that extra weapons will be lost which may have been collected along the way. An energy recharger could save you by replenishing the best weapon Venus was previously equipped with.

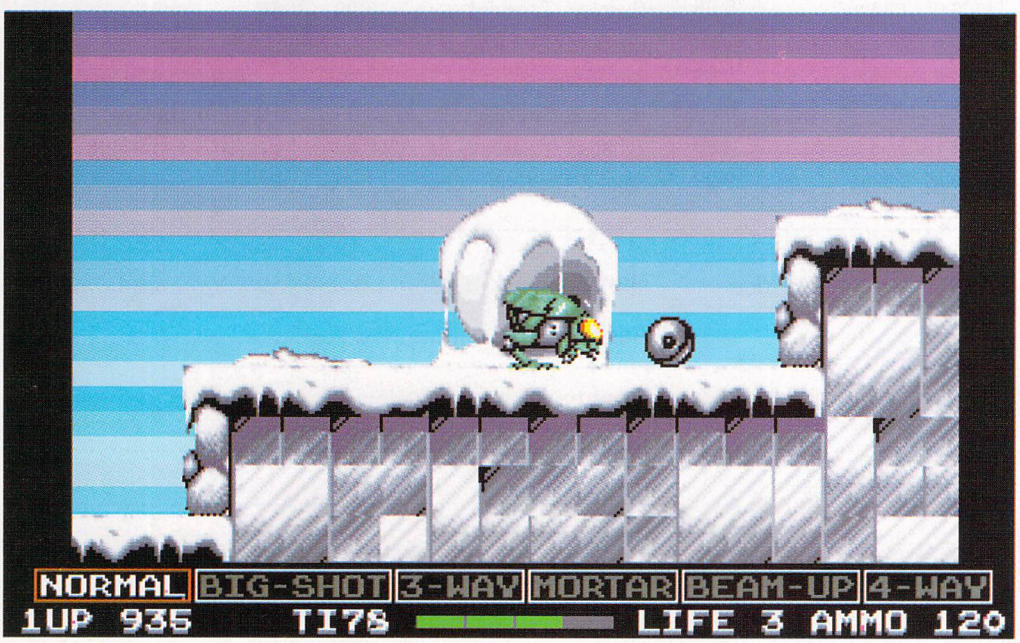
As well as the shoot-em-up element of the game, Venus is also a platform romp rolled into one. You may think that because Venus is a fly, it can fly – however the weight of the steel armour plating on the fly has to be taken into account. It is still possible to leap around the screen, with special pads giving you extra bounce thus aiding you in your task – odd behaviour for a fly if you ask me!

Venus also allows the world to be literally turned upside-down, throwing the poor fly onto the ceiling. This means that to jump you'll have to pull down, but apart from that, everything remains the same – just the other way up. Also small egg timers have been built into the ground. When stepped on, they reduce the time limit considerably.

If you are incredibly lucky, Venus could stumble across a secret door leading to a hidden bonus screen. Here all sorts of goodies can be found to improve the fly's weaponry. These rooms prove particularly useful later.

Manage to finish a level? then a huge bonus will be added to your score and a short break will be allowed to enable you to rest your aching fingers. But Venus cannot rest for too long, because between each level is a shoot-em-up stage that allows even more havoc to be created.

Gremlin are definitely going from strength to strength lately. Venus is a brilliant arcade quality game that proves to be a winner and a first-class piece of software that shouldn't be missed.



LEFT: Our mechanical fly can use all the help he can get, help which comes in the form of power-ups which are released by dying foes. Forget the enemy, grab that extra weapon before you bite the dust

Castle Software

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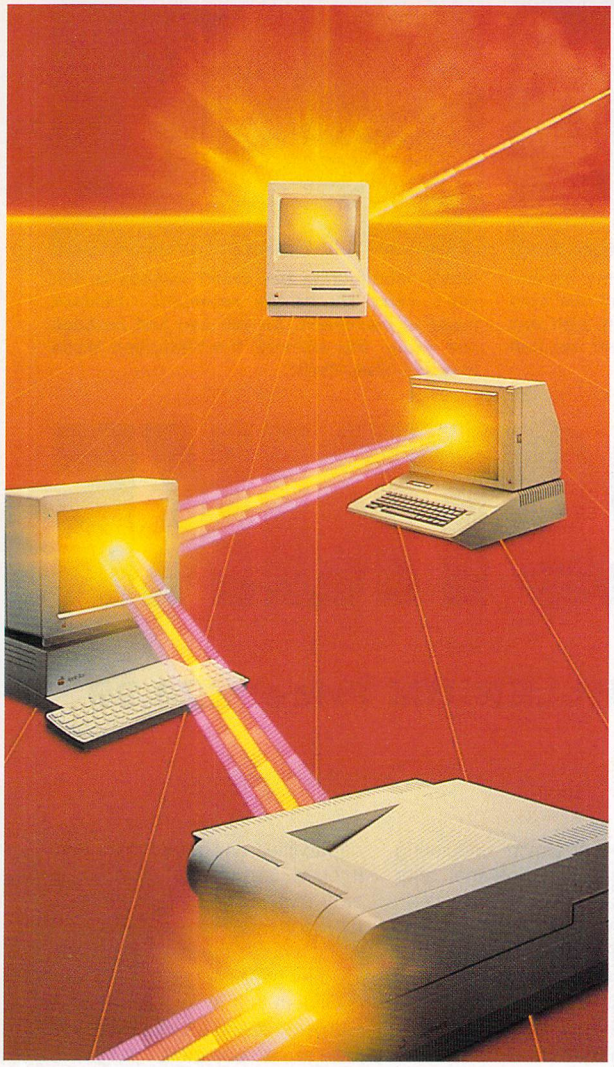

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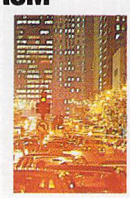

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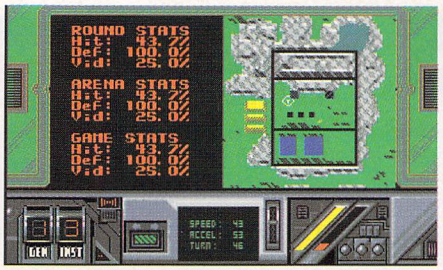
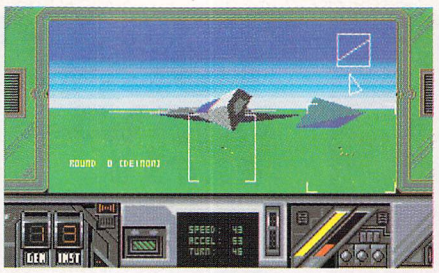
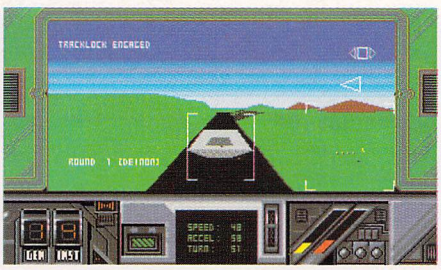


The relief map is needed to plan your attack, and to help you recover your ground when you're defending. It also provides useful and interesting stats, including both your hit rate and the viewers'



Fleeing from those unfriendly enemy attack-craft, you begin to wonder where all that confidence and enthusiasm you began with has disappeared to. Who cares, just get the hell out of there!



Who's chauffeuring this craft? Nobody is, but don't worry, it's on the automatic tracklock mode of movement. So you can just lie back and enjoy the scenery, the birds, and those loveable bees. Yeah!

THUNDERSTRIKE

House: MILLENIUM Price: £24.99

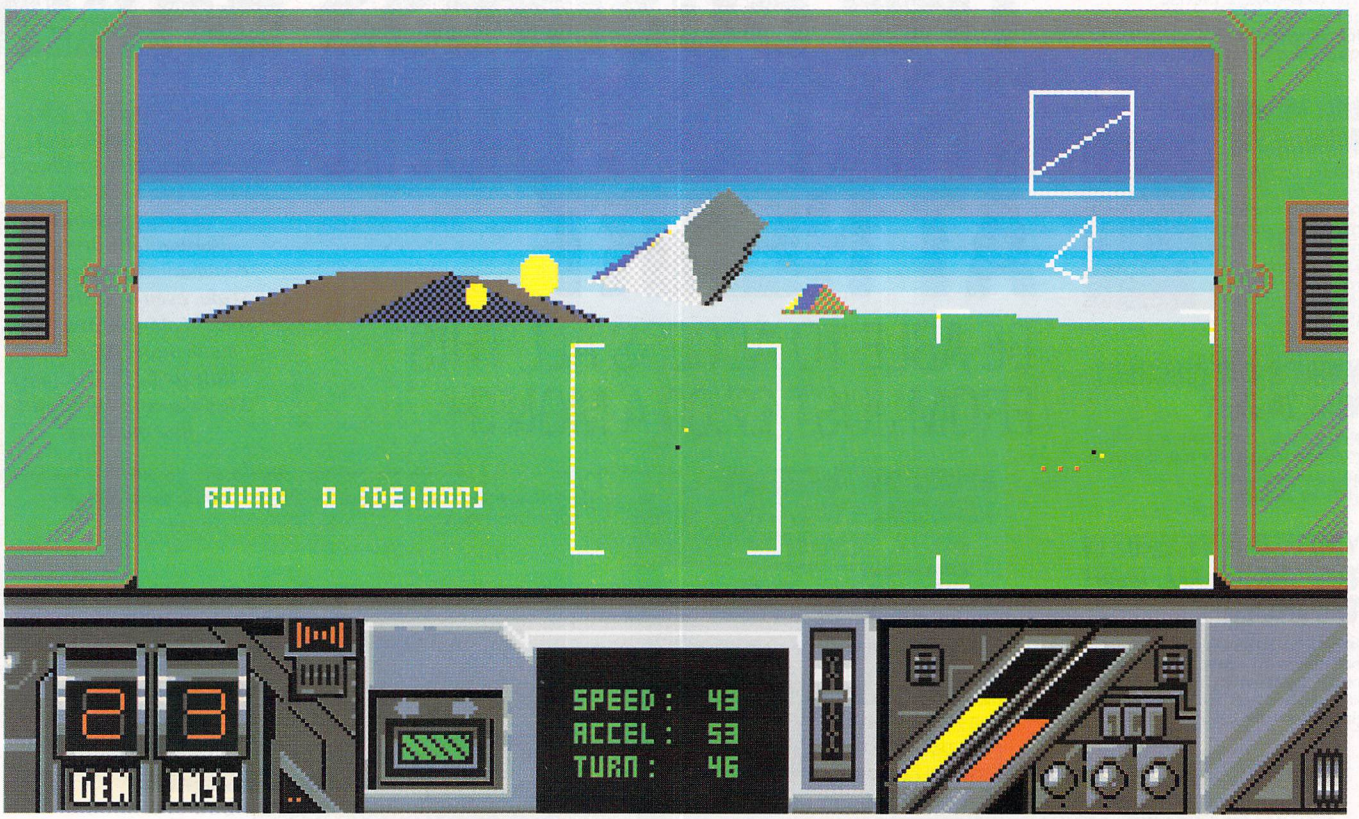
Not content with the hollering and whooping from stimulating TV shows such as 'Come On Down', or the smug 'Umms' and 'Ahhs' from the delightful Bob Monkhouse, the public wanted to see a programme with a bit of BITE! They'd seen old movies like 'Running Man' and 'Rollerball', and creative images began to form in the imaginations of the public. Realising that something had to be done, MegaCorp Industries devised Thunderstrike – the sport of the future.

Thunderstrike is a successful combination of strategy and shoot-em-up, which concerns you as the pilot of one of four available Thunderstrike aircraft. The action takes place on a 3-D vector filled graphical undulating landscape (try saying that after you've had a few, or even before!) Speed is paramount as you try to earn the coveted title of 'Defender of the Ground'.

BELOW: You launch into your attack, full of confidence and enthusiasm. Your missiles blast away at the enemy installation. No sweat, man!

The object of the game is to destroy a number of enemy installations, and at the same time defend your own installations. Enemy installations supply an unlimited amount of fighter craft – all out to put an end to your mission. These craft vary in capabilities and attack methods: fighters are zippy, dangerous craft that will commit themselves fully to their cause, which is killing you in the most devastating way possible.

Gliders are a lot slower than Fighters, but are obsessed with the same objective. If you're doing just a little too well, a glider will home in on your craft and do its utmost to cause damage by ramming you. Lungers seem innocent enough until you pump



ABOVE: It appears that you're not going to earn the title of 'Defender of the Ground' after all, as you fail in your mission and your contract is terminated. Maybe next time...

a few missiles up into their afterburners. This will cause them to explode, sending shrapnel into your craft – not a good move on your part.

Bombers have a more devious way of attacking – they drop floating-mines throughout the airspace, which explode upon impact. Finally there are Saboteurs, which are extremely dangerous even though they don't attack the aircraft. "That doesn't sound too dangerous", I hear you say. It is when they're the ones that attach themselves on to installations and attempt to dismantle them piece by piece. Lose the installations and lose the game.

It's important to try to prevent any of the installations being destroyed, because at the end of each level, you have the opportunity to upgrade your craft in terms of acceleration, speed, and turn rate. Lose just one installation and your craft will not be upgraded, making your task in the later and much harder levels more difficult.

To improve your chances on the levels, when certain enemy craft are destroyed, they conveniently leave behind special Military Hardware Pods. These include Defence Pods which create a spinning pod around your craft destroying anything it comes into contact with. Twin Pods double the aircraft's firepower and Power Pods give your shots a dose of Irn Bru.

Also available are Shield Pods which top up your vital shields, and Turbo Pods that offer the option of turbo speed for a short while. The craft is equipped with everything you could possibly need: tracklocking indicator, compulsory radar, shield indicator, map of the arena, compass, along with many other indicators.

The tracklocker is a sophisticated piece of equipment. It allows landing on a black track that travels around the arena. This will whisk you around without having to use the mouse controls. It's quick, safe and allows you to sit back and travel in luxury. To leave the track, increase the thrust and pull away – useful and simple! It does take a little practice to be able to lock onto the tracks first time, but after that it's easy to utilise.

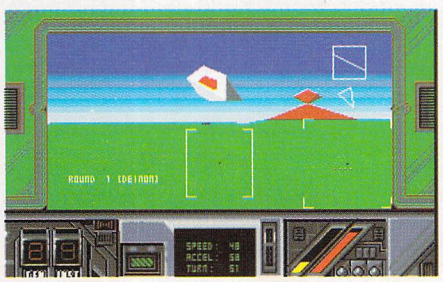
As well as surviving the rounds there is another problem – the TV viewers are out to lynch you if enough entertainment isn't provided. The degree of your stardom is measured by a gauge at the bottom of the screen, and this depends upon your hit rate. If too many shots go astray the viewers will switch channels, but if you prove to be an accurate shot the viewers will flock to you, declaring their undying loyalty.

Thunderstrike is a competent production with a very well set level of difficulty. The graphics are clearly drawn, scroll smoothly and are well presented on the screen. While the sound effects are a little limited, they do complement the game to a reasonable degree and help to add to the overall atmosphere.

The gameplay is of a high standard too with responsive mouse controls. The Military Hardware Pods also add much to the enjoyment of the game, as they enhance the craft to its full potential. One problem which does occur, is that it's a little too repetitive, with each level looking very much like the rest, but nevertheless, Thunderstrike is still good fun to play and worth spending your dosh on!

TRIED AND TESTED:

REVIEWER: .....STEVE
GRAPHICS: 81%
SOUND: 73%
GAMEPLAY: 80%
OVERALL.....78%



That Saboteur craft is messing with the wrong man! Nobody, and I mean nobody, messes with my installations. It's time I showed them who's boss around here

Your performance is assessed at the end of each successfully completed level, and the relevant modifications will be made to your craft in relation to your previous performance

Tearing over the land, you seek out the enemy installations which you need to destroy if you want to succeed. Don't forget to watch out for enemy aircraft attacks, though

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STUOCT

ABOVE: Operation Stealth is the follow up to the brilliant Future Wars from Delphine. This time you play the part of John Glames – a top secret spy who carries a briefcase with a difference!

RIGHT: You are briefed on your mission at the CIA headquarters in Washington, and the commander tells you how the Stealth was stolen and says that the Soviets are suspected of committing the crime. However, you have information to the contrary

OPERATION STEALTH

House: US GOLD/DELPHINE Price: £24.99

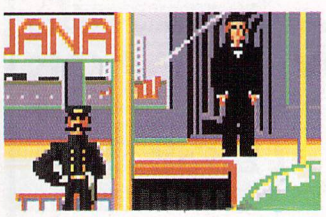
Delphine stunned the world when they released their Cinematique label and of course, the great Future Wars. The original was a completely mouse - driven game that was similar to Sierra and Lucasfilm adventures. The graphics were excellent, as was the sound. It also played like a dream and for this reason, it won an award for 'Best Overseas Game'. However, Future Wars was distributed by Palace, and now U.S. Gold have collected the rights and are selling Operation Stealth, the sequel.

Once again the idea of a mouse-controlled game was used, and the commands Operate, Use and Examine are combined to make your character, John Glames, execute the manoeuvres you require. Movement is simple – you just point and click on where you wish him to go. Also, the control system is easier to use than in the original.

As mentioned before, you play the role of John Glames, a spy who has been hired to locate the missing Stealth - the latest American aviation project worth billions of dollars. The Officers above you believe that the Soviets are responsible for this dastardly act, but you have different ideas. If they were right why was the Stealth seen flying in Santa Paragua airspace, and as this is your one and only lead what better place to start the adventure?

Every inch of Santa Paragua will have to be thoroughly searched , and as you're not welcome in this country it's best to stay low. If you're suspected by someone, then you're on your own – as the American government will disown you if your identity is unveiled. As the game opens up, you'll find things become a little clearer and small pieces of information will come together to aid you in your task. The plot thickens though, and it seems that you are not only dealing with the stolen aircraft, but you have also been involved in a plan to overthrow the Santa Paraguan Government!

ABOVE: Your first lead is at the airport where the Stealth was last seen. There's one problem though – the guard's not the friendliest of people and he'll try to stop you passing. You'll need a fake name to get past him



BELOW: Without any leads to go on, you leave the airport and scan the area for any clues. The place is packed with tourists but you still don't notice anything odd. I wonder if the taxi drive knows anything?

Operation Stealth has the addition of arcade sequences which the first didn't include, meaning the game tests both your skills in adventuring as well as arcade action.

Having played Delphine's Future Wars, I knew that Operation Stealth was going to be something special. The graphics and sound are first-class and the system is easy to use, making Operation Stealth a brilliant 3D adventure that newcomers and fans of the original will love.

TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 85%
SOUND: 80%
GAMEPLAY: 83%
OVERALL.....84%

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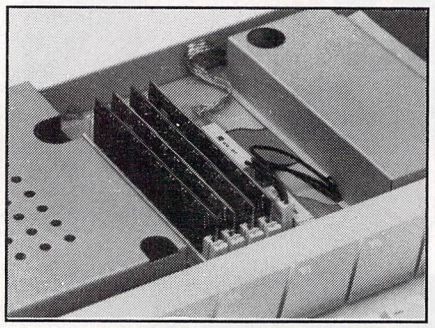

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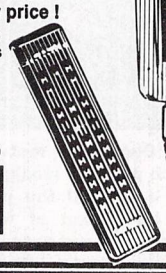

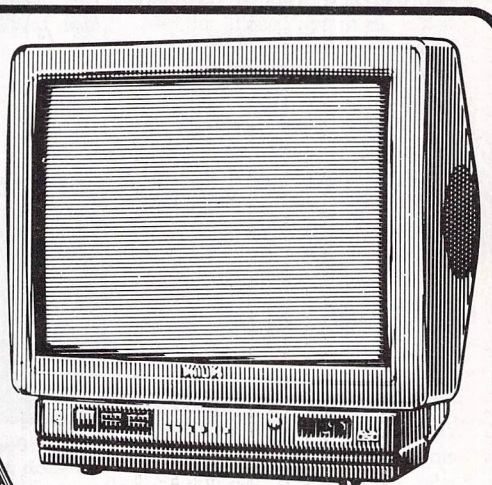

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MONTY PYTHON'S FLYING CIRCUS

House: US GOLD Price: £19.99

Poor Mr D.P. Gumby's in a dilemma. Nothing too serious - he's only lost his brain. He had a brain complaint that was stopping him from fulfilling his ambition of being an accountant.

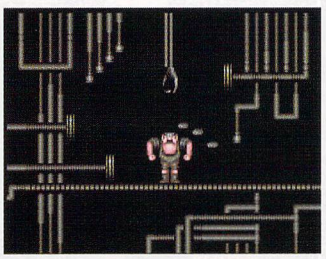
While he was being operated on at Dr Enid Gumby's Harley Street practice, Mr Gumby's brain leapt out of his skull and broke into four individual pieces which then disappeared. You have to hunt down the pieces of brain.

Your skills for the journey are a wide knowledge of different cheeses and a prize mounted fish - extremely useful as any sensible person will realise. The pieces of brain are doing very well at the moment. Three are members of the world-famous Buzz Aldrin Formation Dance Troupe and the fourth is in a film by Ken Russell! You must take control of the brain-dead Mr Gumby and guide him safely through several different levels of pure insanity.

Unfortunately, each different location Mr Gumby visits is rife with evil nasties such as toy Vikings, killer seals with helicopter blades and wait for it... upside down birds. The exits from each screen are indicated by a fist that thumbs the direction in which our hero must travel.

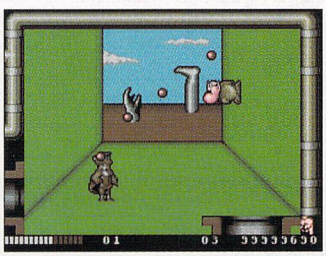
Every now and then, Mr Gumby will be taken to the surgery room to have his body exchanged. The first exchange consists of swapping his body with that of a fish. Later on in the game it's swapped with a springing boot.

To reach a piece of brain, Mr Gumby must collect sixteen tins of spam that have been hidden behind large lumps of cheese.



Poor Mr Gumby has lost his brain and each piece is making a dash for the door. Will the poor man realise his dream of making a career in chartered accountancy?

No sooner has Mr Gumby started his quest, than he'.s grabbed by a large fist, his head pulled off and his body swapped with that of a fish. Whatever next?



The end-of-level enemy come in many guises and the first is a unicyclist. He may look harmless but he is armed with bombs that he will scatter about the screen

TRIED AND TESTED:

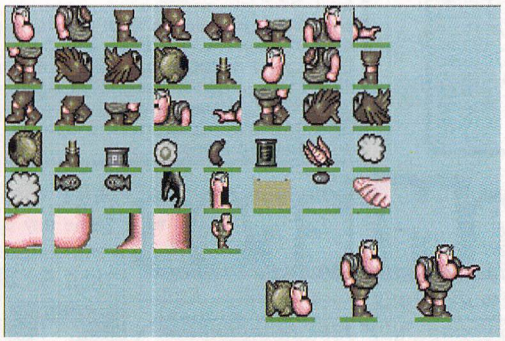
REVIEWER:	STEVE
GRAPHICS:	84%
SOUND:	78%
GAMEPLAY:	72%
OVERALL	75%

Fortunately, he has been armed with fish which, when fired at the cheese, releases the tins of spam. Smelly feet also make an appearance, as well as wasps and mincing machines.

At the end of each level, Mr Gumby will come face to face with the end-of-level-nasty - the first being a unicyclist who releases bombs in all directions. This guy will need to be hit several times with the fish to make him explode. You are then given the chance to earn yourself some bonus points by arguing pointlessly with the minister.

The score is indicated to the right side of the score panel and starts at 99,999,999, this reduces as you progress. Mr Gumby's energy is indicated by a vitality bar that depletes every time he is hit by a nasty. The all-important spam indicator is displayed as a two digit number in the centre of the score panel.

There are some very humorous effects and the game moves along smoothly and consistently. Sound includes digitized sound effects as well as farty and squidgy noises. 'Python is a shoot-em-up in a new guise and it's on this basis that I recommend you give Monty a miss.



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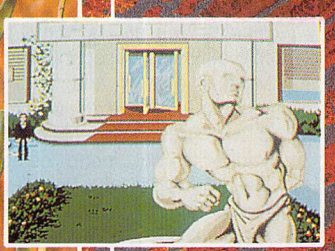

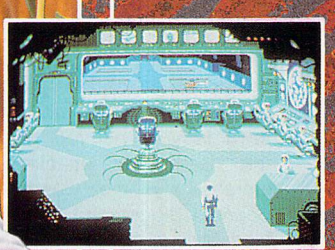

Screen shots from Atari ST version

Screen shots from Amiga version

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RIGHT: Using all of the agility you have gained from your training, leap onto a nearby lamp-post and swing backwards and forwards to build up momentum. This allows you to kick approaching thugs in the face

SHADOW WARRIORS

House: OCEAN Price: £19.99

Ever since computers were first used for leisure purposes, beat-em-ups such as Yie Ar Kung-Fu and Karate Master have flooded the games market, and they've been very successful too. The standard of these violent games has increased somewhat on the 16-bit machine such as the ST, but it's still very rare to find a game of this genre that uses the computer to its full potential.

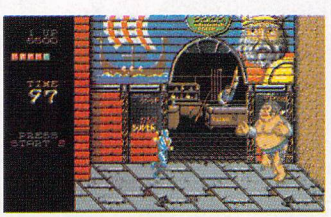
Arcade conversions that have made it onto the ST have failed to impress. Ocean have programmed many beat-em-ups before, but their latest effort is an arcade conversion that promises to be better than many of the other attempts.

Shadow Warriors is a game that follows the basic horizontal scrolling type of beat-em-up, placing you and a friend in the role of Ninjas based in the U.S.A. Various martial arts and Ninja techniques have been handed down through the generations, you and your friend being the last Ninjas to have these skills. Now you must use all that you've learnt to combat your enemies in the cities of America.

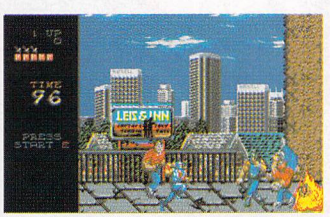
There are six areas that need to be passed through, most are the toughest neighbourhoods imaginable, each level being littered with assailants who charge towards you. As you progress the number of attackers will increase and their weapons will become bigger and better. The foes on level one simply attempt to punch your lights out, but later on you'll be hit with logs and swords that are twice your size.

All control of our oriental heroes is through the joystick. Left and right make him walk in either direction, and tapping the button makes him throw a punch. Also, a combination of tapping the button and moving the joystick makes the hero somersault into the air or pick up a thug and throw him to the ground!

Shadow Warriors certainly does have a wide variation of moves to its credit such as throws and swinging on lamp posts. However, this doesn't save Shadow Warriors from being a run-of-the-mill game that only beat -em-up freaks will enjoy.



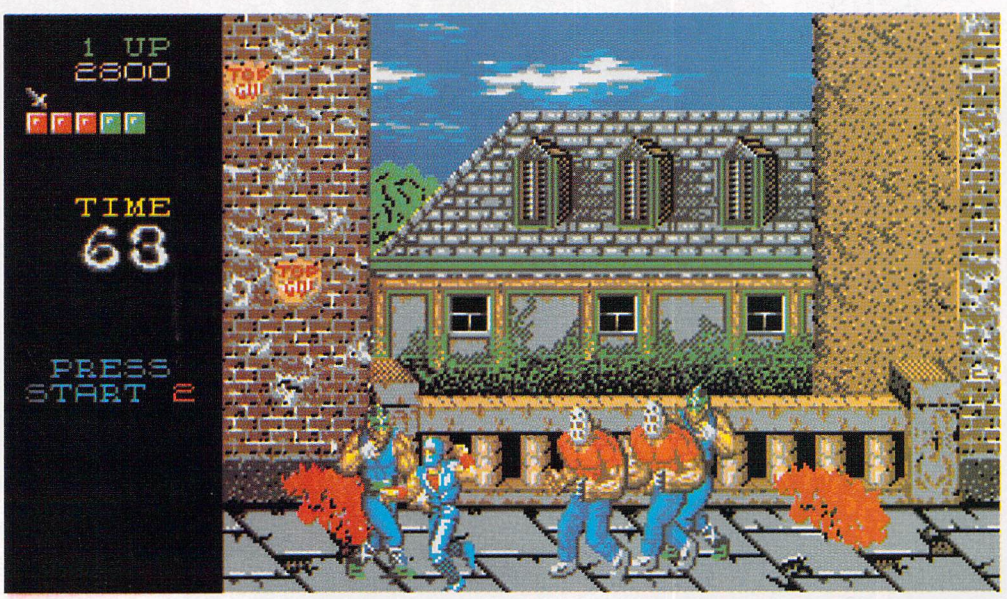
At the end of each level there's a guardian - they don't come much bigger than these dudes.



Along the way, Coke machines and Cigarette dispensers will block your passage.

TRIED AND TESTED:

REVIEWER: .....ALEX
GRAPHICS: 80%
SOUND: 68%
GAMEPLAY: 74%
OVERALL.....76%



LEFT: To begin with, you only have punch power, but as the game progresses more weapons will be available to you, such as a sword which slices through your opponents with a single blow

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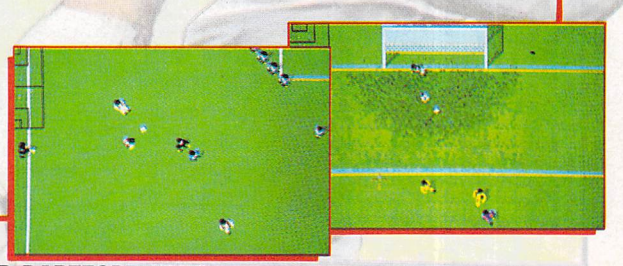

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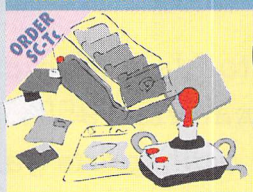

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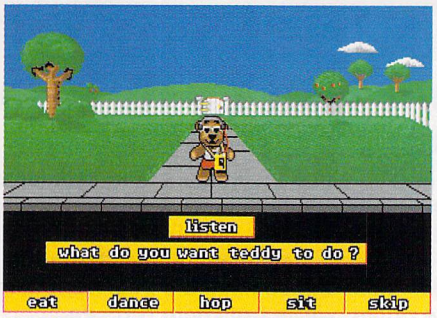
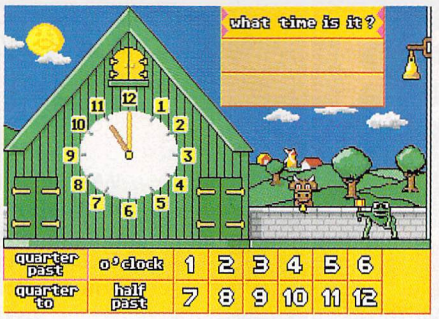
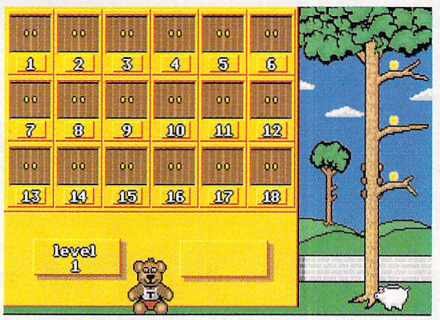


Children love making Teddy dance and skip...



and helping Kermit look-a-like tell the time...



Then it's back to Teddy for shape matching

Products: Fun School 3 Under 5s, 5 to 7s, Over 7s
Supplier: Database Educational Software
Telephone: 051 357 2961
Configuration: All STs, colour only

SCHOOL CAN BE FUN!

The days of boring, stodgy educational fodder are long gone and today's packages should be both fun and educational. Michaela Jayne boots up the latest offering and sees whether it makes the grade

The Fun School series of educational programs has been a huge success for Database Educational Software, and quite rightly so. You would be hard pressed to find a better collection of software packages for your children to use at home or school.

Fun School 2 was the only educational package ever to appear in the best selling games software charts, and now Fun School 3 looks set to repeat the performance. Proving that it wasn't just a fluke or a hype.

OVER 7S

The Over 7s package consists of six different modules. The first is a wordsearch in which a list of words is hidden. You have to highlight a word by pointing and clicking on the first letter and then on the last.

The second module is a cut down version of Logo. A column of buttons down the screen provides 13 commands, just click on a button and the turtle will go forward, backward, turn left or right. Distances and angles are entered via a dialog box.

In Planetary Maths sums fly across the screen, before they crash into a force field the correct answer must be entered. The program includes working in pounds and pence.

Treasure Search tests a child's understanding of the compass and requires a little dexterity with the mouse.

Database is an excellent card index which stores information in records containing two fields. It's possible to load and save, add or delete records, search, sort and print.

An extra feature Test, prints the second of the two record fields and prompts you to enter the first. It's possible for instance, to enter a capital city in the first field, then the country name and details in the second. The second field would be displayed and the capital city would have to be entered.

The final module Sentences, had not been finished in my pre-release copy. However, if it matches the high standard of production and content of the rest it'll be superb.

UNDER 5S

Another six modules come with the Under 5s package - Matching, Actions, Gallery, Counting, Letters and Painting.

In the first, Matching you must match pairs of shapes such as squares and circles. Actions is quite amusing - make a teddy bear sleep, hop, skip and so on using buttons at the bottom of the screen.

In Gallery the labels have fallen off pictures and they must be picked up and pasted on the correct pictures. Counting takes place at a teddy bear's picnic where various articles must be counted including bears and flowers. Visit the fair to play Letters, which simply involves matching letters of the alphabet.

Introducing Ted, the star of the package

Painting is the final module and in this it has to be decided which colours to use, but let the program do the painting.

All the modules are easy to use, fun, educational and graphically superb. What more could you ask for?

5 TO 7S

Six more modules of educational fun, starting with Journey in which a frog is guided to the post office, garage, church and so on.

s Once again you turn into a Kermit clone for Collect, in which the parts of a sum that have been lost and it is up to the player to collect them. Collect a five, plus, three, equals and then an eight to make the correct sum - it's not easy for youngsters.

Electricity is a computer simulation of building basic electrical circuits. A circuit is displayed, such as a few wires, a light bulb and a switch, and the object is to decide whether it will work.

Spend your pocket money in Fun School's toyshop by picking up toys with the mouse.

Funtext is a teletext-type database of pages similar to that on TV. A question is displayed and here the task is to search through the menus and pages of data for the correct answer.

In the final module Clock, the player is asked to input the time shown. It's mouse controlled and all the figures and words you need are displayed as buttons on the screen.

CONCLUSION

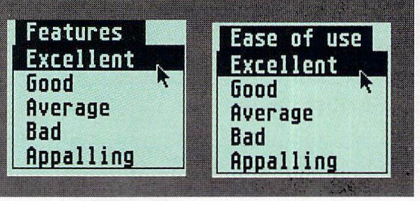
My pre-production copy of Fun School 3 had a few bugs, but I have no doubts that these will be fixed by the release date.

So yet again Database Educational Software has produced a stunning educational package which leaves the others standing.

THE BOTTOM LINE

Features: With six modules in each package a wide range of educational concepts are covered.

Ease of use: Couldn't be simpler - it's child's play!



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(XMA) and gives following XMA support:
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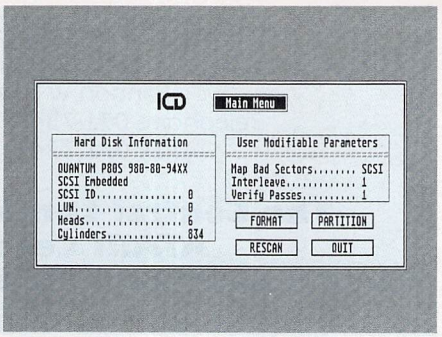
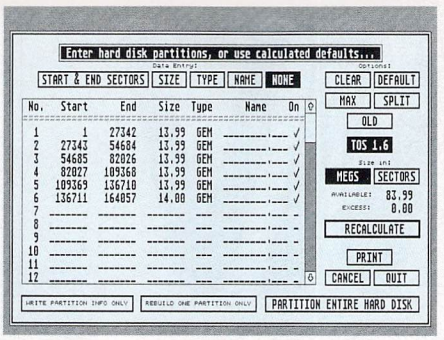
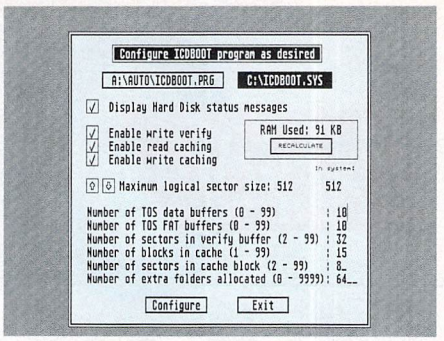


Several levels of verification are available during formatting



The ICD partition software will equally divide space between several partitions



Set aside memory for read and/or write caching, extra folders, write versify and so on

FA.ST FORWARD!

Product: FA.ST 40Mb Hard Disk Drive
Supplier: Silica Systems
Tel: 081 308 1111
Price: £573.85

Ever larger programs have ensured that today's serious STer simply can't be without a hard drive. Roland Waddilove test drives the latest...

Broadly speaking, there are two types of ST user: games players and serious users. The former will be quite happy with a 520ST and floppy disk drive because they can play probably all of the games on the market. The latter user however, needs speed, power, large amounts of RAM and tens of megabytes of hard disk storage space for DTP programs, programming development systems, CAD software and so on.

With Lattice C, Mega Paint II, Calamus and a few utilities on a 20Mb hard disk there's very little space left! When you're playing in this sort of league 20Mb will be gobbled up before you know it and 30-40Mb should be considered a minimum.

So with the serious user in mind we gave the Silica Systems 40Mb FA.ST hard drive a thorough work-out. The Quantum P40S drive is packed in a small, neat case that can be stacked under a monitor (but the monitor may hang over the sides of the slim case), or it can be placed alongside a 520/1040ST.

The very long DMA lead supplied, means the drive could even be placed on a shelf above or below the desk. There have been reports of problems with long DMA leads and STEs, but the 36 inch lead supplied worked reliably throughout the test period.

At the back of the case, there are DMA in and out ports which enable you to daisy chain other devices, such as the Atari laser printer. There's also a SCSI socket and the host adaptor/SCSI address can easily be changed with a simple switch on the back panel of the case. At the front, there are two LEDs consisting of a red power on and a green drive busy light.

The auto booting unit is supplied with a floppy disk containing many ICD utilities. Auto booting drives speed up the booting process, and mean that you don't need a floppy disk in your drive in order to boot (if one is present, it will be ignored). If necessary, auto booting can be disabled from the keyboard by holding down Control+Shift+Alternate and this enables the ST to boot from floppy disk as normal.

The hard driver software is powerful, easy to use and packed with useful features. It can be told to verify all disk writes, cache reads and/or writes and display status messages. You can set the size of the caches, the size of TOS and FAT buffers and increase the number of folders you can open. Tapping the Escape key during boot up disables the extra features and installs a minimum driver - useful on a 520ST with limited memory.

The disk caching utility speeds up disk reads by storing oft-used sectors in RAM. When these are asked for by the operating system, they are brought from memory rather than the disk surface. The transfer rate is then extremely quick. ICD's cache will optionally allow writes to be cached, too.

The formatter tests for bad sectors and you can set the number of tests each sector is put through, or disable the function completely. Up to 64 partitions are possible, but only 14 may be active at any given time due to TOS limitations.

Enter partition sizes, types and names and the software calculates remaining free space, or splits the disk space equally between whatever number of partitions you care to enter. Partitions can be made active or inactive without deleting the data stored on them.

It's possible to increase the size of partitions beyond the ST's limit of 16Mb, all the way up to the drive's 40Mb capacity. The only restriction is that drive C can't be bigger than 16Mb.

The average access time of 28ms and data transfer rate of 657k/s are very fast indeed. Hard drive manufacturers quote disk access times to prove that their units are faster than any others, but this is an unreliable measure of speed because the software you're using and the ST's operating system often prevent the drive from running at its maximum rate.

The manual clearly explains what hard drives are, how they work, how to format and partition the FA.ST supplied and so on. It is, unusually, quite good and one other suppliers would be advised to copy.

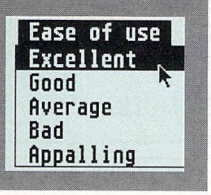
No other software is provided apart from the superb ICD utilities. A backup program would have been useful, as would a disk editor. There are several in the public domain so I can't see why they couldn't have been provided.

Overall, FA.ST is a well built drive, supplied with a good manual and powerful utility software. Recommended.

THE BOTTOM LINE

Features: A well built drive that is supplied with some of the best driver and formatting software available.

Ease of use: Very easy to use. Supplied with a good, easy-to-read manual.



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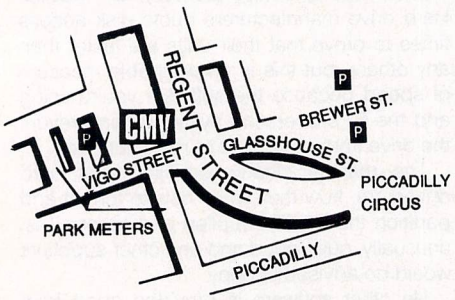

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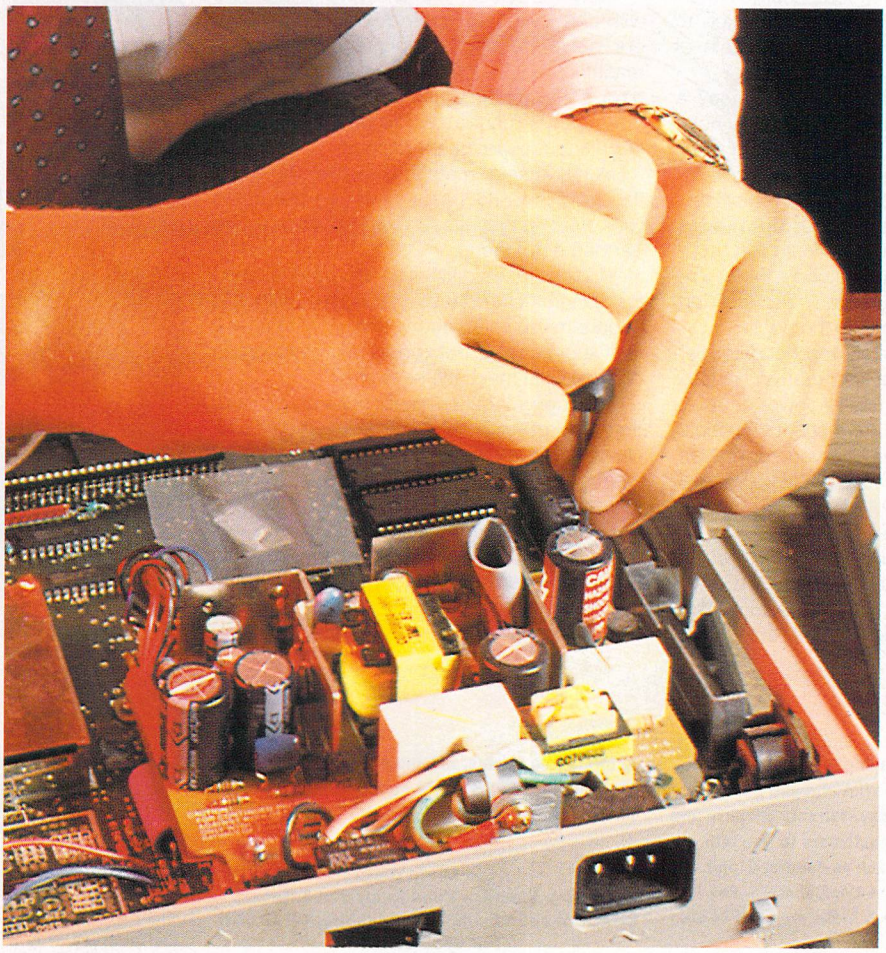

Be prepared, John Butters was when he saved 'USER a fortune in repair bills...

Despite the phobia some people have of computers doing strange and peculiar things, STs and computers in general are usually reliable devices, and many users go straight through their computing lives without a single technical hiccough.

But it would be foolish to say that nothing's ever going to happen to your set-up, things do go wrong and occasionally very wrong. I knew what to do when my Sony monitor blacked out in the middle of writing this feature but are you prepared for the worst?

There are basically four options to choose from if your equipment suddenly cuts out. A soccer hooligan could try physical violence, it'll either work and cost nothing, or you could end up breaking other parts of the machine and have to fork out much more money for its repair.

If you know what you're doing, buying the parts and repairing the problem yourself is a pretty cheap option and probably the best. Alternatively, a friend might know what's what in your ST and be happy to dig their screwdriver and soldering iron out of their toolbox for the cost of a pint.

The easiest way of having your machine repaired is sending it to a specialised repair centre - you'll usually get a 90-day guarantee on the repair. The disadvantages of repair centres are fairly hefty labour charges (currently about £20 an hour) and you're likely to be without your equipment for a couple of weeks.

Who should cure your problems then? A DIY job on the power supply is certainly not a wise choice, especially if you're baffled when fitting a plug to your hair dryer. On the other hand it's not worthwhile paying a repair centre a £40 labour charge to press down a few loose chips when the job could be done inside half an hour on a kitchen table. The choice is down to you, if you feel confident have a go yourself, if not call the doctor.

Like a car, you're likely to encounter two types of problem - wear and tear on parts or accidental breakages. Faulty power supplies come high in the list of the usual complaints, along with troublesome memory upgrades, loose chips and worn sockets. If a floppy disk drives stops doing its job it's often simpler to replace rather than repair.

Power supply faults are probably the worst thing that can go wrong and STE owners are having a pretty rough time with them, however Atari is trying to sort this out. If you're really unlucky this type of fault could have a knock-on effect and other parts of the computer, such as transistors and diodes could blow. Fuses are fairly easy to replace if you can get hold of the right type, but in nearly all cases a power supply problem is best left to the specialists.

Owners of 520 and 1040 models could suffer from problems of wear and tear with the I/O sockets on the back of the machine. Sockets can be saved excess stress by unplugging wires going into them before tilting the machine back to gain access to the awkwardly-placed joystick and mouse ports.

Disk drives fail for various reasons including the drive belt falling off, alignment trouble and dirty disk heads. If you're having trouble with disks don't automatically assume it's a drive fault, the problem could very well lie with the motherboard or disk. Check to see if other disks work in the drive and if they don't try to connect another drive to your machine.

If the drive still appears to be broken it will definitely be worthwhile using a disk head cleaner - available for a few pounds. If you still have no joy various replacement drives are available, Power Computing for example have them for £59.95. This is probably the best option because unless you know what you're doing you'll pay as much to have your existing drive repaired by the professionals.

Early models of the ST have a problem with chips working loose quickly. Some owners get them back in place by lifting the machine about 50cm above a desk and dropping it. Remarkably this remedy often works but it can hardly be said to be the ideal way of getting around the problem.

A much safer method is to take the lid off the machine and press down on the chips with your finger tips, making sure you're earthed beforehand.

Miscellaneous difficulties are often caused by general clumsiness - a coffee with two sugars might give you more energy to play a fast shoot-em-up but giving the keyboard a drink will just make the keys stick.

Although made of plastic it's very unlikely that the keys will fall apart in everyday use. However thumping the keyboard when you lose one of your ships in a game won't increase your score, but it could very well break the keyboard. These points might seem obvious and unworthy of mention but you'd be astonished at the frequency of this kind of repair.

By now you're probably nibbling away at

WHERE TO GO...WHERE TO GO...WHERE TO GO...WHERE TO GO...WHERE TO GO...WHERE TO GO...WHERE T

If you find the thought of taking the lid off the ST too much to contemplate here's list of repair centres we recommend. All give a 90-day warranty on parts and labour. Most advise their customers to use either a next day delivery carrier such as Federal Express or Interlink, or the Post Office's Compensation Fee Parcel Post service, which costs in the region of £4.50.

Ampower
15a Alcester Road, Studley, Warwickshire, B80 7AG. Tel: 0527 85 3374

Ampower deals with most problems although they are reluctant to repair machines which have had their insides played about with by their owners. Ampower find floppy disk drives problematic in STs and faulty ones are replaced with a Cumana example for a standard charge of £85.

The labour charge is £18 an hour and the company offers free quotes, but there's no guarantee that the Mega range of STs will be turned around within the usual week.

Avon Micro Centre
Unit 4 Western Road Industrial Estate, Stratford-upon-Avon, Warwickshire, CV37 0AH. Tel: 0789 292269

Before sending a machine to Avon Micro Centre check out the delivery service it offers customers. Arrangements are made for a courier to collect equipment from anywhere in the UK. It's claimed that nine times out of 10 this service is cheaper than the customer arranging their own.

Any job will be accepted except memory upgrades of machines. Most repairs are power supply failures on 520s with 1040s being more reliable, however floppy failures are catching up.

Evesham Micros
Unit 9 St Richard's Road, Evesham, Warwickshire, WR11 6XJ. Tel: 0386 446441

Offering a guaranteed two day turn-around time Evesham Micros has set charges for repairs. Providing the fault lies in in a standard ST and it's not been played with by the engineer next door, replacing a power supply will cost £45. Any other repairs are sorted out for a modest £65.

If the machine is taken in by the company under different circumstances there is a £30 an hour labour charge and a quotation charge of £15, however this amount isn't payable if the ST is left for repair. At the moment the most common problems which the company deals with are floppy disk drives and, in older machines, loose chips are becoming more frequent.

O... WHERE TO GO... WHERE TO GO... WHERE TO GO... WHERE TO GO... WHERE TO GO... WHERE TO GO....

Ladbroke Computing
33 Ormskirk Road, Preston, PR1 2QP.
Tel: 0772 203166

There's a standard labour charge of £34.50 for all work carried out by Ladbroke. Again the most frequent faults tackled are disk drive problems and STE power supplies but no ST is turned away. A piece of equipment will usually be in the company's hands for three to four working days depending on the workload at that particular time.

Penge TV & Video Services
49 Parish Lane, Penge, London, SE20 7LJ.
Tel: 081-659 2851

New to computer repairs this two-man company will repair any faulty ST so long as it is economical to do so. Memory upgrades are especially cheap here - a set of 512k integrated circuits costs £40, 2Mb £175 and STE memory modules cost a little more but have free fitting.

Locals can take their machine into the shop for attention or for a small charge the company will go to your home or office.

Silica Systems
1-4 The Mews, Hatherley Road, Sidcup,
Kent, DA14 4DX.Tel: 081 309 1111

Another company which has standard charges for ST repairs. For £63.25 520ST problems will be cured (except power supply, keyboard and disk drive replacements). 1040 owners have to find £74.75 for the same service. The price includes the cost of returning your computer by a 24-hour courier service.

The turnaround time of a machine is between five and 10 working days, depending on how busy Silica is. It is cautious about taking on work where the owner has attempted to carry out a RAM upgrade because costwise it is usually better to buy a new ST.

W.T.S. Electronics
Chaul End Lane, Luton, Bedfordshire,
LU4 8EZ. Tel: 0582 491949

No fault's too much for this Luton-based company and unlike many repair centres W.T.S. will also deal with the Atari laser printer. The turnaround time is officially one week, but the company proudly claims that its average time is two-days.

A £15 diagnostic charge will get your machine completely checked but this is taken off the bill if repairs need to be carried out. The most regular faults lie with the internal power supply and also with disk drives.

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A soldering iron, multi-meter and long-nosed pliers are the minimum requirement for complicated home repairs

your nails, thinking the ST sounds as reliable as British Rail. But hopefully if anything goes wrong you now have some idea of what the problem could be.

WHAT YOU NEED...

So you've overcome your fear of wires and chips and you're going to cut open the stomach of your ST and perform open heart surgery. There's a good chance you won't have all the necessary tools lying around your bedroom, or even know that they exist.

Other than a screwdriver, a soldering iron is probably the most useful tool for anyone ready to push their ST into the theatre room. They come in various sizes, so be careful to get one that's not too large otherwise you'll have difficulty using it on the smaller parts of the machine. Without a soldering iron you'll be very limited in what you can repair.

Long-nosed pliers are another must and one of the cheapest tools needed. Wires will have to be cut and twisted and this won't be very easy using anything else.

You might have heard of a multi-meter but unless you've done electrical work before you are unlikely to own one. It's used for testing a multitude of things. For instance, wires can be tested for breakages by using a multimeter to see if a current will pass along them. They can be bought with either analogue or digital displays but the digital is recommended because of the high accuracy it gives. The prices vary - analogue models £8 - £20 and digital £15 - £25.

Of course, the professionals at the repair centres use many more tools. If you went to one you'd find workbenches littered with logic probes (which test logic levels), current tracers (used for finding PCB faults) and oscilloscopes (for a variety of measuring applications, such as time-related voltage waveforms).

HOW TO SOLDER...

Even if you're not contemplating home repairs, it's very useful to be familiar with soldering as it's used for making a permanent contact between two electrical components. You could save £15 by building your own monitor lead, or perhaps the more daring could attempt a memory upgrade.

Only two pieces of equipment are needed - an iron and solder - neither of which are expensive. The iron is plugged into the mains and becomes very hot, when it touches the solder it melts it forming the contact.

Soldering is much less difficult to master than it might appear to the bystander, although great care is needed if you're to get satisfactory results. Messy work is usually the result of using too much solder or melting the connectors by panicking and keeping the iron touching them for too long.

To solder a wire to a connector, remove about 1cm of the plastic coating and twist the wire to get rid of any loose ends. Allow a tiny amount of solder to melt on the tip of the iron . Coat the wire in a smooth layer of solder by touching it with the iron and some solder simultaneously.

Once cooled, cut off the end of the wire, leaving about 0.25cm to fit into the solder pins of the socket or plug. Applying a little heat and a tiny amount of solder should securely attach a wire to a socket.

WARRANTY

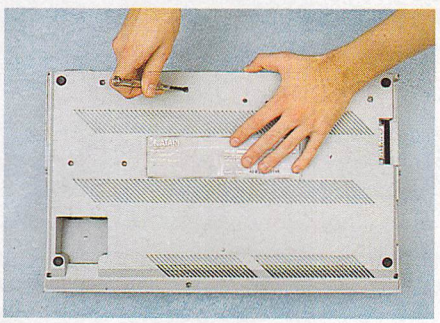
Before taking the back off your ST to have a go yourself or sending it off in a Federal Express van to a repair centre, check that your machine's not still under warranty. A new ST has a 12-month guarantee, during which time if anything goes wrong with it your dealer must sort the problem out at no cost.

To make life easier the receipt should be kept as proof of when you bought the goods should you need to use the guarantee. The original packaging will also come in useful if the machine has to be sent through the post, so if you've got any spare room it's worthwhile keeping it.

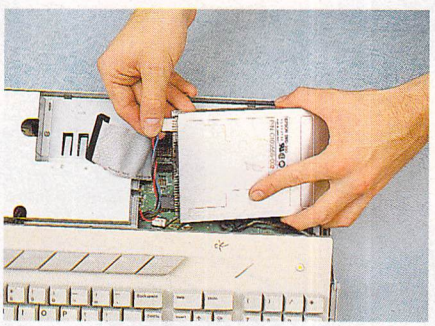
If you're unfortunate enough to have anything go wrong in the first few weeks you'll find that most dealers will normally replace the equipment. After that period it will either be repaired at the dealer's workshop or sent back to Atari, leaving you without a computer for some time.

The warranty doesn't cover breakages caused by careless users so it's no good taking an ST into a dealer with tyre marks across it and claiming that the case just cracked as you were using the Cover Disk. Dealers have heard all types of excuse and know whether something's been driven over or not!

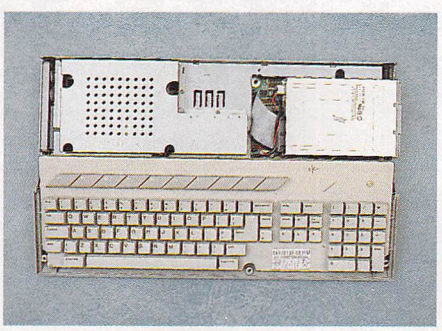
Taking the back off your beloved ST, even for a quick look, during the 12-month period will invalidate the warranty straight away. Be warned - some dealers have stickers over the screws on their machines and if any are missing or ripped they will presume the back's been taken off.



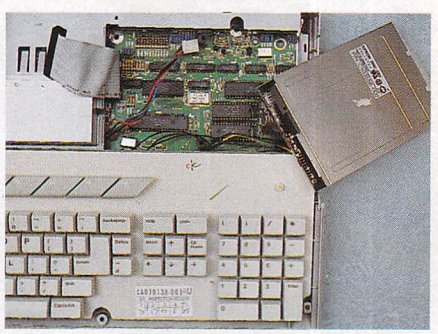
1. Turn the ST onto its belly and remove all the screws



2. Flip the ST over and remove the lid

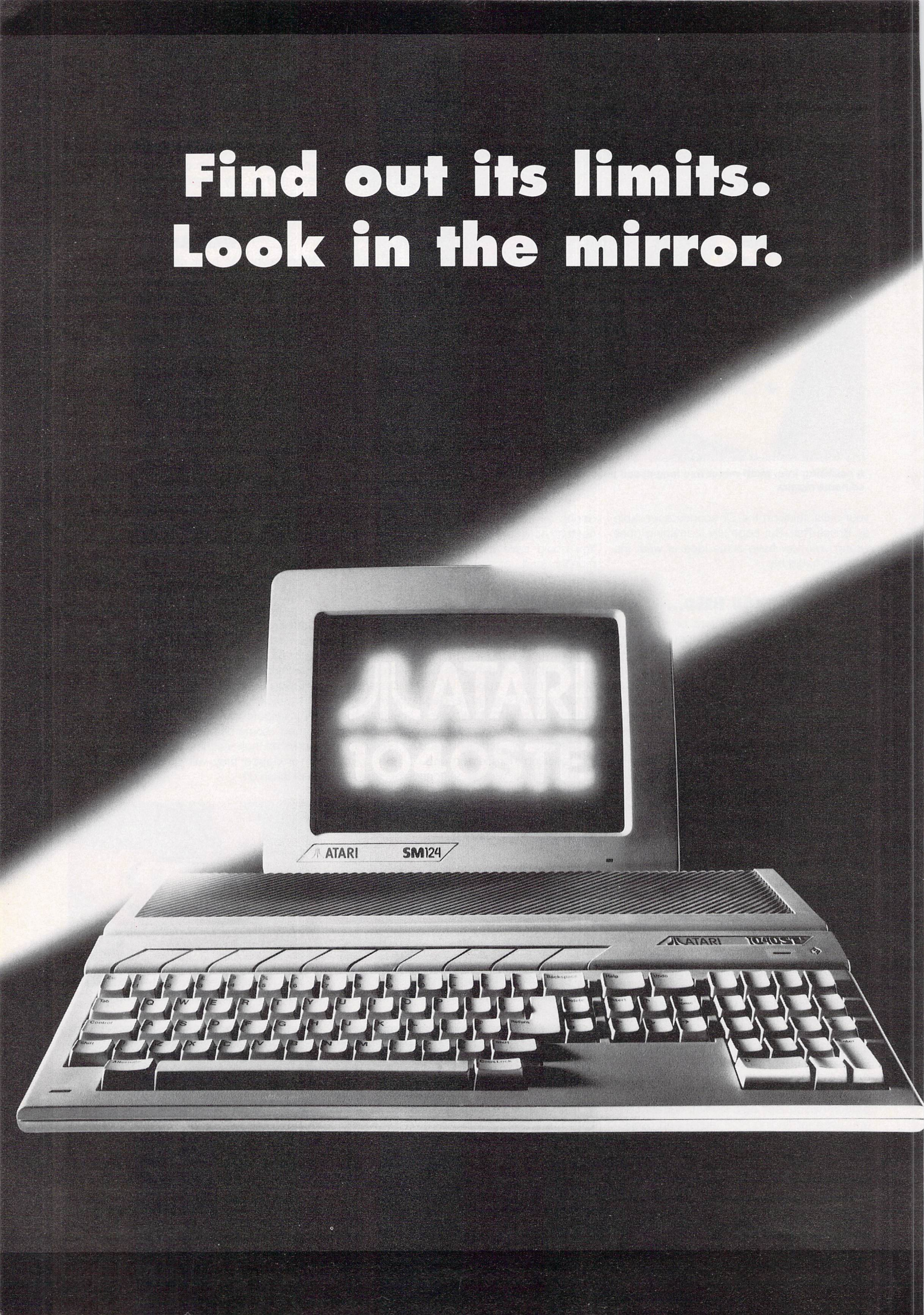


3. BELOW: Disconnect the leads which connect to the back of the drive



4. To fit a replacement follow the instructions in reverse

Find out its limits.
Look in the mirror.



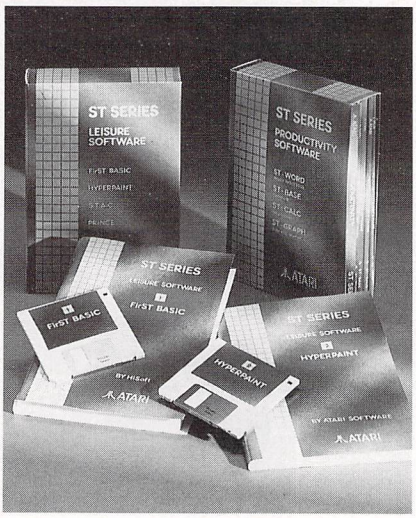
Introducing the powerful new Atari 1040 STE. With such an awesome machine, we're convinced the only limits you'll come across are your own.

Based on the incredibly successful 1040 STFM, the 1040 STE itself goes beyond the limits of its predecessor.

The 'E', by the way, stands for 'Enhanced'. But once you've discovered its amazing array of features, you may consider 'Enhanced' to be the understatement of the decade.

Perhaps the most outstanding feature of the 1040 STE is its graphics. Its palette contains over 4000 colours (all right, 4096 to be exact).

To ensure precise and realistic images, the STE features 'hardware scrolling', enabling smooth scrolling in any direction and split-screen effects. And, with the SM124 monitor, you'll get razor sharp black-out-of-white text that's as clear as the type on this page.



To complete the picture, it is able to 'phase-lock' its video output to an external video source, permitting direct linking to a Genlocking device.

The 1040 won't just have your eyes swivelling in their sockets. Your eardrums will also take a pounding from the 8-bit PCM stereo sound.

The new PCM (Pulse Coded Modulation) sound system's two chips allow the 1040 STE to replay high-quality sampled sounds, in stereo, without burdening the CPU. Or, for even more of an earblasting, just add a couple of RCA output jacks and power the sounds through your own stereo.

Of course we mustn't forget memory. One megabyte of RAM comes as standard. If that's not enough, the 1040 STE provides four SIMM sockets. Simply plug in some SIMM (Single In-line Memory Module) boards and boost the RAM up to four megabytes.

To help you handle all this technology, we've added even more: a Blitter chip, capable of shifting data at high speeds independent of the CPU, and a new version of TOS.

The TOS 1.6 (operating system) has an enhanced file selector with drive-change buttons, improved desktop with file move, MS-DOS compatible disk formatting, and better application installation and auto-booting facilities.

As you'd expect, there's a huge range of peripherals including hard disks, floppy disks, laser printers, colour monitors and even Megafile 44, Atari's unique 44-megabyte removable hard disk.

As well as all this hardware, there are hundreds of software programmes for the 1040 STE - we're even throwing in the ST-Series Productivity and Leisure bundles free.

The Productivity bundle features a database, spreadsheet, word processor and business graphics package, and there's S.T.A.C., FirST BASIC, Hyperpaint and Prince in the Leisure bundle.

If you're itching to get your hands on the controls, there are two 15-pin analogue controller ports (which accept paddles, light-guns and light-pens) and a 9 pin mouse port and joystick port.

With adaptors, up to six people can use the 1040 at one time. Just in case it's too much for one person to handle.

At £499.99 it certainly won't be too much for one person to afford.

The ideal computer at the ideal price, you may think. We think so, too. But there remains only one potential problem: not whether you'll make impossible demands of the 1040, but whether the 1040 will make impossible demands of you.

Please send me further details of the 1040 STE and other Atari products.

NAME: _____

ADDRESS: _____

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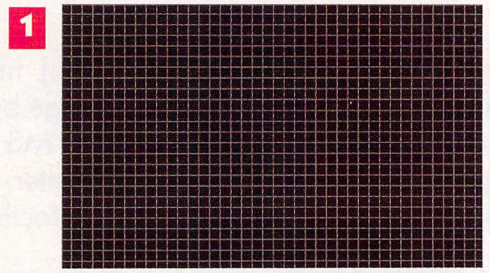
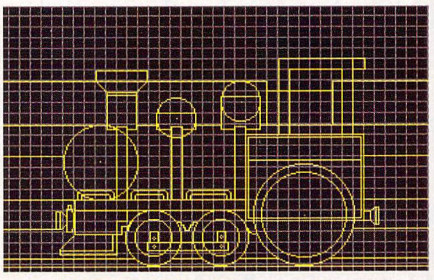
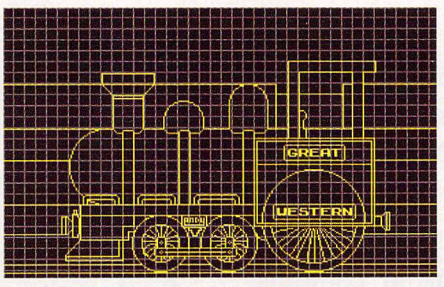
Please send to Atari Corp (UK) Ltd. Atari House, Railway Terrace, Slough, Berkshire. SL2 5BZ.

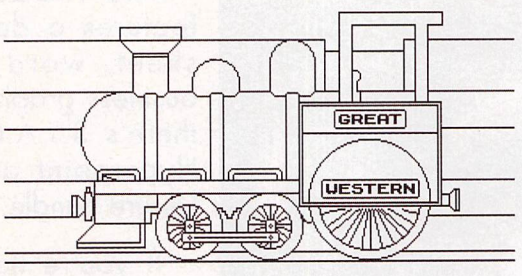
ATARI 1040STE

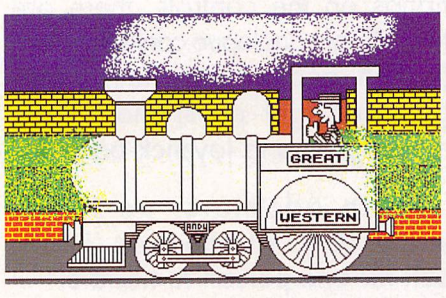
WITHOUT IT YOU'RE JUST PLAYING GAMES

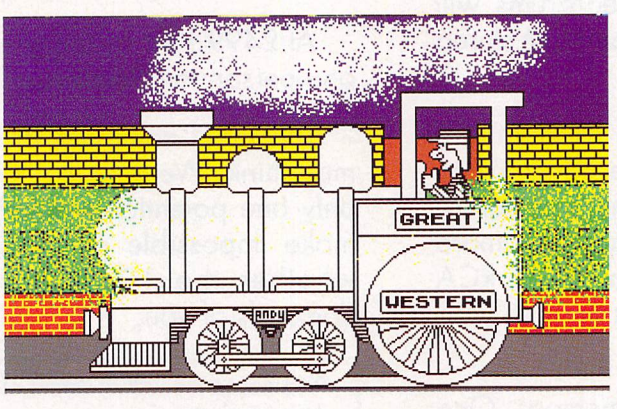


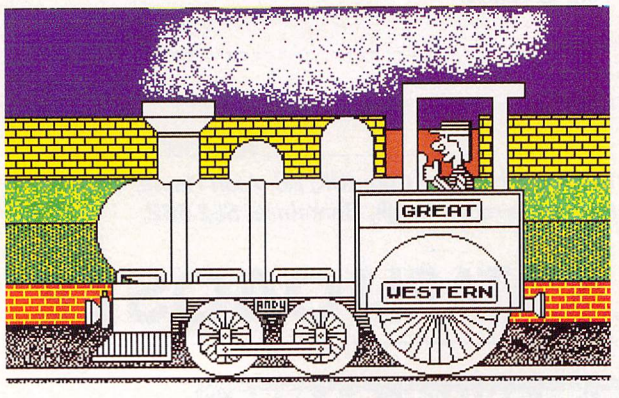












Andrew Lankester demonstrates how to draw one of BR's advanced passenger trains and invites you to paint your own using his simple step-by-step procedure.

First create a grid on the screen to help you achieve better perspective and balance to the finished picture. You wouldn't do this for a landscape, but it's useful for a subject like the train we're going to draw.

Picture 2: Using the circle, rectangle and line drawing functions the outline and main features of the train should be drawn - the boiler, wheels, funnels, cabin and so on. It doesn't matter what colours you use as both the grid and train outline will be painted over later. At this stage it's not necessary to add too much detail to the picture, just the basic outline will do. Just concentrate on achieving a nice balance and sense of proportion between the different components making up the scene.

Picture 3: The basic outline is tidied up and some of the construction lines removed (take a look at the large rear wheel and front of the train). Now some of the detail can be added – like the spokes in the wheels and the name plates on the side of the train.

Picture 4: The colour scheme isn't very inspiring so use the palette changing facility from your art package to change both the background and grid to white. Now change the train to yellow - the picture's already starting to look better.

Picture 5: Using very simple colours and your art package's built-in fill patterns set about colouring in the background – two types of brick patterns for the walls, dark grey for the ground, green for the mid-background and blue for the sky. Choose a spray can or airbrush to draw the smoke billowing out of the train's funnel.

Pictures 6 and 7: Now the grass must be drawn using the spray or airbrush. But before you start splattering paint everywhere, you can save a lot of time if your art package can cut out regular shaped blocks. Cut out the train and background and paste them onto a spare screen. Now spray the grass in shades of greens and yellows – don't worry about splashing paint over the train or walls.

When you have finished, go back to the train and background that you cut out earlier and paste them over the picture. This will obscure any splashes of paint that accidentally landed on the train or walls. You can repeat this process for the ground – cut out the train, spray the ground with the airbrush and then paste the train back in the picture. Art Studio performs this function very easily, but others aren't so good. You may find that the train can't be cut out and so the splashes have to be tidied up by hand after the spraying has been finished.

Picture 8: At this stage you can start filling in the detail of the train. The brass tubing effect of the funnels is achieved by painting narrow strips of pixels in different shades of yellow, some detail in the wheel spokes can be added in preparation for the next stage.

Pictures 9 and 10: A useful trick that Art Studio can perform is to create a brush made up

of different yellows. To make the wheels take on a metallic appearance cut out the picture, paint over the wheels and then paste the picture back again on top of itself. It's all down to Art Studio's ability to choose any colour in the palette as a transparent background. If your art package doesn't have a similar facility you'll have to paint the wheels by hand, pixel by pixel – a magnify function would help here.

Picture 11: Finally, all you need to do is add a little more detail to the train, fill in the sky (I have changed the blue to a nice graduated pink and red sunset), and draw a tidy frame around the picture. These minor changes make a world of difference as you can see.

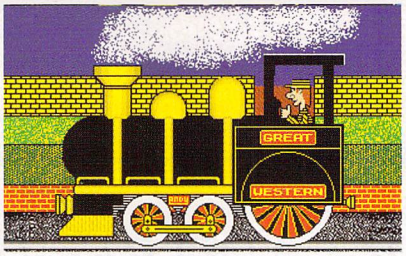
YOUR MAN WITH THE BRUSH...

Andrew Lankester is another in the school of anonymous painters who refused to provide a mug-shot and personal details...

PIXEL PUNCHERS SIGN HERE...

Have you created a stunning image using obscure tricks and wrinkles? We want to see it. Each month, a lucky artist will receive their very own exhibition on these pages. Send at least six images (a finished image and several 'stages') with brief notes detailing how the effects were achieved. Oh! And tell us a little about yourself and include a picture, OK?

8



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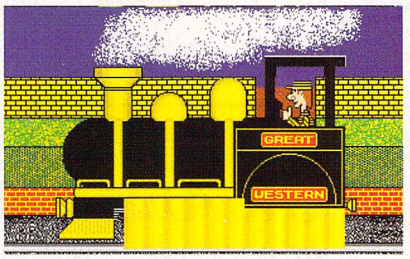

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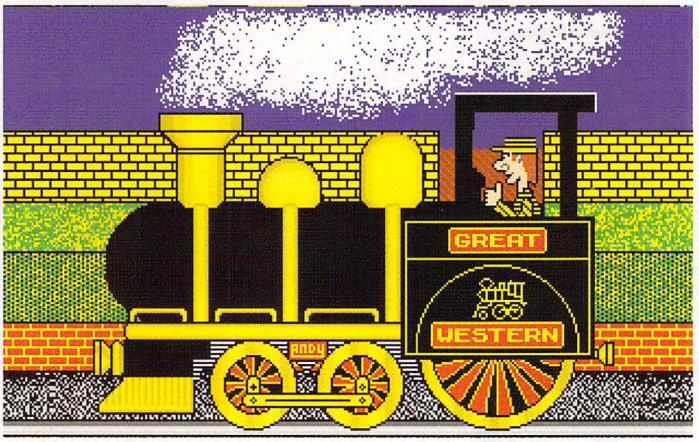
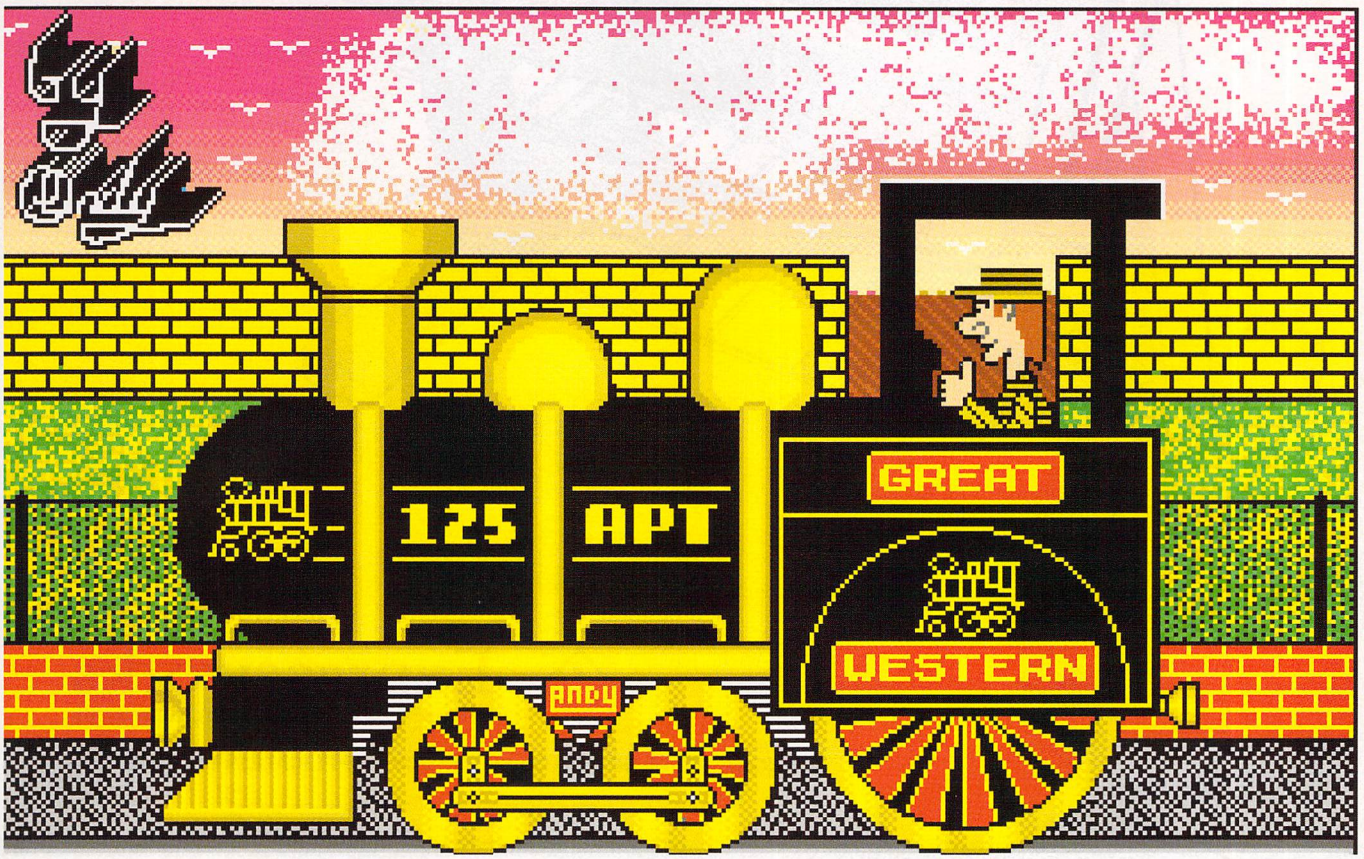


ART-WORK!

11



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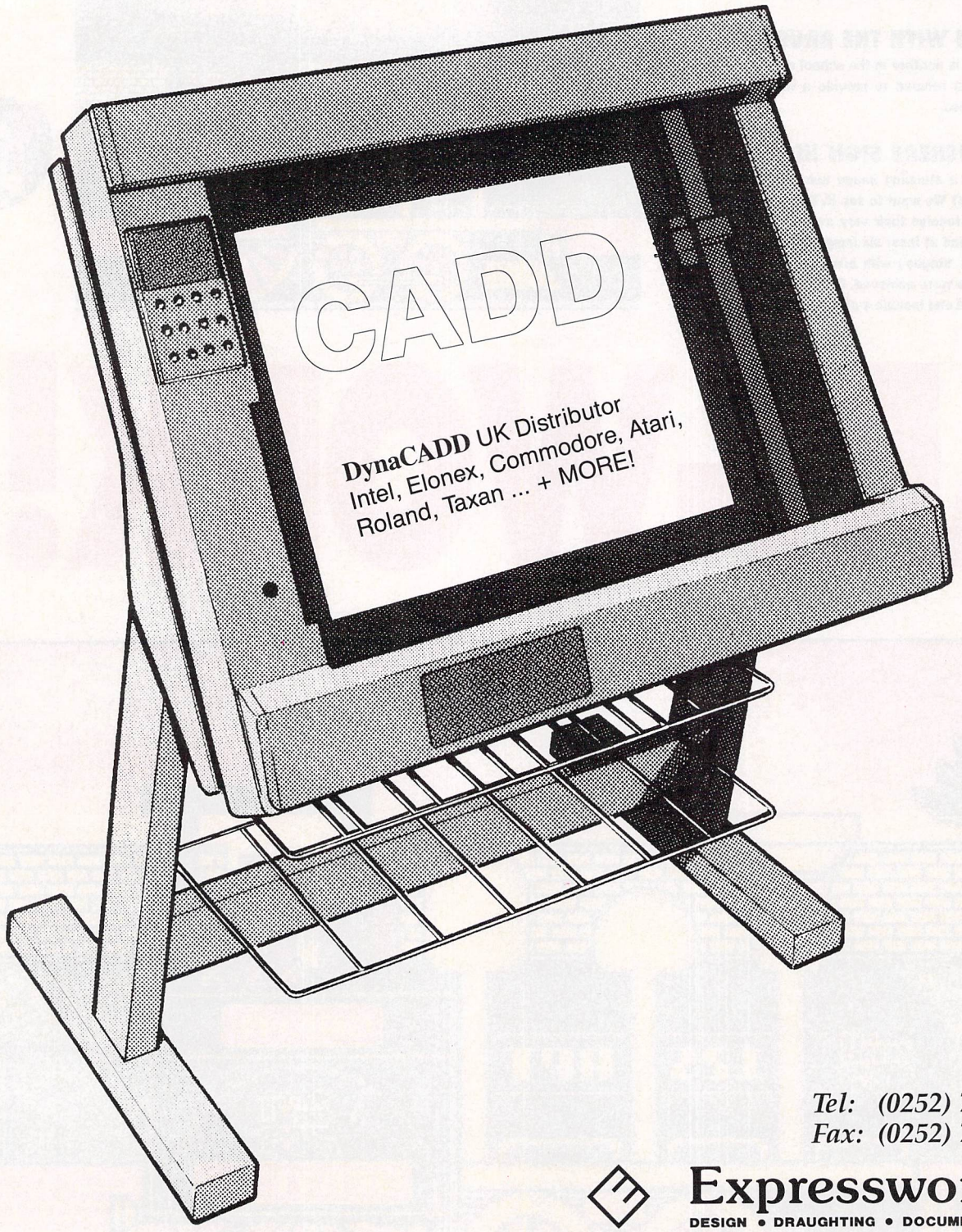

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Why spend a fortune on software? John Butters saves the clams by looking at the better PD offerings...

QUICK NUMBERS

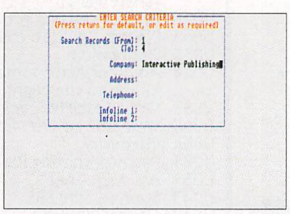
For the busy executive or journo, information has to be at hand quickly - flicking through the old Filofax or card index system for a telephone number can take far too long. As the stock market crashes you don't want to spend the morning looking for your broker's Cellnet number do you? This is where version 1.1 of the database Personal Address Book and Business Address Book comes to the rescue.

This shareware database is from Brian Campbell, author of the famous ST Pools Predictor, and is available in its basic form in the public domain. All your contacts' addresses and telephone numbers, business or otherwise, can be entered into the ST and called up within seconds. Each record fits onto one screen with space for a name, address, telephone number and a couple of remarks.

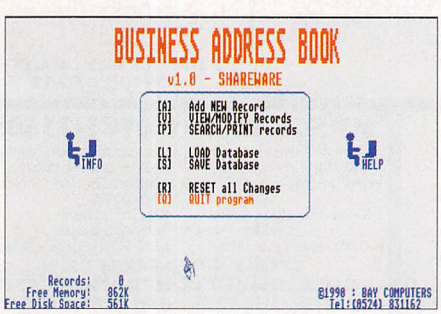
Information is typed straight into the record's field and by pressing Return you'll be led onto the next field. Mistakes can be corrected just as easily by going back to the offending field using the cursor keys and re-typing the text.

The database is saved onto floppy or hard disk and can be reloaded and used later. Relevant records can be found using the search facility and will be displayed on-screen for you to dig out the information you need. Companies or personal contacts can be located by specifying a condition to the record's name, address, telephone number or information line. When the search is complete all the records satisfying the condition laid down will be listed in record order.

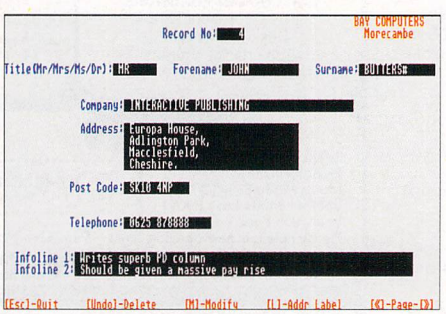
With the information at hand it can be printed on-screen or as hardcopy. The database comes from Bay Computers and if you register as a user you'll be sent additional modules including auto-dialing and mail merging. This is a practical program that can be used by both business and home users.



Entering search criteria



Control the database from one menu



Records can be put on-screen at any time

news

An easier-to-use version of Promouse, (the quick mouse utility) has recently been released. Previously users of the utility had to run it as a desk accessory but now it can be placed in the AUTO folder, loading automatically each time you boot up.

Available now from Goodman Enterprises is a chess program with a difference. Called Data Chess the software prints a chess board on-screen but unlike other programs based on the game, it can't be played. Past world chess championship games are reproduced on-screen, so the amateur player can improve their skills by watching the whole game play automatically, or by choosing certain parts or moves.

The situation concerning the desktop program Gemini, is rather hazy. Rumours suggest version 1.1 of the German program is for registered users only, but apparently the text which reported this was not translated into English. If this is the case libraries containing the program will have to go back to version 1, or scrap the program entirely.

I noticed a letter from Kevin Woolley of Perthshire in last month's Mail pages asking for the name and address of a German PD library. Try Gerstenberg's Software Service, Kafkaster 48, 8000 Munchen 83. Although a huge amount of good software surfaces in West Germany, much isn't translated into English and so is unusable by most people in this country.

MT SOFTWARE

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G106 -Die Alien Blob - Shoot Out (game of the month)
G044 -Flight Simulator
G101 -League Soccer (DS)
G102 - ST-umped - Cricket
G049 -Tennis Simulation
G086 -1st Serve Tennis
G103 -Top of the Pops
G104 -Bermuda Race 2
G105 - Joke Selection
G100 -Slalom, Galactic Ranger, Widow maker
G114 -Skidpan - Racing
G116 -Chunnel - French Tutor Game
G072 -Bumper Jack
G056 -Empire Builder, Jumpster, Lost Treasure
G045 -England Team Manager
G019 -ST-Vegas
G011 -Give Us a Break
G039 -Heads and Hammers
G043 -Treasure Search
G079 -Monkeys + Balloons, Spectral Sorcery, Racing.
G070 -Space Baller, System 5
G061 -Stocks and Bonds
G071 -Rush
G081 -Money Run, Atari Wars, Wall War, Twisty
G040 -Bunny Hunt (not STE)
G018 -Floyd the Droid
G001 -Pacman, Laserchess, Windball, Royale
G002 -Strip Breakout
G020 -Lunar Lander, Spacewar
G031 -Megaroids, Star Battle, Time Bandit
G017 -Cribbage, Minigolf, Pickpocket, Quiz
G077 -Motorbike, Blackjack, Patience
G003 -Azarian, Bridge, Baller
G007 -Cubemaze
G027 -Backgammon, Yahtzee, Stone Age Deluxe
G033 -Cube World
G042 -Rebus, Blockade
G050 -Cheats Disk
G058 -Dungeon Master Levels
G059 -Horoscope
G068 -Ayatolla
G069 -Upstart
G082 -Yahtzy
G083 -Companion
G010 -ST Invaders, Barnyard, Happy 4, Star Trek
G074 -Tunnel Vision, Patience
G109 -Fruit Machine Simulator (not STE)
G110 -Company (not STE)
G111 -Masterbreak, Battleships, Escape
G112 -Slider
G099 -Addiction

ADVENTURES

G087 -Tark
G085 -Snatch + Crunch
G084 -Elven Crystals
G095 -AGT Companion Disk
G096 -Dudleys Dilemma
G078 -Time Adventure
G054 -Tombs of Death
G055 -HERO- Dungeons and Dragons
G057 -DDST-Dungeons and Dragons (SH)
G052 -Invasion
G053 -Assassin
G075 -Nethack (DS) (1 meg)
G038 -Wizards Tower
G040 -Asylum
G037 -Under Berkwood
G015 -King Text Adventure
G006 -Darkness is Forever
G012 -Colossal Cave Adventure
G004 -Doppyworld, Coxleys House, Dark Pearl
G034 -HACK - the original version
G035 -Eamon - Fantasy Role playing

MONO GAMES

G069 -Napoleon
G097 -Hi Tec Trivia, Chordmaster (not STE)
G014 -Anduril, Runners Revenge
G021 -Pacman, Puzzle
G029 -Space Invaders, Chess, Arkanoid
G062 -Arkanoid Construction Kit
G063 -Around the World in 80 Days
G064 -El Bozo, Sherlock, Squixx, Happy 4
G067 -Pentimo
G076 -Shanghai

EDUCATION

G09 -Spelling Made Easy
G016 -Maths Made Easy
G080 -Speller (not STE)
G022 -Kidpotato, Kids ABC, Kidsketch, Kidstory
G023 -Kidsong, Numeric Go Round, Kidpublisher, No Maze
G041 -Kidmusic, Kidpiano, Kidgraph, Kidgridz
G036 -History File (3 disks)
G094 -Colouring Book
G098 -Shipwrecked - Maths, Hangman

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M005 -CZ Voices + Librarian
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M016 -Composer
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M021 - Music Writer (mono)
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M023 -Stacatto
D014 -EZ-Track demo
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D062 -Mastersound Demo

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U039 -WG Data - Database
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U078 -Sheet V2-Spreadsheet (DS)
U034 -Double Sentry Accounts (SH)
U041 -Typing Tutor
U082 -Typing Tutor
U040 -Inventory Pro
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P001 -ST Basic Programs
P011 -ST Basic
P003 -GFA Basic Programs
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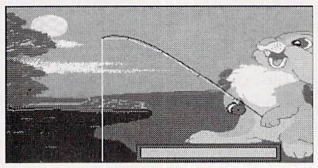
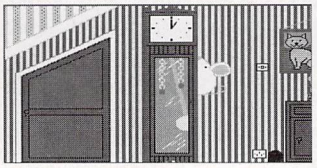
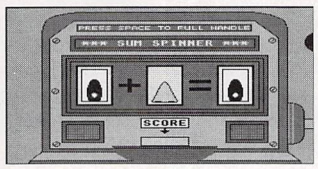


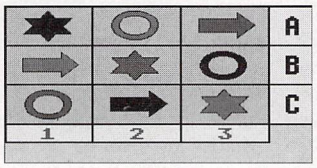
GONE FISHING
Bunny's gone fishing, watch him pull out the pictures and help him spell the words



PLAY TIME
The clock has stopped and needs your help to tell the time again



SUM SPINNER
Play the fruit machine. Pull the handle and spin a sum



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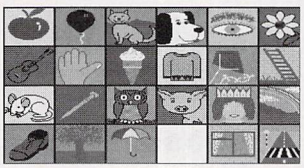

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(ST World May 1987)

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WORD OF ADVICE

Every morning when the paper arrives the second thing I do is turn to the back page to do battle with the crossword. (The first thing is the current affairs cartoon on the front page).

Despite my enthusiasm for crosswords I rarely manage to get further than half way without resorting to a thesaurus, or failing that play Rambo with the paper. It's more difficult to rip up a VDU and that's what you'd have to do to destroy Crossword, a program which gives you 25 brain-taxing puzzles.

Boot up in high-res mono, select which crossword you want and you'll be presented with an empty crossword grid with the clues listed down the right-hand side of the screen. By typing the clue number you'll be prompted to enter your answer, pressing Return will send your word to the grid.

Letters appearing in the same place as the correct answer will be placed in the grid in black and incorrect ones in grey. So, if you have the all the right letters in the correct order the complete word will be black. If your guess wasn't spot on you can reselect the clue and have another bash and when the going gets too tough you can always give in and ask for the solution.

When the crossword's finished, or if you get bored beforehand, you can either leave the program or move on to the next puzzle. I still can't get further than half way but Goodman Enterprises' GBU38 was fun anyway.

ANOTHER BRICK IN THE WALL

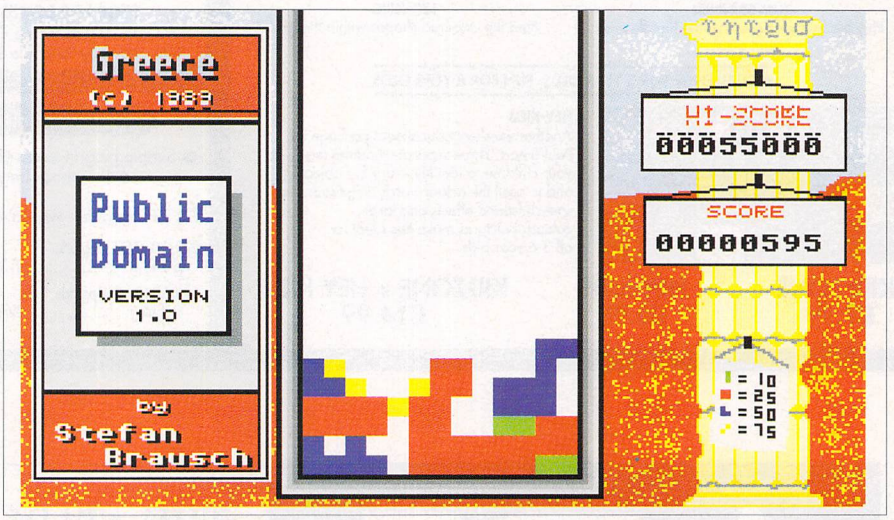
Believe it or not, about 10 years ago trendy teenagers crowded around arcade machines bashing little green creatures. At about the same time as Space Invaders hit the streets home computers started to take off, especially among the young trigger-happy games players. You all know what's been happening since then, shoot-em-ups now leave software houses faster than they can be put into the disk drive.

Each month's games pages are littered with new improved super shoot-em-ups with new improved graphics, new improved sound and new impr... no it's not... it's the same old plot. This is probably the reason behind the success of Tetris a couple of years ago, a game which was so unbelievably simple and original it had to be a hit.

Greece is new to the PD scene and is based on the the same game, although with a few minor differences. For the benefit of those who have been off the planet for a while here's the gameplay. Blocks of varying shapes and colours travel down the screen, and you're meant to arrange them as they fall, creating a horizontal line across the screen.

As this is done the line will be taken away and you'll be awarded with bonus points. Failure to arrange them in a line will mean the blocks build up and once they've reached the top of the screen it's game over I'm afraid. Use the mouse for control. The blocks can be moved left, right or twisted. Keeping the mouse button pressed will freeze the game and so give more time to work out where you're going to put the brick.

As I've said, this game is very simple, original, extremely addictive and can be obtained from Dark Star Public Domain.

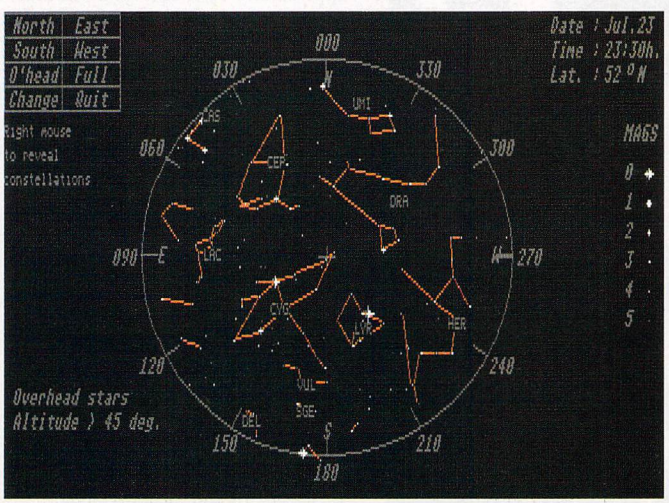


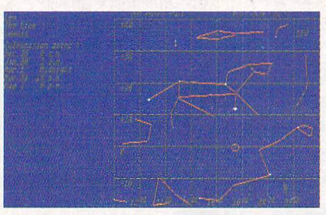
LATE NIGHT VIEWING

How often have you looked up into the clear night sky wishing you knew a little about what was up there? Thousands of stars can be seen and few people know the name of more than a couple of the many constellations.

As this is being written the country has high pressure slap bang above it, the temperature in the office is hovering at about 90°F and the sky is cloudless. This is the ideal type of weather needed when looking at the Amateur Astronomer's Guide to the Night Sky, a program which as its name suggests, guides you around the night sky.

There are two options - Constellation Chart Option and Calendar Chart Option. With the Constellation Chart Option all 87 constellations visible from Earth are listed. Click beside the name of one of them and up pops a map of the stars making up that constellation, as well as a few interesting facts about it. Alternatively you can define your own area of sky that you specificall,y want to examine.



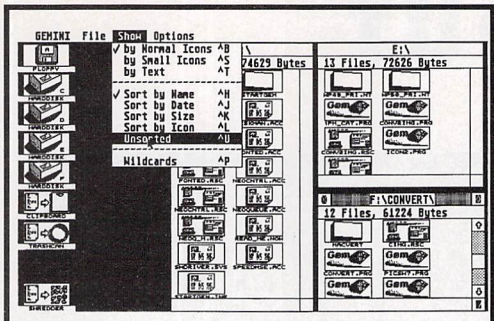


ABOVE: The stars above England at 2330hrs on July 23, 1990

LEFT: Information about all 87 constellations can be found

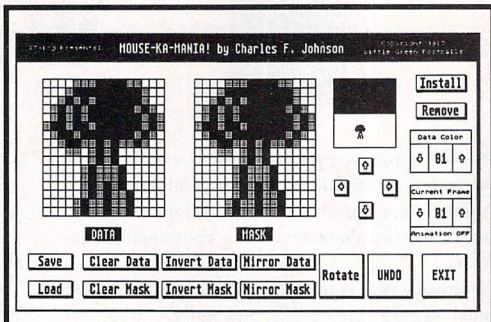
The other choice is Calendar Chart Option. Enter a date, time, latitude, and compass direction and the stars you would see at this particular place and time are shown on a map, with the constellations also being labelled. Entering the latitude means that you can look at the sky over anywhere in the world. The program must be run in medium resolution and is mouse controlled.

The maps have been laid out nicely with stars of different magnitude being identified. The only grumble about the program is that it was a little difficult to get the ST out into the middle of the garden at midnight! And finally, to save PD libraries unnecessary phone calls in the middle of the night, stars can't be seen when it's cloudy! Goodman Enterprises has the program on disk.

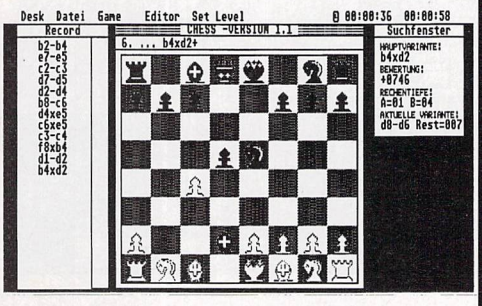


GEMINI – NeoDesk type replacement desktop – ACC87

Britains No.1 PD & Shareware Service



Mouse Pointer Editor – ACC69



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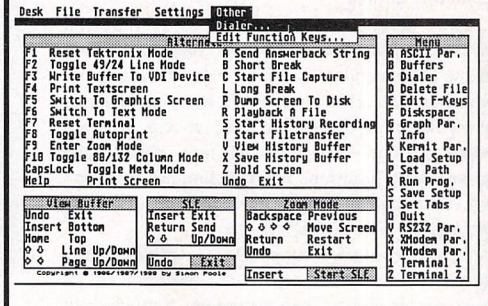
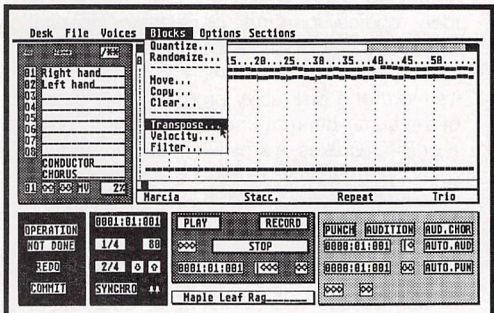
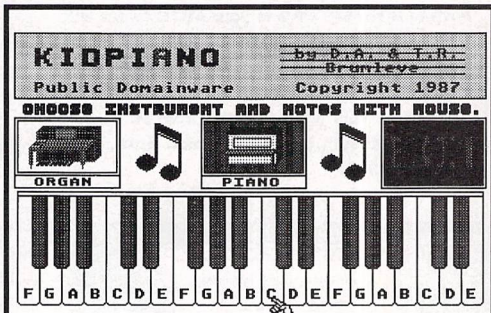


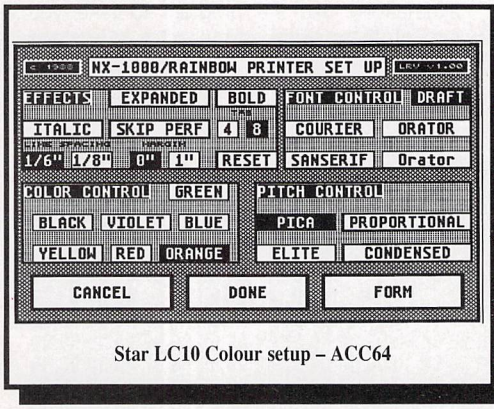
UNITERM comms package – COMS3



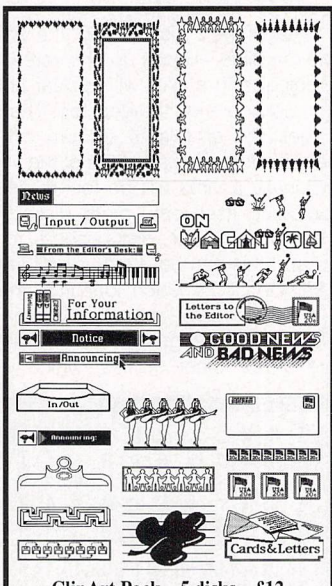
16 Voice Sequencer – MUS36



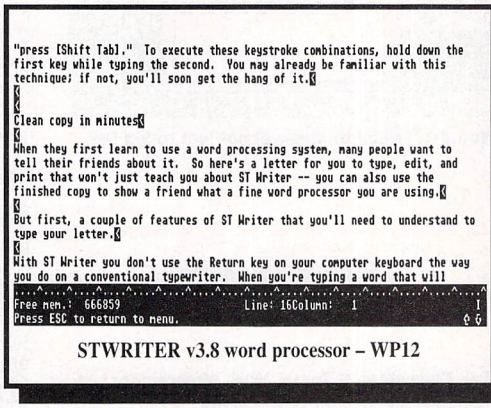
KIDGAMES for youngsters – GAME11



Star LC10 Colour setup – ACC64



ClipArt Pack – 5 disks – £12



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WIPE IT OUT

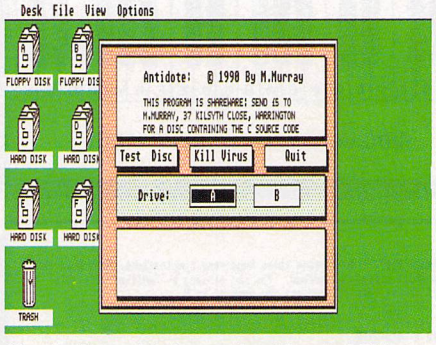
It seems the computer craze in the last few years has been for writing destructive viruses. Apart from giving the Press easy copy every Friday 13th they don't serve any constructive purpose.

Viruses are spread about the world on the most unsuspicious disks and believe it or not people even dare to send them to 'USER (shock, horror, it can't be true - Ed) Every ST owner should have at least one virus killing disk in their collection and check all new disks before putting them into action.

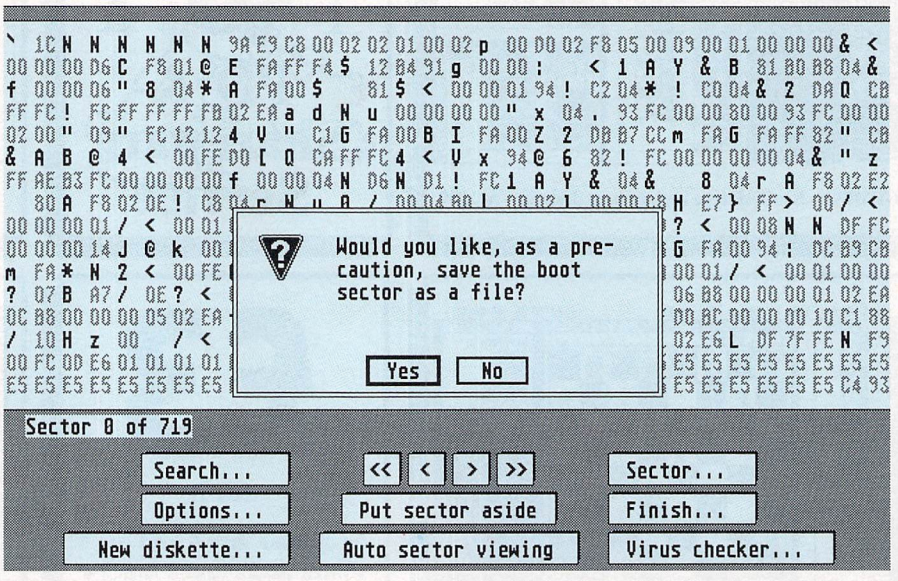
Virus killers are coming out as fast as the viruses and this month I've been looking at some of the PD examples. The main thing to beware of when using such a program is the possibility of overwriting an important boot sector program which isn't a virus, such as in a commercial game. Many programs can't distinguish between the two and if you're not careful you might end up making a 'clean' disk unusable.

A good shareware virus killer is Antidote. Running as a desk accessory it will detect and kill all boot sector viruses and programs. Antidote will give the choice of testing the disk in drive A or B and if it finds anything crawling about in the boot sector will get to work on destroying it.

Putting BOOTSPY.PRG in your AUTO folder will run a check for nasties on boot up. Viruses are pretty complicated things but fortunately you don't need any knowledge of the subject to use this program. This offering came from M. Murray who's at 27 Kilsyth Close, Cinnamon Brow, Warrington, WA2 0SQ.



You don't need to know about 'em to kill 'em



ABOVE: When a virus has been found Clinic lets you save the boot sector as a precaution

The boot sectors of floppies are closely examined by the collection of virus prevention and detection programs in Hospital. Various programs are copied into the AUTO folder of a 'clean' disk, which should then be used for booting up your ST. If you boot using the disk, the program BOOTCMP.PRG will compare the floppy disk boot sector with a file on the disk. If the boot sector has changed at all you'll be warned and the program will stop.

SKULL.PRG is run from boot up and checks to see if the ST is infected. If a virus is found the machine will lock up, the screen will change colour and a skull will appear underneath the disk icons on the desktop. The only way to get out of this is to turn off the machine, so ridding the machine of the virus.

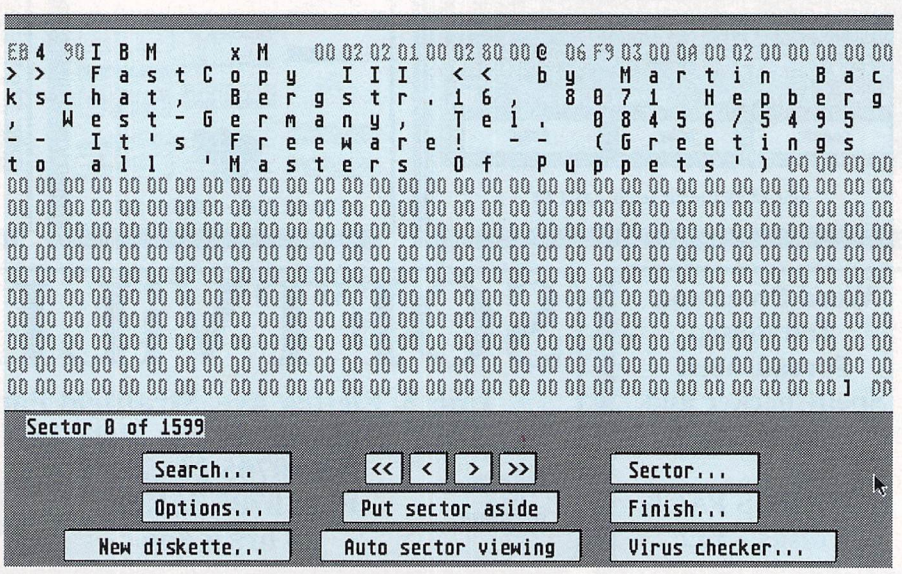
Occasionally a virus will be found too late after spreading itself onto other disks , but which ones? All your disks need to be checked and this can be done using the program MEDICAL.TOS which identifies the 'ill' ones.

As well as the programs I've mentioned there are a few other utilities, which when combined with the above make Hospital an ideal choice for virus prevention. Hospital was found on Goodman Enterprises' GSD9.

Clinic is a little more than just a virus killer, it's more of a disk utility program. Like others of the same genre it checks the disk in drive A or B for viruses, warns if it finds one and if it does, lets you rewrite the boot sector. As a precaution you're asked if you'd like to save the boot sector to another disk before losing it forever.

In addition to this you can ask for the disk to be searched for a string of characters, which can be entered in hexadecimal or ASCII form, and will show the whereabouts of any which are found. You can jump to certain sectors of the disk and view what's there, or alternatively use the program to take you through the disk sector-by-sector or in steps of 100.

BELOW: The contents of the disk's first sector, with the options labelled below



WHERE TO GET IT...

Bay Computers, 3 Teasel Walk, Morecombe, Lancashire, LA3 3QQ. Tel: 0524 831162.

Dark Star Public Domain, 34 Victoria Avenue, Porthcawl, Mid Glamorgan, CF36 3HG.

Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent, ST3 1SW.

M. T. Software, Woodstock House, 14 Lanes End, Totland, Isle of Wight, PO39 0AL.

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

Pdom PD Atari Public Domain & Shareware Software

Miscellaneous

L1 – 68000 Assembler, Xlisp, STlogo, Tiny basic.
L8 – Forth from Bradley Firmware. A fully functioning implementation of FORTH.
L9 – ST ICON v6.3, based on SNOBOL4. Complete manual.
L10 – Little Smalltalk Incudes Smalltalk language, full manual, example progs. and editor.
L13 and L14 Modula–2 Development System v1.0 from ANA–systems.
L15 – Sozobon C Compiler. A complete implementation of the C language as defined by K&R. DSD.
M9 – Music Writer lets you create music on screen as good as Music Studio.
M15 – The Accompanist 16 Voice MIDI Sequencer. Fully working by Henry Cosh, does everthing!
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M20 – Soundtracker player & modules from the Amiga. Also docs & source in 68000 and GFA basic on formats.

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GR7 & GR8 – AIM v2.31 of the Atari IMage processor DSD. 1MB.
GR14 – Public Painter v0.1 the great drawing program Now loads Degas fonts and pictures and also .IMG excellent! MMR.
GR17 – Picture convertors. To and from Print Master, Degas, NEO, Tiny, IFF, SPEC512, IMG, Postscript, GIF, Mac GIF stripper.
GR19 – FractaZoom V3.1 the most comprehensive fractal generation program available Upto 4 types of curve, zoom in on parts of the display, movie making, full screen or preview mode. Full documentation within the program. DSD.
GR20 – .IMG utilities. Convert any Degas, Tiny, NEO, MACPaint, Spectrum 512 to .IMG format. Also IMG viewers.
GR21 – ANI ST the amazing fully featured animation package.
GR22 – SPRITE MASTER by C Skellern A professional sprite editing package tailored to suit most programming languages. CSR.
GR24 – Pearle the 3–d ray tracing package. Amazing animations can be created using this excellent fully working ray tracing graphics package. CSR.

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A48 – Uniterm V2.0e. THE Comms package for the ST.
A96 – Sheet v2.0. powerful all features spreadsheet, .WKS compatible. 1280 rows by 280 columns. DSD.
A121 – POOLs– Expert Results Predictor v2.5 by Bay Computers. Excellent pools predictor.
W2 – STwriter Elite V3.6 full documentation and quick reference etc. on the disk, very good word processor.
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MP 21 – TEX the document processor and typesetting system. Includes its own programming language, handles graphics and equations with ease. 6 disk pack for £15.00. MMR. DSD.
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Has the release of the ATonce AT emulator signalled the summit of PC emulation development? John Butters wears the mask...

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A PC of decent specification will set you back several thousand pounds and it wouldn't be unusual for a large business to pay more than £10,000 for the best.

Many ST users who suffer the dreadful PC at work, would like to continue with their endeavours in the evening, but common sense and frugal spending has ensured that their machine is better specified but unfortunately incompatible with the work PC.

Alternatively, with all this quality PC software around, STers may wish to take advantage of some of it. How can they get their ST to accept software written for this alien computer? Well, it is possible and is achieved with an emulator, (usually in the shape of a circuit board), plugged into the ST.

There are a number of them on the market, PC Speed, Supercharger and more recently pc-ditto II the upgraded hardware version of the software-based pc ditto.

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the two versions is speed. Standard XTs run at 4.77MHz (although clones run at anything up to 12MHz), whereas the AT will run at a breath-taking16MHz, with the majority running at about 12MHz.

WELCOME ARRIVAL

Until now it has only been possible to emulate the XT and so the release of ATonce, the first 80286 emulator, will be welcomed by many. ATonce took a three-man team, headed by company director Wolfgang Michael, just over a year to develop at the headquarters of Vortex Computer Systems in Germany.

So far more than 5,000 boards have been sold on the continent and now that the emulator has been fully translated, it's making its move into the UK marketplace.

Running from versions of MS-DOS higher than 3.2 (not supplied) it has a Norton CI rating of 6.7 (...fast) and disk access speeds much quicker than its rivals. The popular spreadsheet program Excel takes nearly three times longer to load using PC Speed than with ATonce, and not surprisingly, the speed of ATonce is the reason behind its name.

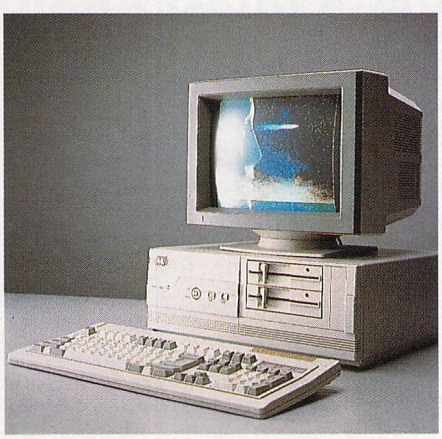
One of the biggest grumbles about the PC is its user-unfriendliness. Long lines of text need to be typed into the machine to make it do even the simplest of operations such as copying disks or deleting unwanted files. The process can be made easier by using a program called Windows 3.

OPEN WINDOW

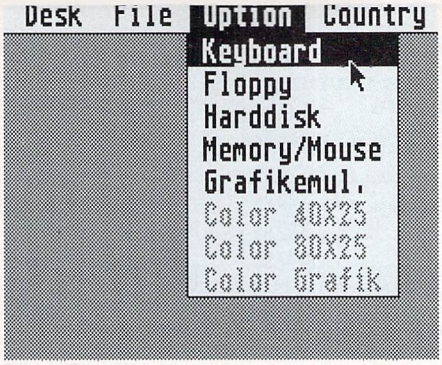
Microsoft's Windows 3, the PC equivalent of GEM, will work on an XT but is made almost unusable because of the incredibly slow speed at which it runs. This problem is overcome with the 80286 chip and as such, is probably the reason why people should be looking closely at ATonce as a PC emulator.

The board supports all ST hardware you may own. Atari's SLM804 laser printer is fully compatible with the emulator as are most hard disks, and the mouse is re-configured as a Microsoft rodent for use with programs such as Windows.

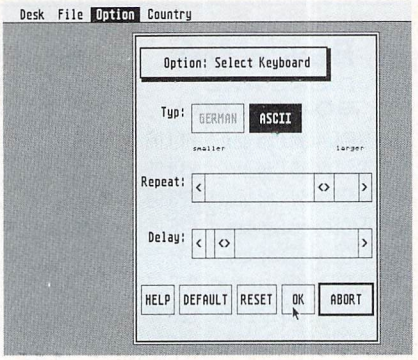
The XT emulators can only address up to one megabyte of RAM and so have not been able to take advantage of extra memory STers might have tucked away. ATonce has broken this limitation, being able to take use of all the RAM, up to the maximum four megabytes, making it especially attractive for owners of the Mega ST4, who will now benefit from their extra memory.



The actual thing would set you back a few thousand pounds



The configuration program INSTALL.PRG is completely mouse controlled



A typical configuration menu. The keyboard is set to the user's preference from this one

You can have the display in either colour or monochrome but unfortunately there's still no EGA display. A choice of the usual CGA and Hercules, plus the less regular Olivetti and Toshiba T3100 video modes give it more display modes than its competitors.

The available modes work fine for text-based programs such as word processors, spreadsheets and databases but are not especially ideal for graphics-based packages, which would be better run in the EGA or VGA modes not yet available on the ST.

Fitting the small L-shaped circuit board onto the 68000 microprocessor could turn out to be very messy if you're not a dab hand with a soldering iron. Silica Systems will fit the board with a three-month warranty on the fitting and the computer will be posted back within three days, all for £34 (and without the problem of your ST's warranty being void).

Owners of the STE and Mega range can get around the problem of soldering by buying an adaptor for £26, and those wanting to buy an ST so they can have the emulator can buy a 1040STE with ATonce pre-fitted.

UP AND GOING

With the board locked away under the bonnet, it's time to get started. A supplied disk holds all the necessary start-up software. Firing up the GEM-based program INSTALL.PRG presents several configuration options.

The menu options listed across the top of the screen are Desk, File, Option and Country. Desk tells you little more than the software's version number, File is where you go to quit from the program, while Country swaps the software's wording between German and our native tongue.

Dropping down Option provides a list of configurable features. You're given a choice of keyboard, floppy, hard disk, memory/mouse or grafikemul, which under closer investigation turns out to be monitor/graphic emulation.

Setting the emulator to your own preferences is straightforward. The keyboard can be changed between German and ASCII and the repeat and delay rates adjusted to your own taste. If you stupid like what I am, and can't avoid feeding the mouse into the wrong port, can get around the problem by changing the mouse port number from within the software.

The software must be told which drive it's to boot DOS from, either drive A or C, but you can also boot your machine as a normal ST. Before rushing to buy an ATonce board it must be remembered that most quality PC software expects to be installed on a hard disk. The most common PC word processor WordStar eats up seven megabytes of disk space!

Installation is quick and easy so shouldn't take much more than five minutes and then by quitting from the program you can start ATonce from the desktop. You'll soon be asked to enter your DOS disk and you're up and running.

It is obvious the 40-page A6 manual has been translated from a foreign language. By careful reading you can just about make head or tail of it, but it's far from clear and this is a serious problem considering the damage which could be caused to your machine by misreading some of the fitting instructions – so tread carefully.

The most important question is does it work, do you really get full AT compatibility? Various examples of well-known PC software were taken from our sister PC publication and all of the software worked without any problems.

So what are the drawbacks? For a start it would have been a good idea to include DOS software, everyone's going to need it and if they don't already own there will be a delay in being able to use the emulator.

An EGA display would've been nice but it would only be available in monochrome and apparently too much speed would be lost for EGA emulation to be worthwhile.

Acting just like a normal IBM-compatible right down to the Alternate+Control+Delete reset, ATonce does everything its claimed to do. The device heads the list of PC emulators, being much faster and also about £50 cheaper than its competitors.

THE BOTTOM LINE

Features:16-bit, 8MHz 80286 CPU, supports existing ST hardware, Norton SI rating 6.7, 704kb DOS memory, makes full use of spare memory, sound support.

Ease of use: Fitting could be a problem but installation and start-up software are easy to use. DOS is not supplied.

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MASTERCLASS

ROCK SCHOOL

Getting orchestrated isn't quite as painful as you think! Ian Waugh gives you the score...

There are dozens of sequencers for the ST, each with their own features and foibles, but it's only when you start to create a serious piece of music that you discover their strengths and weaknesses. Sometimes an idea will come to you when exploring your sequencer. At other times there may be something you want to do, but can't quite see how to do it.

In this month's Masterclass we'll look at some musical applications and see how they can be performed on a range of sequencers. If you don't have the software used in the examples use the general principles propounded here with your own sequencer.

The sequencer is a very complex piece of software, so it pays to re-read the manual to make sure you aren't missing out on any features, particularly functions activated by a combination of mouse and keyboard.

Not all sequencers are created equal, and even some budget programs may be able to do things the big boys can't. For example, the Time Reverse function in Dr.T programs such as KCS (Keyboard Controlled Sequencer), MRS (MIDI Recording Studio) and Tiger Cub is quite rare. When applied to notes the piece will play backwards. It's particularly effective with Bach – try it and see.

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The easiest way to set up a sequencer is to allocate track one to MIDI channel one, track two to channel two and so on. If you have 16 tracks and 16 sound sources (say one or two synths/expanders), that may well suffice for the majority of your pieces.

Most sequencers enable you to assign each track to a MIDI channel which it will then transmit regardless of the channel it was recorded on. If you can name the tracks, name them after the sound that corresponds to the MIDI channel they are assigned to or the music part they are playing.

MIDI THRU

If you use a master keyboard, it's useful – if not essential – to hear what you're playing using the sounds you'll eventually be using - not necessarily those on the master keyboard. As each sound will be assigned a different MIDI channel this could mean altering the transmission channel of your master keyboard for each music part.

However, most sequencers have a MIDI Thru function which transmits incoming data back through the ST's Out socket. This is often tied in to the sequencer's tracks, so selecting a track assigned to MIDI channel 10 for example, will transmit the MIDI Thru signal on channel 10. In other words, to play a different sound from your master keyboard you don't have to transmit on a different MIDI channel, you only have to select a different track on the sequencer.

One thing to remember is that if the thru signal is routed to your master keyboard, and the signal is set to the same MIDI channel that your master keyboard is set to receive on, you'll hear double notes – the ones you're physically playing and those same ones being transmitted from the sequencer. This sometimes sounds odd and it will halve the polyphony of the keyboard.

The solution is to switch Local Control off on your master keyboard. C-Lab's Creator/Notator for example, has an Auto-Off Channel setting which lets you select a channel which MIDI Thru will not transmit on. So find the MIDI Thru option and switch it on. Some sequencers, such as Notator mentioned above, have additional options.

Dr.T's Tiger Cub works on a slightly different principle. Cub has two settings known as merge and rechannelise. Merge is similar to MIDI Thru in that it transmits whatever it receives. Cub always records on the lowest numbered empty track, so there's no tie in between track numbers and MIDI channels, but rechannelise lets you select the MIDI channel the Thru data will be transmitted on.

TEMPO CHANGES

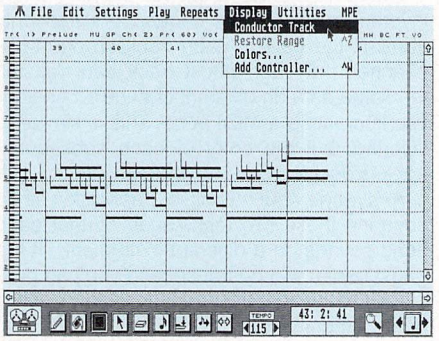
A sequencer's metronome helps keep time while you record the various music parts. But many types of music include changes in tempo such as ralls (rallentandos) and accels (accelerandos) which is slowing down or speeding up of tempo.

Even modern rock and pop music, which normally stay at the same tempo from start to finish, can benefit by increasing the tempo slightly towards the end. How do you put tempo changes into your music? The basic idea is to record the music at a set tempo using the metronome and then insert tempo changes into it. To do this your sequencer must be able to handle tempo events. There are no MIDI messages for tempo changes so this feature must be built in.

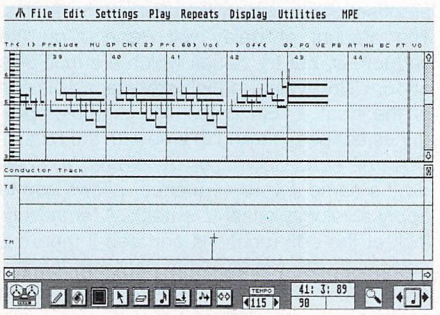
Each program however, tends to have its own method of handling tempo. C-Lab's Notator uses Pseudo Events and these can be inserted into the event list at the required places. It supports both absolute and relative tempo changes. The latter are useful if you wish to alter the overall tempo of the piece at a later time.

Tempo changes can be recorded into a track in real time by altering the tempo indicator. Furthermore, the Transform function can be used to convert any type of MIDI data (say Mod Wheel data) into tempo changes. Virtuoso and Prodigy enable you to insert tempo events into arrangements, and Virtuoso additionally supports relative tempo changes. These Tempo Maps can be toggled on and off.

Most Dr. T programs have a Conductor Track used specifically to control the tempo of the music. In Tiger Cub you can actually draw tempo changes into the track. Enter the Edit screen and select the conductor track from the Display menu. Scroll the display until the required bars appear on the screen. In the example illustrated on the left the music is slowed down (rall) for effect towards the finish of the piece.



The main tempo is 115bpm. We'll begin the rall just before bar 42 and slow the tempo down to 90bpm. Place the cursor (which becomes a cross-hair in the conductor window) near the end of bar 41 and high enough in the window to register 90bpm. The display to the right of the tempo indicator shows the bar position and the current tempo of the cursor. Click the right mouse button



Move the cursor on and insert slower tempos

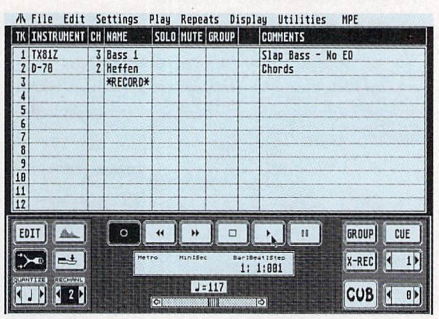
SAVING VOICE DATA

One of the problems with MIDI sequencers is that they don't store the sounds along with the notes. After creating a suitable set of sounds for an instrument or two, you'll probably have to save them to a RAM card (if the instrument supports these) or to a separate voice editor or librarian.

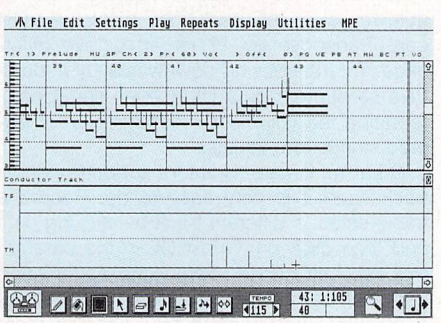
System Exclusive messages are, as their name suggests, exclusive to particular manufacturers and/or instruments. Sys Ex is used mainly to handle voice data in editor and librarian programs. If a sequencer can record Sys Ex then you can save voice data along with the music data, which is much more convenient than storing the music and sounds in separate places.

Different sequencers have different methods of handling Sys Ex, however not all sequencers can record Sys Ex, especially the budget examples, so it may be worth checking this out before you part with your hard-earned clams.

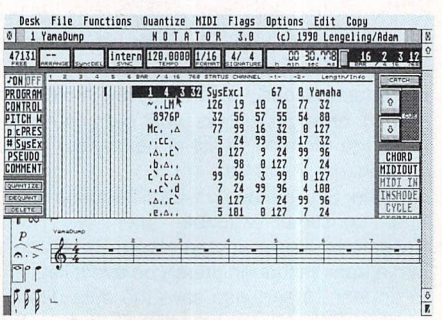
C-Lab's Creator/Notator, for example, will record it just like any other data although you can disable recording in the MIDI Input Handling menu. The data is shown in the event editor and can be edited like any other data.



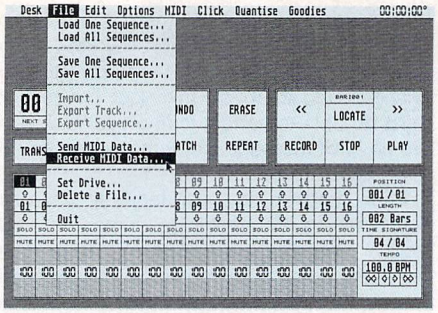
Selecting Merge (Thru) and Rechannelise on Dr.T's Tiger Cub



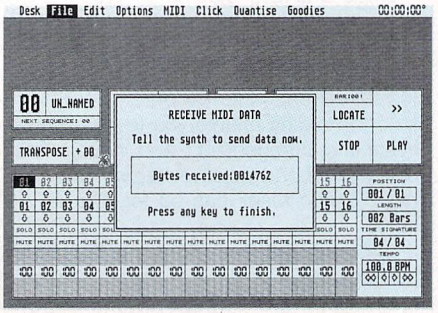
If you make a mistake, Control and a left mouse click will remove the event



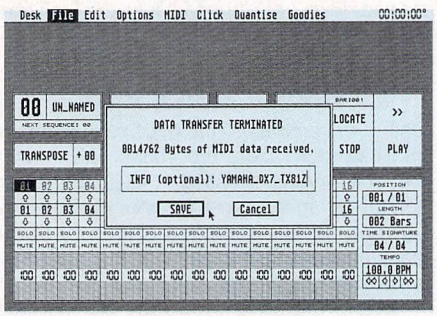
System Exclusive data captured by C-Lab's Notator and displayed in the event editor



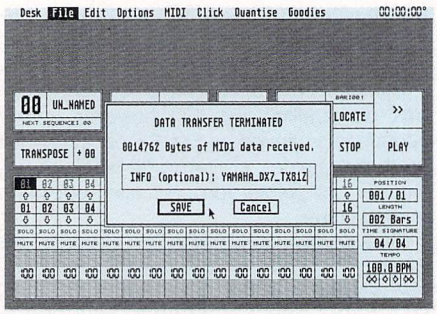
Press the necessary buttons on your synth to trigger a Sys Ex dump. Trackman records the amount of data received



If you have several dumps to store you can send them one after the other. Press a key when finished and enter a filename. The program offers the manufacturer's name (which it gets from the Sys Ex dump) as a default



You can enter a 16-character name and although only the first eight characters are used for the filename, the extended name appears when you load the file for transmission back to the synths



Most modern instruments can be made to send Sys Ex data by pressing buttons on their front panel, but a few can only send it if they get a request from the receiving instrument (sequencer), which may be more difficult to arrange, unless you can enter the message (normally a list of hex bytes) in the sequencer's event list.

Some Sys Ex dumps can be quite large and consume valuable memory. Hollis Research's Trackman can record Sys Ex data into a track (although there's no event list for it to appear in) and also save the data directly to disk. Select Receive MIDI Data from the File menu.

GHOST TRACKS

A ghost track is the name given by C-Lab's Creator/Notator to a track which uses another track's note data. Virtuoso contains a similar idea which it calls shadow tracks. These have several uses, many of which can be duplicated on sequencers without a dedicated ghost track facility. However, as a ghost track doesn't actually contain any data, it's very economical with memory.

Ghost tracks are great for creating thick, layered sounds. Most sequencers can only transmit the data in each track on one MIDI channel, but each ghost track can transmit the same data on different channels. Another use is creating a MIDI echo. This is similar to layering, but the entry of each subsequent track is delayed causing an echo effect.

A strange, but effective application is to combine these two techniques so that each echo sounds on a different instrument. If the ghost tracks can be transposed you can double a line by making it play in octaves, fifths or any other interval.

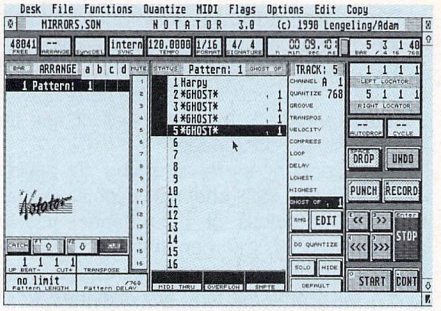
If your sequencer doesn't have ghost tracks you can achieve layering by copying one track to others and playing them back on different MIDI channels. However, one of the advantages of a ghost track is that it'll play whatever is on the original track even after editing, so if you change the original track don't forget to copy it to the others again.

To create MIDI echo you must be able to offset a track in time. Most sequencers have an offset option which enables you to do this. The amount of delay will depend on the sequencer, but try values which are multiples of 16. Using values which are exact divisions of the beat - 16th notes, for example- produces echoes playing in time with the music.

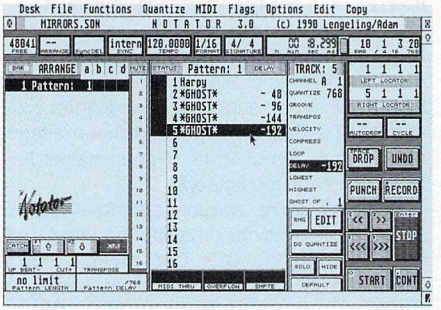
A true echo decreases in volume. You can do the same if your sequencer allows you to apply a velocity offset to a track. Alternatively, look at the edit functions and see if there's a Velocity Scale feature which will reduce the velocity of the notes in a track by a certain amount.

To add an interval your sequencer must be able to selectively transpose a track - most can. Transpose by 12 for an octave difference. Try transposing downwards by a fourth (five semitones), or a fifth (seven semitones), reducing the volume on these tracks for layered strings and vocals.

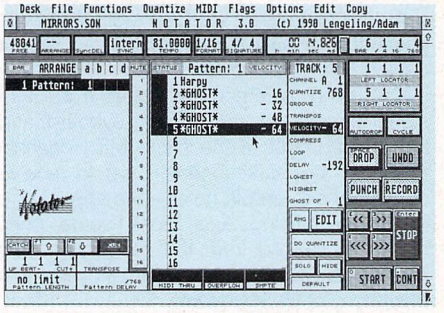
C-Lab's Creator/Notator supports ghost tracks and it is very easy to do. Record a track, select a different track by clicking on it and then click on 'Ghost Of' in the parameters list. Left click to select the pattern and track number you want to ghost. To create an echo, copy this track to two, three or more other tracks by dragging.



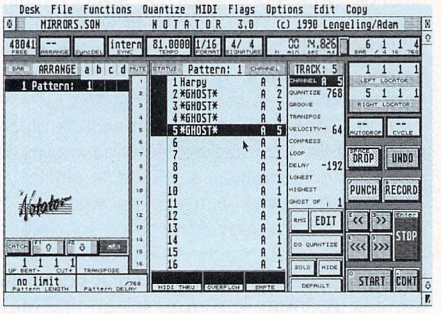
Select a delay of -48 for the first ghost track and -96, -144 and -192 for the other tracks



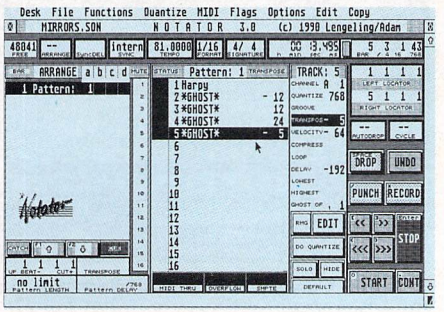
This will create a 16th note echo. Next, reduce the velocities by -16, -32, -48 and -64



To play the ghost tracks with different sounds, change the MIDI channel numbers and to add harmonies, transpose them



These are just a few of the things you can do with a sequencer which go beyond straightforward recording and play back. Examine your sequencer's facilities carefully and you could discover a host of fascinating functions which make both the sequencer easier to use and your music more creative.



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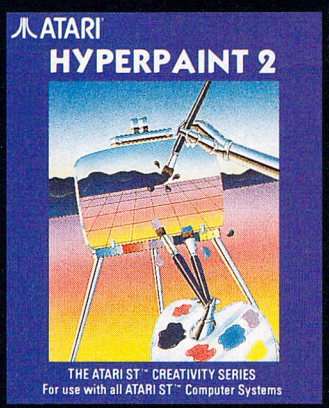

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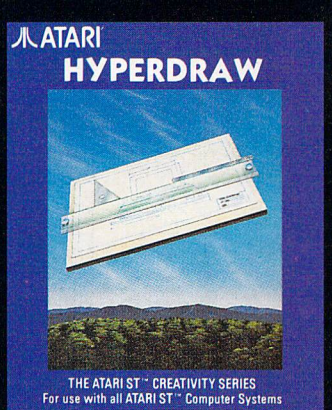

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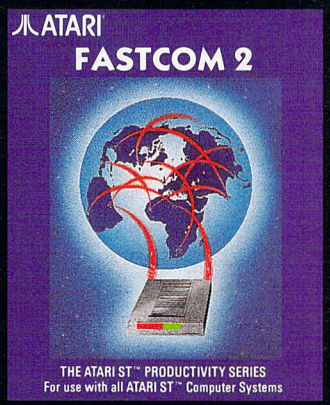

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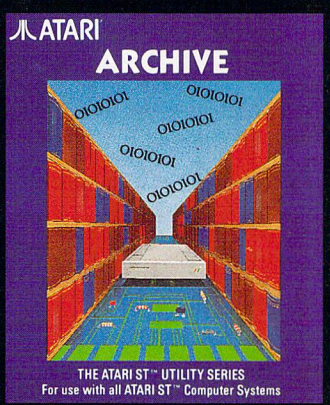

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LINE NOISE

Is a user friendly comms package a contradiction of terms? Roland Waddilove investigates Atari's Fastcomm

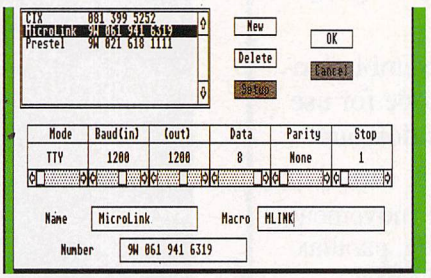
Product: Fastcomm
Supplier: Atari UK
Telephone: 0753 33344
Price: £49.95

Communications, one of those subjects you either love or hate, but whatever your views there are few people who haven't been tempted at one time or another. One of the most off-putting aspects of comms is the technical jargon and mysterious commands which must be typed into your micro to link up with some distant computer.

It's nice to see comms software that attempts to simplify the whole process of getting online. Fastcomm from Atari, isn't a new product, but this autumn sees the release of version 1.66. The changes are minor rather than major so it's not worth upgrading, but if you're looking for a first time package then Fastcomm is ideal.

Down the left-hand side of the screen is a panel containing nine icons and across the top is a standard GEM menu bar. Clicking on the first icon, a telephone, calls up a telephone directory containing a list of 'phone numbers and names of services or BBS'. To dial up and logon to a BBS or whatever, all you need to do is click on the directory entry and then on the Dial button.

This assumes that you have already entered some names and numbers into the program's telephone book, which is easily accessed by clicking on the second icon. You can type in the name and number, set the mode to TTY (MicroLink, Telecom Gold and so on), or VuData (Prestel), set the baud rate (in and out so split rates are possible), data, parity and stop bits. If you're not sure what to use TTY, 1200/1200 baud, 8N1 covers everything but Prestel, which is VuData, 1200/75, 7E1.



Setting up the auto-dialing phonelink

The software also needs to know a few details about your modem - simply a matter of clicking on the modem icon then clicking on your modem (or the nearest thing) on the list of hardware displayed.

A call log remembers each service you dial, how long you are online, the time and date. It's useful (and frightening) to mentally calculate the effect on your 'phone bill.

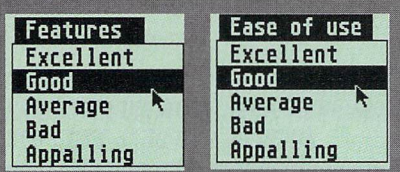
A simple text editor is built in to the comms software and this enables you to type email and bulletin board messages and save them to disk. When you're online they can be read from disk and uploaded. A Record button captures all the text that appears on the screen and saves it to disk. In addition to sending and receiving Ascii files, you can also up and download programs using the Xmodem file transfer protocol.

I couldn't get the 'phone book to automatically dial through our switchboard and had to manually key in the number. Apart from this and also being a little expensive, Fastcomm is a good package.

THE BOTTOM LINE

Features: Autodialing 'phone book. Text editor. Xmodem file transfer. Call log. Viewdata (Prestel) handled well.

Ease of use : The icons and GEM menu bar are a doddle to use.



SPLASH IT ON ALL OVER

Michaela Jayne creates a masterpiece with the first art package to use the STE's extended palette

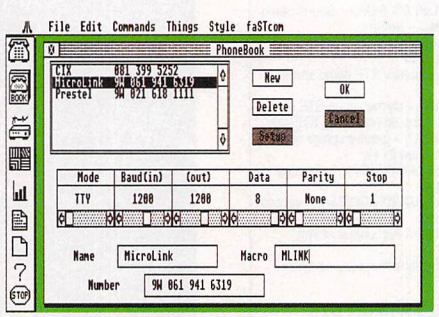
Product: HyperPaint
Supplier: Atari
Tel: 0753 33344
Price: £21.99
Configuration: All STs, mono and colour

Since the STE was released last Christmas I have been eagerly awaiting software that makes use of its extra features. After a long wait Atari has finally updated HyperPaint.

Be warned - many of the improvements aren't immediately obvious and you might miss them if you're not careful.

The first improvement is the extended Set Palette dialog box with four extra buttons and RGB sliders ranging from 0 to F. To choose a colour use the Make B/W, Make Red, Make Green and Make Blue buttons which act like filters. The Select button now accesses all 4,096 colours (displaying 512 different colours at a time). Just click on a colour to discover its RGB value.

HyperPaint now loads Art Director pictures in addition to IMG, Degas and Neochrome and if a picture has been saved in a different resolution it can be easily converted using fast dithering techniques. Need to draw a big picture? No problem - the size of IMG screens is limited only by memory, but large pictures need lots of RAM. Another plus is that scrolling has been improved and is now under fine mouse control.



This fudged screen was made by snapping several screens with a PD utility, loading them into Hyperpaint and then pasting them onto the canvas

The cursor coordinates are shown in magnify mode, but you can only see them when you're drawing. This can lead to confusion as you can't tell where you are, only where you've just painted!

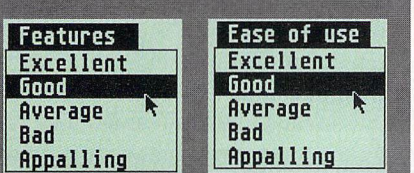
To save memory and disk space delete GDOS and its associated ASSIGN.SYS and font files. It isn't possible to print out or enter text in anything but the default font and size, but HyperPaint is useful on a 520ST with a shortage of RAM and disk space.

HyperPaint is one of the few art packages that handles IMG files. It has a good range of facilities and is easy to use, but it's limited because you can display only 16 colours at once.

THE BOTTOM LINE

Features:All the usual artist's tools. Needs more colours on screen.

Ease of use: The GEM-based software is very easy to get to grips with. Icons, pull down menus and dialog boxes abound - who needs the manual?



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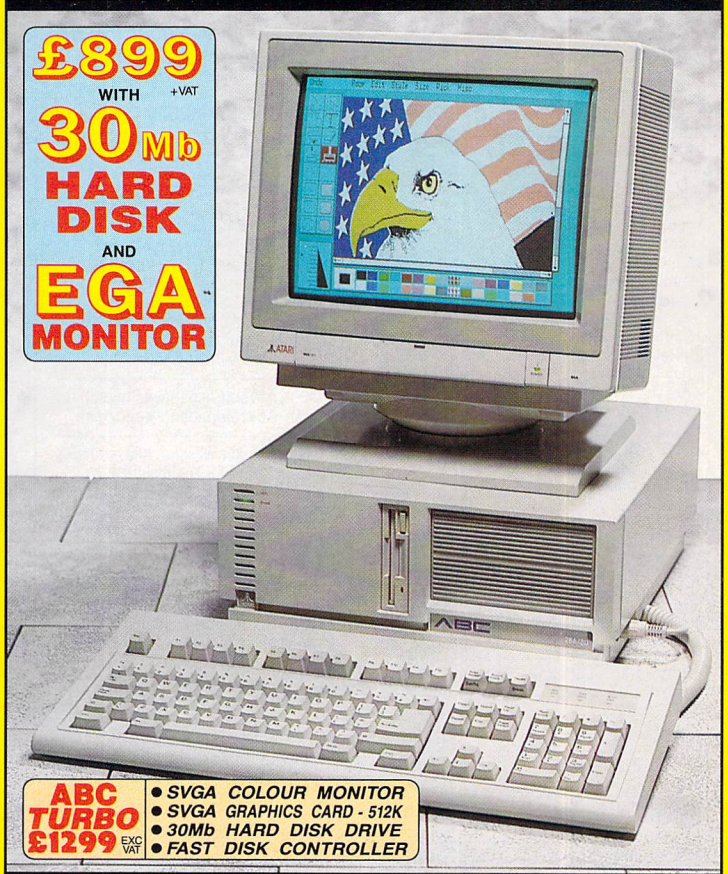

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INTERACTIVE RESCUE

GAMES CRAZY!

Q I wonder if you could help me? I haven't bought any computer magazines for quite a while and use my ST mostly for word processing and I'm a bit out of the games scene.

What I'm looking for is a game similar to Space Pilot or Death Star (these two oldies first appeared on the BBC I believe and were programmed originally by Pete Johnson). Are these games available for the ST? If so, do you know where I can get them from?

If they haven't been made available, I would be grateful if you could recommend a multi-scrolling shoot-em-up for me. One which is fast, easy to play and doesn't require any puzzle solving (I don't mind collecting things however...) and something which will keep me coming back for many years.

Steven Smith, Ponteland, Newcastle.

A **Are you putting me on? You want me to recommend a scrolling shoot-em-up just for you? Have you any idea just how many of them are out there?**

Look, Probably the best thing you can do (especially if times are hard and you can't afford computer mags), is to have a rummage in the public domain wherein you'll discover a veritable Aladdin's cave of shoot-em-up software, all available entirely free, gratis and for nuthin'.

If you're having trouble finding them, you could try casting an eye over our public domain pages for a list of suitable suppliers.

There's a lot of junk out there but a lot of very good software too. It's all free so what do you have to lose? The only problem now is that you'll have to make up your own mind about which one you like...

CONFUSED OF SUSSEX

Q Are you Andre Willey, Roland Waddilove or Jerry Glenwright? These titles are annoying. I wish adventure column writers would say who they are too (who is the Faun?).

Anyway, my problem is that I don't know what to do about upgrading. I wish to have 1Mb of memory because I want to use Wordup using Degas pictures and more fonts which really needs one meg.

I don't know whether to buy a memory upgrade for my 520STFM (it's one with a double-sided drive and TOS V1.09) or to sell my STFM and buy an 520STE Power Pack (then 512k upgrade). I have read about the STE and it seems that it is a simple operation to upgrade its memory, but with an STFM, you have to find out what type of chips it has (surface mounted or plug in).

I don't want to mess about too much and I'd like the better sound and TOS of the STE and the memory expansion is cheaper and easier as well.

Should I sell my STFM and buy an STE or buy a memory upgrade for my STFM?

Trevor Booth, Etchingham, Sussex.

A **Whaddaya talking about "...these titles are annoying...? You mean you don't understand the system of human beings enjoying an associated name? How are beings identified on your planet?**

Don't sell your STFM. In times past, they were a little more difficult to upgrade, but with the multitude of solderless RAM upgrade releases (see previous two or three issues) you shouldn't encounter too many problems.

The STE is easier to upgrade being able to make use of plug-in SIMMs and they're cheaper, but the slight saving in money and effort is not worth the draggy selling process involved in off-loading your old machine.

SOUND SYSTEM

Q I was wondering after seeing accessories to pipe the STFM's mono sound output to loudspeakers, if I could directly connect my machine to a Rotel RA-820AX amplifier in order that I could play the sound through speakers or record on to tape? Don't laugh (laugh, me? - SSS) I have a Philips CM8510 monitor which takes CVBS output in the form of RCA phono plugs.

Would it be safe to connect the sound output (a phono plug directly connected to the relevant pins on the ST's output) to my amplifier, or would it be too quiet or loud? If the answer is no, how can I record tunes from the ST on to tape?

William White, Chanfield, Oxon.

A **It's perfectly possible – and safe – to connect the sound output from your Atari ST direct to your Rotel amplifier. By doing this, you'll be able to record the sound on tape or listen to it at increased volume through your hi-fi.**

And now, the only question outstanding is why on Earth you want to record the ST's appalling output?

BLITTER EXPERIENCE

Q I have recently bought the new Atari STE computer and I am exceptionally interested in how to access the new features such as the blitter, the musical capabilities, extra graphics functions and so on.

I am 14 but I am a fairly good programmer and I do the odd bit of machine code

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

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programming. Would I need a book or even more experience before I start?

B Riley, Accrington, Lancs.

A Worry not sonny, for you sound like an able bodied young blot to me and entirely capable of accessing the new features to be found in your latest silicon acquisition.

A book would help and there are several new titles supporting the extended features of the STE. Have a rummage in one of the High Street book stores to see what's out there (and pay particular attention to anything by Abacus).

From time to time, STE-specific features will appear in our accompanying programming mag-on-a-disk RunTime. Each issue is crammed with all you need to know about all things technical.

Look, listen and learn...

MODEM MAYHEM!

Q I have recently acquired a Prism Modem 1000 second-hand. It came without a connecting lead or any installation instructions.

I would like to connect it to my Atari but I don't have much to go on. Are you familiar with this product?

Incidentally, I have not been able to obtain a phone number for Prism Microproducts LTD, whose name was on the carton.

Stephen A Walters, Letchworth, Herts.

A Prism Microproducts can be telephoned on 081 804 8100. In the meantime if you're handy with a soldering iron, try making up a lead using two 25-way D connectors and the following connections: pin 2 to pin 3, pin 3 to pin 2, pin 7 to pin 7, pin 20 to pin 20 and pin 22 to pin 22.

Comms software? You could use the simple VT52 emulator supplied with the ST. Alternatively, grub about in the public domain, there's dozens of comms programs. One of the best is Uniterm, a complete communications experience which provides such exotic features as macros and telephone directories as well as numerous terminal emulation modes.

BIG FLOPPY #2

Q Re: the Big Floppy query from N Martin of Essex ('USER 55). Your reply that the ST could not format disks of more than 800k was the reason that high density drives could not be used is erroneous. I refer you to the drives now available in Germany from Fischer Computer. These are 1.44Mb 3.5 inch drives, however, not the old fashioned 5.25 inch. I believe that you will find that the real reason why they cannot be used without additional hardware is that the data transfer rate is higher than the ST controller can cope with.

Les Kneeling, Ilford, Essex.

A Yeah, right, and without a patch, GEM will be able to access and use the extra data from a 1.2Mb or 1.44Mb floppy? I think not.

MONO STE

Q I have a suggestion for Graeme Dobie who was having trouble with mono emulators.

Like Graeme, I too have a 520STE and have, in the past, experienced problems with some of the emulators available. However, even though you say that neither of the emulators in the public domain work on the STE, I have found that the program mono_emu.prg by Mick West works perfectly on my machine.

I was going to suggest that Graeme should run his emulator from an auto folder, but I'm sure he has tried that. If not, then he should first make sure that his machine boots in medium resolution using one of the many STE boot programs available, and placing it in the auto folder followed by the emulator. The emulator referred to is version 5.00and is available from libraries or from the author himself at the following address: Mick West, 27 Lynton Drive, Shipley BD18 3DJ.

J A Bain, Hilton, Inverness.

8-BIT BLISS!

Q After many years of wonderful computing from my trusty old 8-bit Atari XL (yeah, yeah, get on with it! - SSS), I have finally decided that I simply cannot resist the lure of all that wonderful 16-bit ST software any longer! Fine, you might think, buy an ST, keep my XL, get the goodies in 16-bit format and continue to use all of my favourite software on the XL. Unfortunately, it's not that simple. In order to help pay for the ST, I must sell my beloved 8-bit, disk drives and other peripherals. Luckily, I've managed to work that so I can keep the 8-bit software, I don't have to sell that.

So, the question. Will I be able to use the software from my XL on my ST? Obviously, I realise that I can't just switch on, bung the 8-bit stuff into the ST's internal drive and run it, but is there an emulator of some kind available?

I've heard of Mac emulators, PC emulators – even CP/M emulators, but what I wonder is, is there one for the 8-bit?

Robert Mutton, Sunderland, Tyne and Wear.

A Well, I'm afraid the short answer is, yes! There is an 8-bit XL/XE emulator available for the ST –two in fact (although one is simply an upgrade of the other).

The emulator will run 8-bit software, but the process can be rather hit and miss and shouldn't expect everything to run. Fortunately, the emulator is available from the public domain and won't cost you anything to try.

There is of course, the problem of transferring the programs to the ST in the first place. As you rightly said, it isn't possible to bung the programs into the ST's drive. What you need is TariTalk from Page 6 Publishing, PO Box 54, Stafford.

TariTalk consists of a cable which connects the ST and XL/XE and some communications software to facilitate transfers.

The TariTalk cable and software package is very reasonably priced at a little under £20.

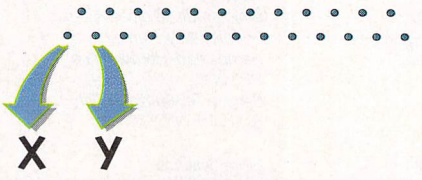
LET THERE BE STEREO...

A Regarding your answer to Eli Geller's as to whether his computer has stereo capability, well, it does in fact! The chip inside the ST, the famous Yamaha sound chip, is in fact, a stereo chip. Atari in its infinite wisdom however, decided to wire the circuit for mono output.

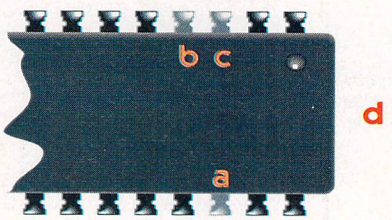
Here's a diagram, showing you how to to get stereo output from your humble ST. Of course, the circuit uses the printer port, but why anyone would write a program which prints and plays music in stereo at the same time, is anyone's guess!

Also of note is that the sound is fine when created using the chip, but if your program or game uses sampled sounds, there will be a little distortion if played through the chip's circuit. This is nothing to worry about, just use the monitor or TV's speaker instead.

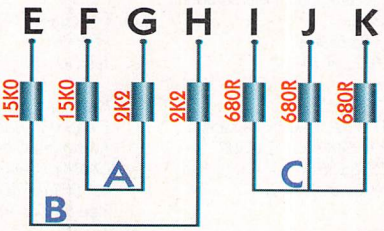
A J Lee, Basingstoke, Hants.



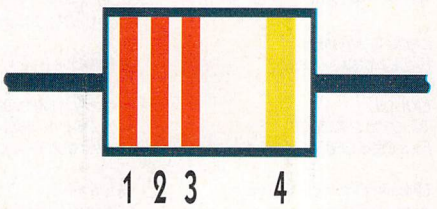
Socket connections from the printer



Connections to the Yamaha sound chip (note the orientation notch)



Mount the resistors on a piece of Veroboard



Resistors are colour-coded to determine their value

datafile

The page that points the finger at the companies in the know

PRICE CHECK

All prices were correct at the time of going to press and as usual, include VAT. A comprehensive buyer's guide can be found in the pages of our sister publication, ST World.

COMPUTERS

Atari 520STE Power Pack	£399.99
Atari 520STFM Discovery Pack	£299.99
Atari 1040STE Super Pack	£499.99
Atari 1040STE Professional Pack	£499.99
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Atari Mega ST2	£934.99
Atari Mega ST4	£1,279.99
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Stacy 4Mb	£2,069.99

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Atari SM124 monitor	£149.99
Philips CM8833	£310.49

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Atari SF314 double sided	£149.99
Cumana 1Mb 3.5in	£79.99

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Atari Megafile 60Mb hard disk drive	£689.99
Supra 30Mb hard disk	£499.95

OTHER HARDWARE

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Atari Mouse	£24.99
Casio MT240 MIDI keyboard	£89.95
Epson LX850 printer	£320.85
EuroLink Modem	£259.95
Linnet Modem	£174.80
Linnet 1200 Modem	£274.85
Star LC10 mono printer	£263.35
Star LC10 colour printer	£297.85

BEST BUYS

Each month the editorial team selects the best five buys in one type of software package. This month, database packages:

Base Two, Electric Dist £29.95
Basic and cheap
K-Data, Kuma.....£49.95
Easy-to-use with good text entry
Prodata, Arnor.....£79.95
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S/base Pers. 2, Precision.....£99.95
Best all-rounder
S/base Prof, Precision.....£249.95
For business users

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611 Lincoln Road, Peterborough
PE1 3HA.
Tel: 0733 68909
Fax: 0772 561071

Atari UK
Atari House, Railway Terrace,
Slough, Berkshire SL2 5BZ.
Tel: 0753 33344
Fax: 0753 822914

CIX
Suite 2, The Sanctuary,
Oakhill Grove, Surbiton,
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

Ladbroke Computing
33 Ormskirk Road,
Preston,
Lancashire PR1 2QP.
Tel: 0772 203166

MicroLink
4 Moons Park, Burnt Meadow Road,
Redditch,Worcestershire,B989PA.
Tel: 0527 67585, 0527 69459
(sales and marketing)

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
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Service Tel: 0442 237777
Sales Tel: 0800 200700

Silica Systems
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Standish WN6 OXQ.
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US Gold
Units 2/3 Holford Way,
Holford, Birmingham
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DIARY DATES

UK EVENTS

19 to 24 October 1990
Atari National Tour
Organiser: Atari UK
(0753 33344)
Visting: Edinburgh, Newcastle, Leeds, Liverpool, Bristol, Birmingham

6 to 9 December 1990
Computer Shopper Show
Organiser: Blenheim Database
(0625 879970)
Venue: Wembley Exhibition Centre, London

4 to 6 January 1991
16 Bit Computer Fair
Organiser: Westminster Exhibitions
(081 549 3444)
Venue: Hammersmith Novotel, London

OVERSEAS EVENTS

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.*

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Ampower Computer Repairs
15a Alcester Road, Studley, Warwickshire
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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

Silica Systems
1 - 4 The Mews,
Hatherley Road,
Sidcup, Kent DA14 4DX
Tel: 081 309 1111

W.T.S. Electronics
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Bedfordshire LU4 8EZ.
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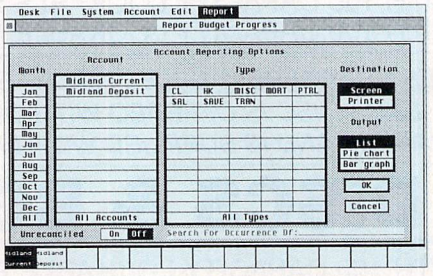

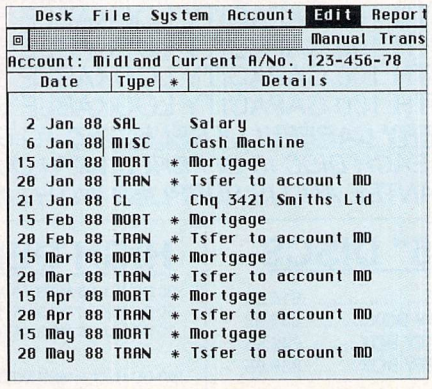

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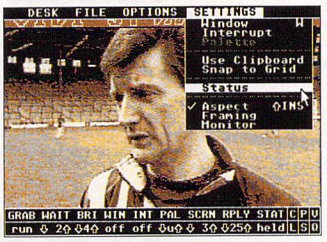

Rombo's Vidi-ST is a fully featured digitiser consisting of a plug-in cartridge, sophisticated picture manipulating software and a comprehensive manual.

As will as grabbing single images from TV or Video for use with art programs or DTP packages, the Vidi can actually capture pictures and display them in real time – at up to 25 frames a second!

This is the essential package for anyone who wishes to make use of the full graphics potential of their ST. With a saving of £15 off the retail price this is an offer you should not miss.

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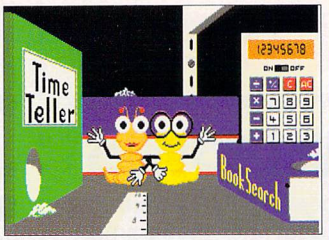

Softstuff is one of the top software houses producing high-quality educational software for the ST. And Things to Do with Numbers is one of their best creations.

On the disc there are three games designed to combine learning with fun in such a way that the child using it will automatically pick up various useful elements of mathematics – without even realising it.

With its clearly designed grahics and well thought out structure, Things to Do with Numbers is a value packed educational tool which, with a saving of £10 is even better value for money

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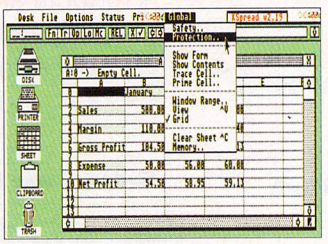

It is also an extremely easy and efficient system to use with your own accounts, a local club or in fact anything where you need to keep an eye on your money and plan for the future.

And for just £34.95 K-Spread 2 represents excellent value for money. If you're looking for a good value spreadsheet with premier performance, look no further – order your copy today!

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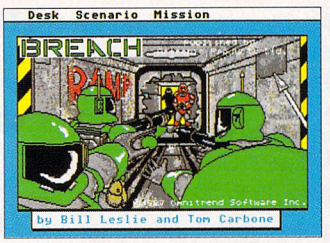
Once more . . . unto the Breach

Breach is a game which demands nerves of steel and sound tactical judgement for you to win.



You can select from a number of scenarios. For example with Breeder your task is to wipe out an alien installation and rescue Federated World citizens who are being used as fodder for man-eating monsters.

Breach is one of those games you just can't put down. With its addictive gameplay, tactical combat and facility for extra scenarios, its guaranteed to kep you coming back for more.

● ***We're also giving away an extra scenarios disc – absolutely free!***

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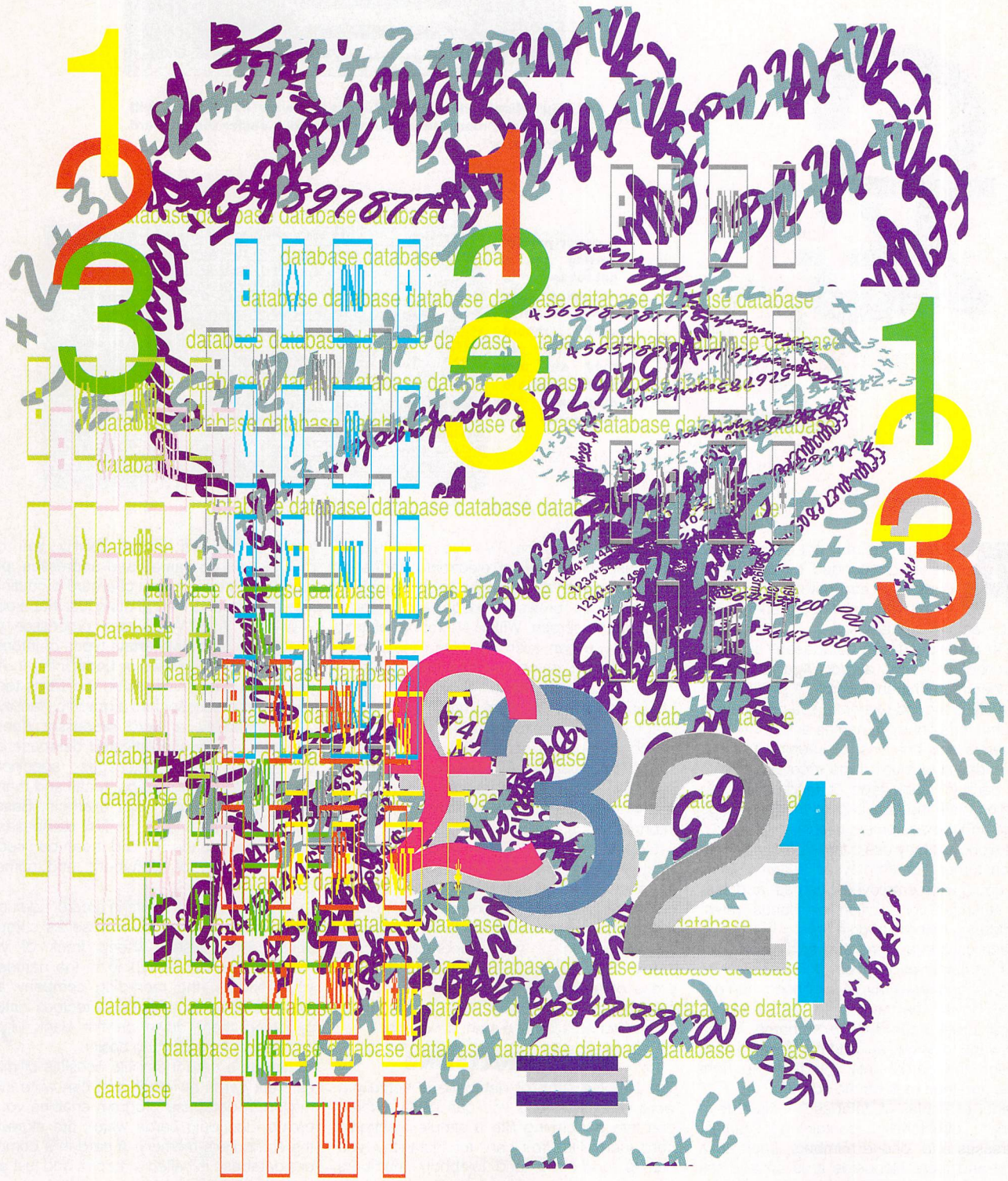
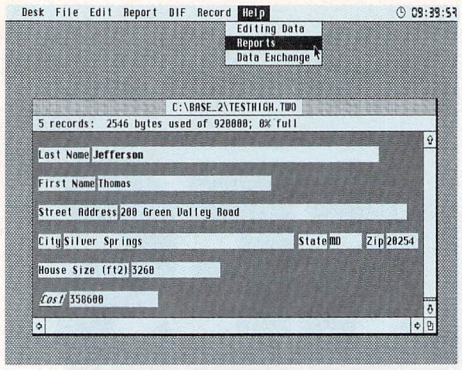
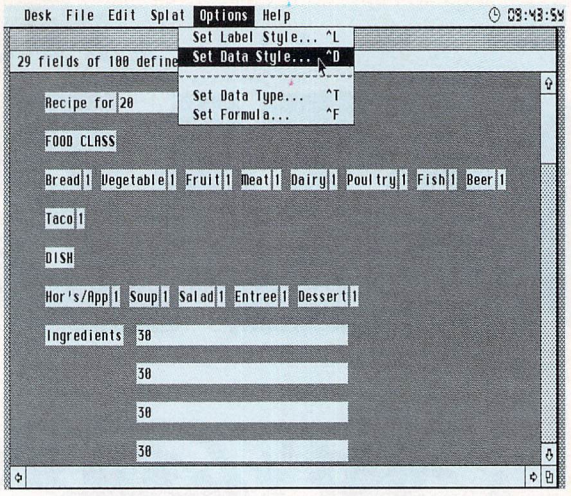




A word processor can easily be used as a simple card index-style database containing names and addresses



Specifically designed database software like Base 2 will store and manipulate information much easier than a word processor

A major part of setting up a database is designing how many fields each record has, how big they are and where they are displayed on the screen

SALES PERSON	ITEM	ORDER AMOUNT	DATE OF SALE	REGION	DELIVERY DATE
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ROBERTS, JUSTIN	0822	£11,332.69	16/11/85	0658	24/03/86
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ROBERTS, JUSTIN	1422	£4,866.15	15/02/85	0814	22/07/85
SMITH, JOHN	1478	£10,256.88	22/03/86	0711	30/06/86

Although you may not realise it, we are all surrounded by dozens of databases and not only the electronic computerised variety. But what exactly is a database?

In its widest sense, a database is simply a collection of facts and/or figures stored together in a coherent fashion. A simple card index file is a good example. You might use it at home for storing the names and addresses of friends and relatives, or keeping track of your video and music tape recordings. With one card for each tape or record you can write on them the details of all the recordings made and the equipment used.

At work you may use a large card index file for customers' or employees' records. In it, you could write employees' names, addresses, salaries, commission or bonus rates, attendance records and so on.

Each card in a name and address file will have a name at the top, followed by an address and possibly a telephone number further down. The cards are stored in alphabetical order according to surname. When you want to know an address, simply flick through the cards until you find the right name and then read off the address.

Other examples of databases include telephone directories containing names, addresses and 'phone numbers. Look up a name and there alongside it, is an address and 'phone number. Both of these examples however, are simple manual systems, cumbersome and slow to use.

Teletext pages on TV also constitute a database. Hundreds of electronic pages of information are available at your fingertips, and you can browse through and display them on the screen. With a Microtext Teletext adaptor you can even download the pages and store the data on your ST's floppy disks.

The storage media for a database might be paper, cassette tape, microfilm, photographic or electronic. It doesn't really matter, provided that you can easily access the stored information. A computer database program simply provides an easy-to-use media into which, you can store a variety of information.

Even the smallest ST has enough memory to store many hundreds of names, addresses, prices, sales figures, video tapes and so on. A Mega ST and hard disk can store literally thousands of electronic cards in a simple silicon version of your paper-based card index file, and recall them instantly at the press of a key. For speed and capacity a computerised database wins every time, when pitched against a manual version.

WORD PROCESSING

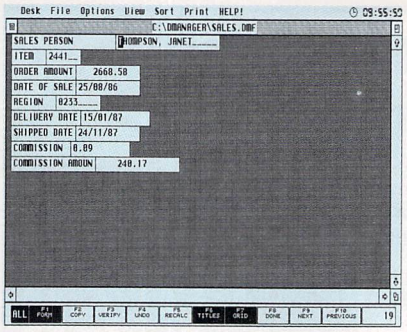
The simplest form of database is actually a word processor, and you can easily coerce one into performing like a simple electronic card index file. You can, for instance, type names, addresses and telephone numbers into your word processor or text editor, allowing one screen full of text for each card and then save the whole lot on disk. Using the word processor's search facility you can quickly look up names and addresses, print out the whole file or just one card by defining it as a block and then printing just that block.

With a WYSIWYG word processor you could also highlight certain types of information by typing it in bold or underlining it. And you could paste pictures on the cards too, if your word processor has a graphics facility.

Unfortunately, a word processor doesn't make for a very sophisticated database and there are many packages specifically designed for easy storage, recall and manipulation of information. For example, Base 2 from Antic was one of the first databases to be released for the ST, and it can be used to store a variety of alphabetic and numeric data.

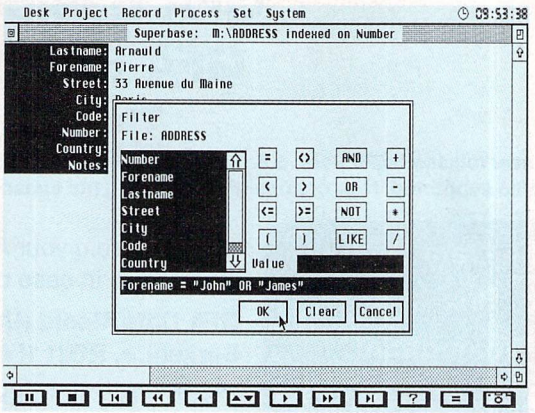
Anything you can store in a card index system is equally at home in Base 2's computerised filing system. Keep track of your record collection by typing in the names of your records, the recording company and artist, or type in your favourite recipes instead of jotting them down on the back of old envelopes. It couldn't be easier.

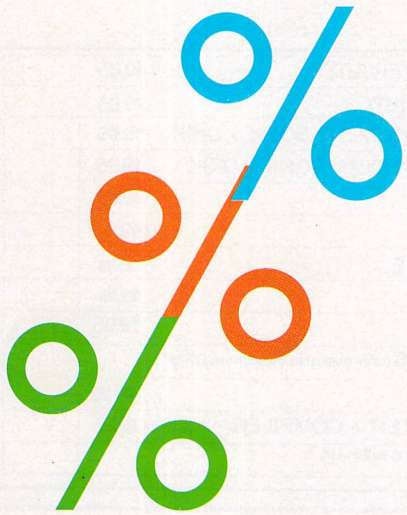
Just as a card index file consists of many different cards on which you can write information, a database program enables you to create electronic cards which are stored in the computer's memory. A card in a computer's database is called a record, and just as a real card has several lines on which you can write information, a record has these lines too, they're known as fields.

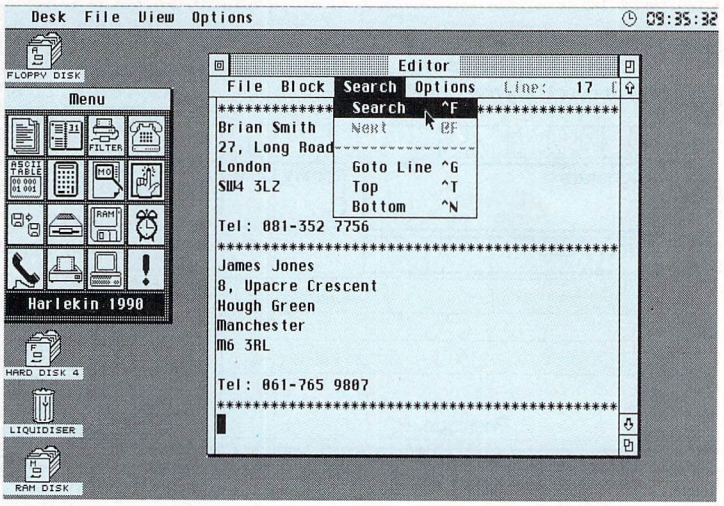


Is this a low powered spreadsheet or high powered database? It has rows and columns of cells and the ability to perform calculations on them

By clicking on the Form View icon, all is revealed - it's a database. Data Manager can mimic a simple spreadsheet







If you had a database of names and addresses each record would hold one name and address. The record would consist of a number of fields, the first one might be the surname, forename in the second and the third, fourth and fifth might contain the address.

Base 2 enables you to place fields on each record card by pointing and clicking with the mouse. Their size is altered simply by dragging the field box to the required size using the mouse. You could have two short fields for the first and last names, a long field containing several lines for the address and bringing up the rear could be a very short field containing the post code.

SEARCHING AND SORTING

The advantage that a computerised database has over a manual system, is that once the information has been entered into the program, it can be manipulated and sorted using a variety of methods. Several items of information are normally stored together in a database, such as a name and an address, a part number and diagram and so on.

You could sort a list of names and addresses into alphabetical order according to surname, or a company might sort its clients according to the region or county they live in. When the information has been stored and sorted into order, you can search for a name and obtain an address, or part number and see a cut-away diagram and so on.

You could ask the database program to search for and display Fielding Mellish's address and 'phone number, or print the price of a new gearbox for a Ford Escort, or all your company's customers living in London. No matter what information you use to fill your database, you can search for it and print it out instantly.

Most databases enable you to search for more than one item of information, and this extends its use. So with a name and address file, you could list every relative living in London over 50 years old. Or a garage could print the prices of all exhaust systems for Vauxhall cars except Cavaliers. Advanced databases enable you to define a search filter containing logical functions like AND, OR, NOT, greater than, equal to and less than. A command such as 'Display records=AGE>25, ADDRESS=LONDON AND NOT MALE'. This would display records for all women living in London aged over 25 - simple, right?

The ability to store information in a computerised database isn't limited to typing in strings of text. Fields come in several different varieties, and you can tell the database software that in given record fields one to three contain text, but field four contains a number. The program could then perform simple arithmetic calculations based on this field if requested.

This once again extends the use of a database and opens up many new possibilities. It becomes easy for a shop or company to store a list of products or items it sells, along with their price and the quantity of stock remaining. The database could then be instructed to print out all the stock for which there is less than 10 items remaining.

Another database might contain the names of a company's sales people and the total sales they have each achieved to date. Each day the totals would be updated by the sales made. You could set aside one field for the sales total (in pounds) then instruct the program to multiply that field by 10 per cent and place the result (the commission due) in another field. At the end of each month the sales staff's results and commissions due could be printed out.

Some databases can almost take on the appearance of a spreadsheet in the way they lay out the data on the screen in rows and columns. The data is formatted just like the cells of a spreadsheet. Even more like a spreadsheet, is the ability to instruct some database programs such as Data Manager to multiply one cell by another cell.

It's also possible to make a spreadsheet program behave in a similar manner to a database. There is nothing to stop you storing facts and figures in a spreadsheet's cells, and some clever packages have sorting and searching facilities that will manipulate the data just like a true database.

Database software ranges from simple text editor-type systems to powerful programs that can almost be used like a spreadsheet. When you choose a database, consider carefully what type of data you will be entering and decide which of the features mentioned you'll need. It's up to you!

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MUSIC AND MIDI PAGE 121

Missed the British Music Fair? Don't worry, Ian Waugh gives you a conducted tour.

COMMUNICATIONS PAGE 123

Hackers of the world beware, you may need help from PLAS. John Butters is here to advise you.

EMULATION PAGE 125

Can you really get rude emulators and carry out Mac to ST transfers without wires? Günter Minnerup tells all.

ADVENTURES PAGE 127

The choice is either to hit the streets of Manhattan or to go fishing, either way the Faun is on hand with the solutions.

DESKTOP PUBLISHING PAGE 129

Computing on a budget? Then Easy Text Plus is the DTP for you, Charles Michael is here to introduce you.

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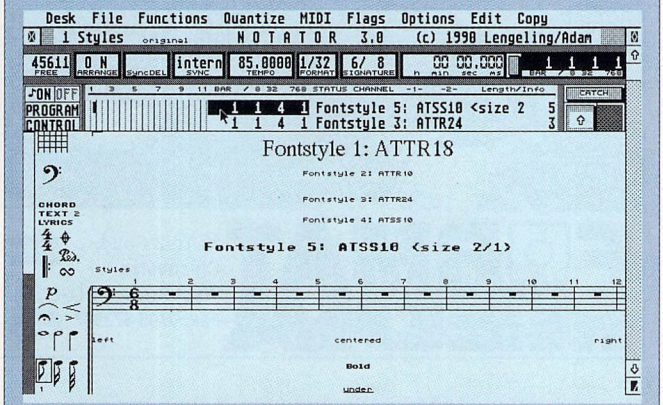
Direct to disc - the process of converting sound into digital data, and then saving and loading it directly to and from a hard disk.

In principle the system works like a sampler (see last month for info on samplers), but saving the data direct to disk means you're limited by disk space - 20 megabytes or more - rather than the computer's RAM. A 30Mb hard disk will usually store 30 minutes of sound. Applications include instant recording, layering sounds and the on-board creation of digital effects.

As it's easier to edit digital data than audio data, editing is greatly simplified and becomes more comprehensive. All this at CD quality too.

Direct to disk systems are used by professionals, but a reduction in the price will bring them within reach of the semi-pro and even the home user.



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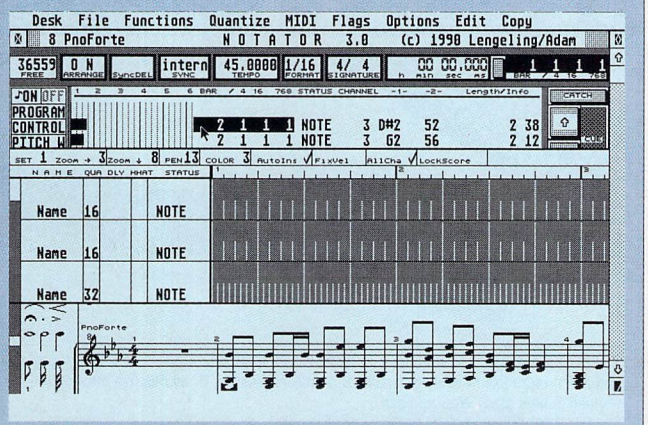
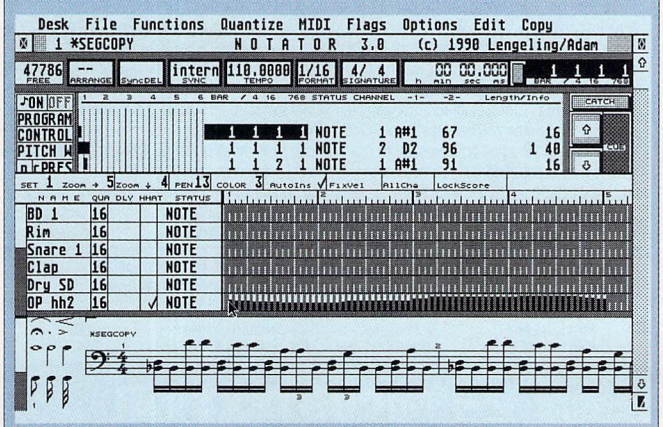


Above and below: The new Hyper Editor in C-Lab's Notator V3



A plethora of products at the British Music Fair, plus direct to disk recording

This year's British Music Fair - the premier UK exhibition for all things musical - has proved once again that the ST dominates the computer music market. However, the total turnout of music software developers and distributors was well down on last year.

There were far and away most new products on C-Lab - distributor Sound Technology's stand. The Creator/Notator package has now reached version three (£49) and new features include more quantise options, macro commands, new fonts and music symbols.

There are also additions to the Arrange section and a page preview mode showing how the score will look before printing.

The range of C-Lab education programs is due for release soon. Notator Alpha (£199) is a cut-down version of Notator with most of the scoring features, although it can only handle four staves and has fewer recording facilities.

Aura (£99) is an ear and rhythm training program which asks questions about chords, scales, intervals and rhythm.

Midia (£65) explores the interaction between MIDI and your instruments with graphic displays of MIDI data. It enables you to create and transmit a wide range of MIDI messages.

Universal voice editor, Polyframe consists of a core program (£299) into which you load individual synth modules (about £50-60 each).

Digidesign's Soundtools (£1,995), a direct to disc recording system, is being linked to Notator to allow you to record audio tracks alongside your Midi tracks.

Sound Technology is also distributing a new expander called the EVS-1. It uses a wide range of different types of synthesis for its sounds, but the novelty is the voice editing software for the ST. The best part is the price - £99. A review machine has just landed on my door mat so more about this next month.

The Digital Muse, developer of the machine-code based Virtuoso and Prodigy sequencers, is developing a score writing module called ScoreSheet which will be compatible with both programs. It should cost under £80, but it's unlikely to make an appearance this year.

A budget-priced sequencer from Passport, Trax (£85) is a development of MasterTracks Junior - distributed by MCM. The sequencer has 64 tracks and also includes graphic editing.

Tentrax (£99) is the sequencer from Roland which supports the CM (Computer Music) modules. It has simple notation facilities and is to be released soon.

AVR could be found on the Microdeal stand with a new 16-bit ST sampler (£45). AVR announced that a direct to disk stereo version would be available early next year at a price somewhere around £500.

Another company, D2D, is working on a direct to disk system called Adac which will sell for around £799.

ON THE MUSICAL GRAPEVINE

Fancy yourself as a synthesiser programmer? Yamaha R&D Centre in London is on the lookout for pro and semi-pro musicians who can create synth sounds. Send a sample of your work (on DX and/or SY synths) along with a CV in the first instance to Mike Barnes, Yamaha R&D Centre, 58-60 Conduit Street, London, W1 9FD. Tel: 071 434 1336.

The insulting/inspirational music program, Dr. Tiricc (an anagram of critic in case you haven't worked it out) has been updated to Version 2 and costs £25 from ADOsoft on 081 761 0178.

If you have an Alesis QuadraVerb or a Yamaha SPX90 effects unit a range of new set-ups are available on ST disc from Desert Island on 0463 221488.

Speaking of QuadraVerbs, Alesis have updated the unit, but you don't have to buy a new machine, just a new chip! Distributors Sound Technology (0462 480000) were suggesting a price of £12. New features include 1.5 second sampling, multi-tap delays, panning, resonators and a ring modulator.

Although Steinberg distributor Evenlode Soundworks (0993 898484) was not at the British Music Fair , a recent press release informs us of the imminent availability of Cubase Version 2. This version has score editing, Cubeat (a cut-down Cubase) and a SY77 Synthworks Editor.

The ST Club

FONTKIT PLUS 3 - New version, includes: Block manipulation, Bezier curve and nib drawing tools, Import of Calamus, Macintosh and Signum fonts, Export of Signum fonts. Includes a new - faster - version of Fontprint plus Fontswitch 3. Full specification - plus details of PD and commercial Fontpac font sets - available on request. Price: £19.95

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THE ASTRONOMY LAB - Widely acclaimed and probably the most versatile and comprehensive astronomy package for the ST. Price: £19.95.

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USER GUIDES - available for Timeworks Desktop Publisher (£9.95) and First Word (£6.95).

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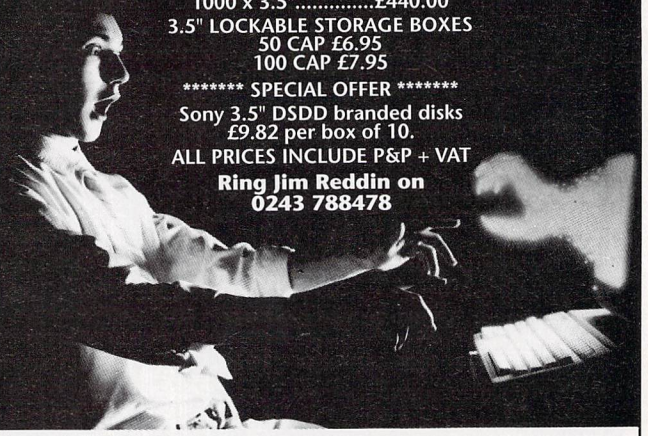

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Stay on the right side of the law and don't hack your way into jail...

Much of this month's column is devoted to new legislation aimed at detering people from illegally entering computer systems.

Since the invention of modems hacking has been a problem for companies and bodies of all sizes. Although it's regarded as taboo, there have been few laws which have been able to successfully tackle the spreading problem.

Hackers of all ages ring closely-guarded telephone numbers and enter the computer systems of all types of organisations for various reasons. Most of it is only harmless fun, such as hoping around menu screens, but hacking of a much serious nature is becoming increasingly common.

Last October a Law Commission report on computer misuse recommended tough penalties for hackers, and the then Secretary of State for Trade and Industry Nicholas Ridley, invited public comment on the report. Unsurprisingly, the main objections came from the hackers themselves, claiming that the 'fun hacker' could be faced with a criminal record and up to three months in prison.

Some feared such legislation could put an end to help from those hackers who try to find loop holes in a computer system, and then report them to the right people.

Despite the complaints the Commission's recommendations seemed certain to be sent through Parliament this year, but because the Government had a very heavy legislative programme, other matters took precedence.

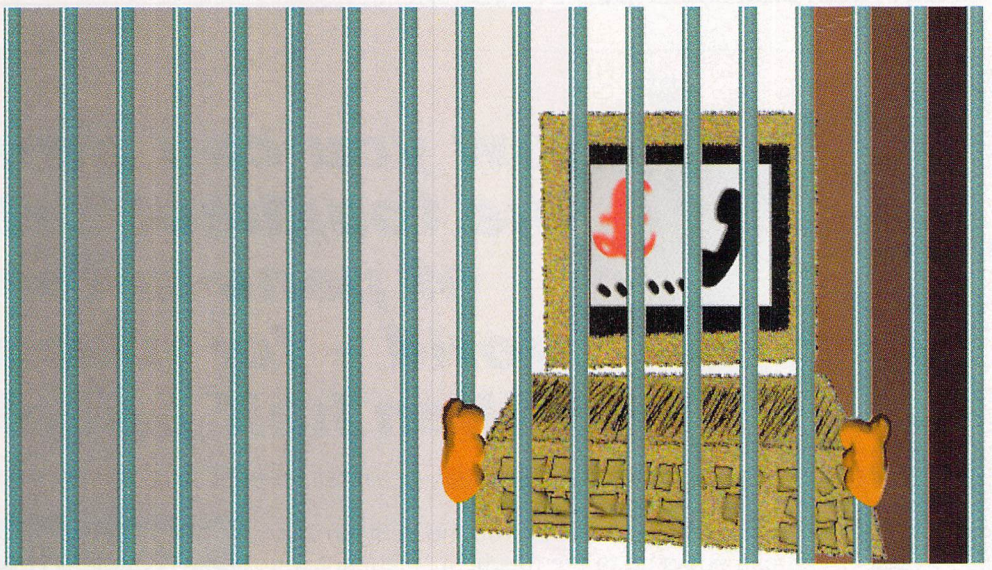
As hackers celebrated the omission the Government made it clear that full support would be given to any MP wishing to raise a Private Member's Bill, based on the report's recommendations. Michael Colvin, Conservative MP for Romsey and Waterside, became that person.

Colvin's Bill led to the Computer Misuse Act 1990 which came into effect on August 29, 1990. Under the Act it is an offence to make unauthorised entry into a computer system. This will apply to anyone who enters another's computer either for fun or to try and interfere with it. This will be a conviction punishable with up to six months imprisonment and/or a fine up to £2,000.

Second comes a more serious offence of unauthorised entry into a computer system either to facilitate or carry out a more serious crime.

This offence would apply, for example, to someone who enters a bank computer with the intention of diverting funds to themselves. Anyone found guilty faces a maximum of five years imprisonment and/or an unlimited fine.

The third offence to cause unauthorised modification of computer-held data or programs. It covers the use of worms, viruses or logic bombs and will include both attacks on a particular computer and the circulation of infected disks which could alter data. This also carries a maximum of five years in jail and/or an unlimited fine.



RETURN OF THE HANDBOOK

Anyone with more than a passing interest in hacking should not be without the book Data Theft by Hugo Cornwall. It's the sequel to his popular book, The Hacker's Handbook and has just become available in its paperback form.

Its 406 pages explain everything there is to know about the subject including how companies can try to prevent outside interference with their computer systems.

The book is aimed at managers of computer systems rather than the hacker and as such is clearly worded throughout - non of the techno' jargon many books rely on.

The book starts by explaining what data theft is about and gives examples of what can be stolen from computer systems. It concludes with a list of things you can do to prevent your system being tampered with and also the laws to protect your data (although it was published before the Computer Misuse Act).

Data Theft (ISBN 0 7493 0217 8) costs £5.99 from the publisher Mandarin Paperbacks at Michelin House, 81 Fulham Road, London, SW3 6RB.

HELP LINK

For those who get into trouble under the computer misuse legislation (or any other British law) the new legal advisory service offered by MicroLink (0527 67585) is sure to be of help.

Professional Legal Advisory Service (PLAS) gives subscribers a cheap, satisfactory answer to all legal problems. The user types a query into their computer. It is then passed to a panel of fully-qualified solicitors who can give advice relating to every aspect of British law.

Seven case studies can be looked at by any MicroLink subscriber for the cost of the telephone call. An example of the service offered is a case study of a holiday-maker who stayed at a hotel which the brochure described as '220 yards from the beach'. What was ommitted was that this journey included crossing a busy railway line and inner-city by-pass.

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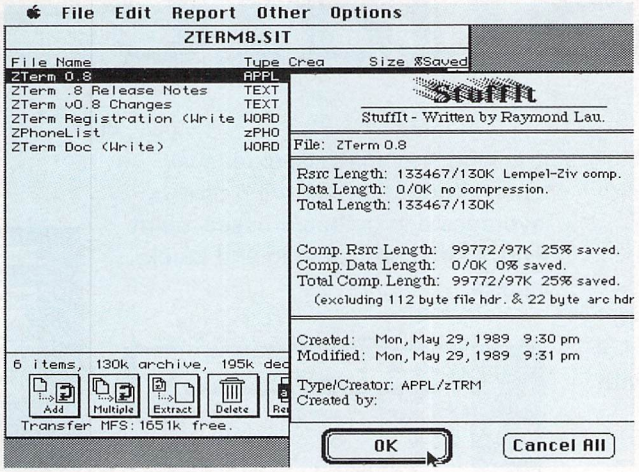
A breakthrough in PC emulation, 'rude' Mac comms, ramdisks under DOS and Mac to ST file transfers...



Popular PD programmes can be hard to come by

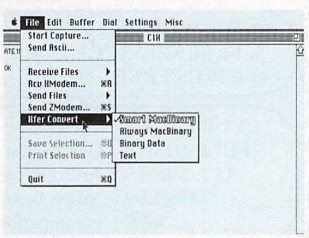
MACINTOSH PD

McComms public domain software for the ST is not exactly hard to come by, but users of Aladin or Spectre have a hard time - with only a handful of vendors and bulletin boards providing Macintosh PD.

The best sources of downloads are MacTel and CIX, both have extensive lists (although neither are free), but before you spend valuable on-line time be aware of the pitfalls in Mac communications.

The standard file transfer protocol is MacBinary - exclusive to Macintosh computers and supported by all Mac comms software. Instead of the .ARC extender in the file lists you'll have .SIT files produced by the rudely-named StuffIt compression program. This program offers many additional features over the common ST ARC including long files spread over several disks, password encryption, choice of compression algorithms and so on.

It's not necessary to use Mac comms software, you can download Mac files in ST mode, using the familiar X, Y, or Z modem protocols. Use Spectre's Transverter or Aladin's Exchanger to copy the downloaded files to a Mac disk, and then let StuffIt loose on them. Traffic in the opposite direction is a little more complicated, involving a utility called BinHex - more about that another time.



Comms on the cheap! Mac terminal emulation from PD

DOS RAMDISKS

With only one drive, disk-intensive DOS applications can be a pain, and DOS itself is disk-intensive when loading in the non-resident operating system commands. With a one megabyte machine or larger, solve your problems by keeping the frequently-needed DOS files, or even applications on a ramdisk.

Jeffrey Simmonds from Newbury, Berks wrote to ask how this was done, so here goes. Depending on your version of DOS, it'll include a file called RAMDRIVE.SYS (for MS-DOS 3.2 and later) or VDISK.SYS (for IBM's PC-DOS 3.0 or later). Make sure that file is on the current disk, and edit your CONFIG.SYS to include the following line:

device=ramdrive.sys (or vdisk.sys) <size> <sectors> <directory>

Make sure the values for size are at least 16K and no more than you can spare, choose sensible values for the sector size (512) and number of directory entries parameters (64 is default). Your 'virtual' drive will probably appear as drive C: depending on your set-up. Don't switch the computer off without saving your files'

Mac-ST file transfers

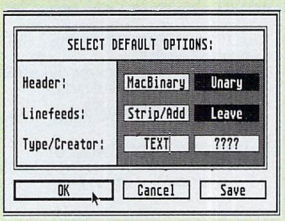
Owners of plain vanilla Spectres without the GCR bit are usually reduced to serial cable links with a real Mac for file transfers - tricky if the friendly Mac is some distance away, there's no phonelink, or one side hasn't a modem.

I want to thank Martin Oldfield for the following instructions for a cable-free and wire-less Mac-ST transfer.

"For this you need a Mac fitted with Apple's PC disk reading 'Super-Drive'. Unfortunately the procedure is complicated because the Mac will only access PC discs via the Apple File Exchange (AFE) program - designed to allow the Mac to exchange text with PC applications.

Use Stuffit to prepare an archive of files you want to transfer, then use the Encode BinHex command in Stuffit to convert the archive to text. Take a 3.5 inch floppy and format on the Mac under AFE. Use AFE to copy the chunks to these discs. Select Default Translation and turn off any substitutions.

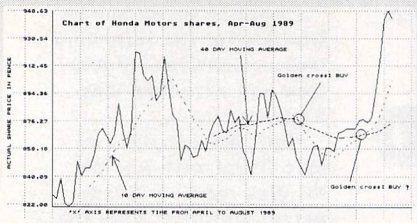
Take the disks to the



ST and use Transverter to copy them to a Spectre MFS partition. You'll need to use the following options:
Unary transfer
Leave CR/LF
File Type: TEXT (if not)
Creator: SIT!
Now fire up the emulator and launch StuffIt. Decode the BinHex file to an archive, open this archive and extract at will."

ProShare–ST

ProShare–ST is a powerful, yet simple to use Stock Market Analysis tool for your Atari–ST. ProShare–ST utilises powerful techniques previously only available to technical analysts, to bring the highly profitable world of Stocks and Shares to anyone with an Atari–ST computer.



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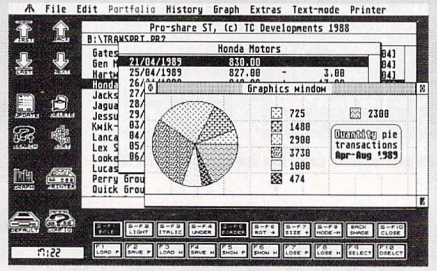

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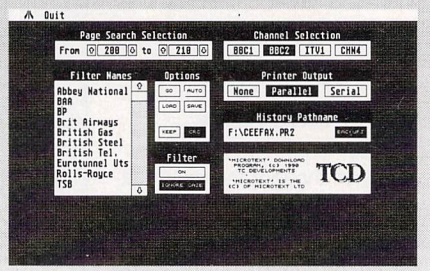

ProShare–ST now supports the Microtext teletext adaptor, enabling you to automatically download share price data from Ceefax or Oracle saving you the tedium of entering prices from a newspaper !

The Microtext adaptor is available from Microtext Ltd.

ProShare–ST is available for £49.95 inc. VAT and P&P. Write or telephone for a free information sheet to: TC Developments, PO Box 15, Wetherby, West Yorkshire, LS22 4ZE.
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Whether you're all at sea with Fish, or manhunting in Manhattan the Faun provides a helping paw...

A number of adventurers have written with flattering remarks about the new-look 'User adventure column. A common theme is the reduction of the column to one page - keep writing and the editor might give us more space!

I'd like to draw your attention to a disk-based magazine SynTax which is specifically aimed at the constantly thirsty seeker of knowledge, that most discerning individual, the ST Adventurer.

Stuffed with news, reviews, screenshots, letters, maps and all other paraphernalia pertaining to ST adventuring. It's a little steep at £3.50 for a bi-monthly issue.

However for this you get a usable disk, access to a helpline, a list of suppliers of PD and shareware, the chance to contribute to the mag and more, so it's not too bad. Write to Sue Medley at 9, Warwick Road, Sidcup, Kent, DA14 6LJ.

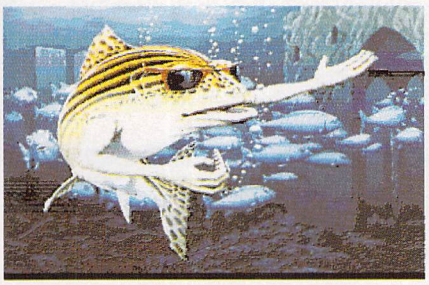
NEWS FROM THE DUNGEONS

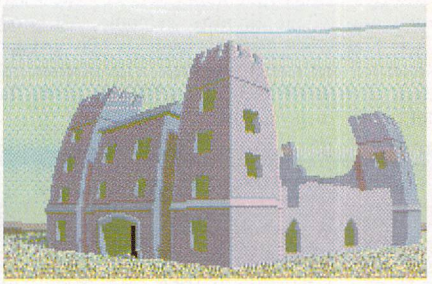
US Gold is continuing to muscle in on the adventure market with the release of Shadow Sorcerer, another AD&D (that's Advanced Dungeons and Dragons, thicko) RPG.

It promises more conundrums than carnage, a 3D isometric play area for indoor encounters and a hexagonal grid map for outdoor confrontations. There's mouse/icon control for all actions and conversations, and 3D animated miniatures represent the different characters.

The scenario involves your intrepid band shepherding refugees from draconian armies, protecting and feeding them, The land also needs to be explored in an attempt to find a safe haven from the evil horde.

Release is planned for October (so expect it at Christmas!) if that sort of thing lights your candle - Merry Christmas to you.





HINTS AND TIPS

Contrary to popular opinion, Geordie Adventurers do not go around saying "Why aye man" all the time. Any fool knows we are restricted to a simple verb/noun format such as "smoke tab" or "drink beer" which is why the continuity of this column has been shot to pieces recently, as reader Gary Holder from London, brutally reminds me.

Gary wants to know what happened to the serialisation of the solutions to Fish! and Manhunter New York.

My predecessor Pendragon, mis-cast a spell and disappeared in a puff of pink smoke setting fire to his scrolls. Luckily, I too have solved these adventures (with help from the world-famous RGB Marshall) and now present the final instalment.

Manhunter New York - Day three ends when you've visited 21 Pearl and committed GBH on the radio with the crowbar, thus gaining Module C. At the Empire State Building it would be informative accessing the computer, using the code discovered in the theatre.

On the fourth day after a spot of signal tracking you'll discover that it's you who's the target. Revisit the hospital room which is no longer guarded, enter the grate, inspect the machine to find module C and make your escape.

Travel to Grand Central, break the window, board the craft and insert the modules. The left slider powers the ship, the middle button starts it, the right button controls the hatch, the left is for lift-off and the right slider operates the screen. Negotiate the tunnel, bomb the four sites while avoiding Phil's attentions and voila!

Fish! - After tuning the crystal take the bag and cylinder to the tower, put the cylinder in the bag, open the cylinder, then the bag and float up to the roof where you may take the photon bridge before jumping over the railing.

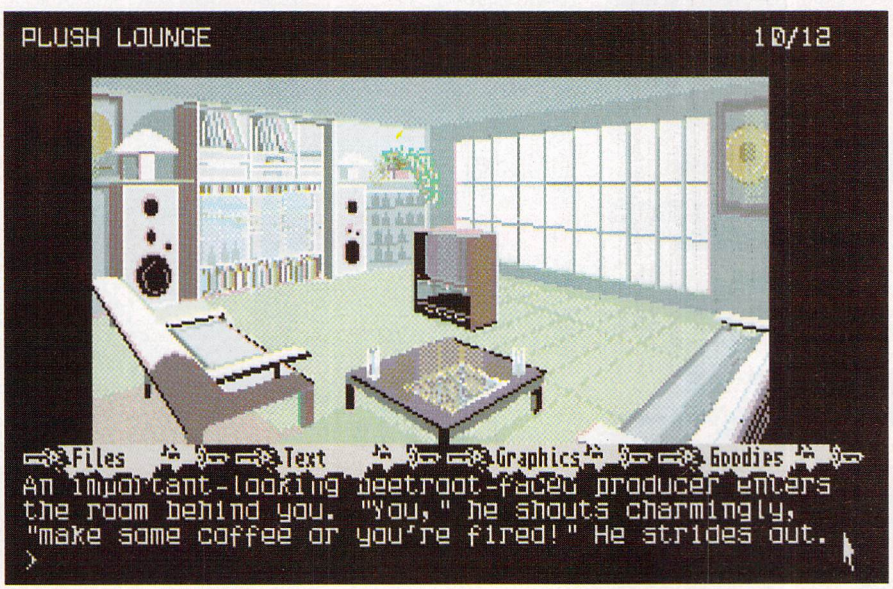
Return to the project room and attempt to unscrew the lok screw with your hyperdriver. Whoever the traitor is should warn you of your folly and give you the password to play shut-down.

Go to the lab, login then play, after completing the game unscrew the lok screw safely.

Attach the filter to the focus wheel, the photon bridge to the crystal, the filter to the photon bridge, put the filter in the radio case and enter the project room.

Take the accelerator and put the assembled regulator in the device. Finally, screw the whole caboodle together. You are now either a hero or a goat - depending on your efficiency.

Send hints, tips, solutions and maps, as well as bouquets, brickbats and beer coupons to: The Faun, Adventure Column, Atari ST User, Europa House, Adlington Park, Macclesfield. SK10 4NP.



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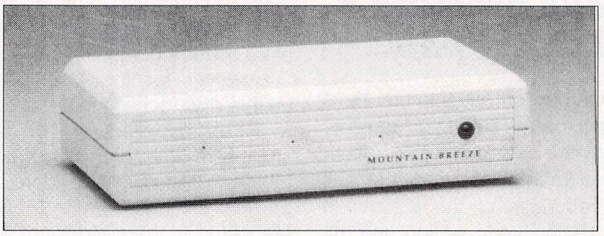

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EASY TEXT PLUS

It's easy to get carried away and look only at DTPs costing well over the £100 mark, comparing esoteric features like auto-kerning and vertical justification. However, there are plenty of people who don't have that kind of money and who don't need that degree of sophistication in their page layout.

There's something for everyone in the ST world though, and Easy Text Plus, from zzSoft, has lots to offer for a mere £20. The product of one man, Easy Text Plus is a no-frills DTP which can still offer reasonable quality output to 9 pin, 24 pin and laser-printers. The working methods may vary from traditional DTP - if such a new work area can have a tradition - but the end results can often be much the same.

The program comes on a single disk and is less than 100K long. You see a mainly blank screen with a GEM slide bar down the right and a menu bar along the top. The program is frame-based, but with a slightly different philosophy from most others - I suspect mainly for ease of programming.

For instance, to create a new text window you select Start Window and stretch a rectangle across the screen. Then select Use Frame before you can enter any text. This is the only point at which you can enter text directly into a frame as there are no editing facilities to correct any mistakes - not even Backspace works.

If you need to edit the text in the same frame, or any other, you must select End Use Frame and then choose Select Frame and Edit. A text editor is displayed over the main page screen. However this editor doesn't text wrap or take text from line to line. When you type to the end of the editor's line, the extra characters simply overwrite the rightmost letter.

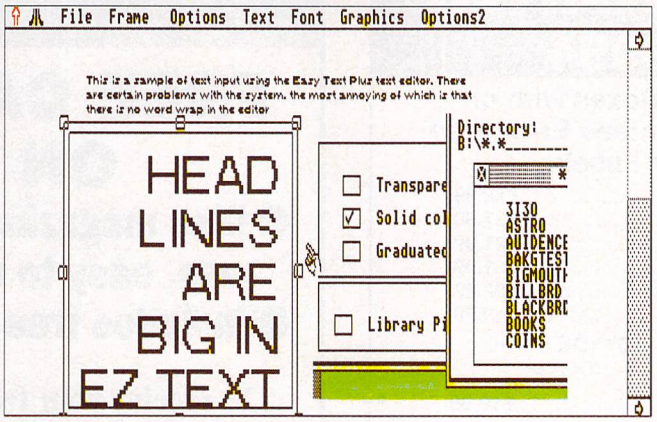
It's much less frustrating to use the program in conjunction with a word processor, especially if that word processor is First Word Plus, whose files Easy Text Plus can import directly. In fact, given Easy Text Plus's length, it would be handy to put both programs in memory with something like The Twist (£24.95, HiSoft, 0525 718181) and re-import text after each edit.

Graphics can also be imported, though only in Degas format. These can be clipped to size but not resized within the program. Again, you would need to do that elsewhere. Lines can be given varying widths, styles and ends and any of 36 fill patterns can be used on graphic or text frames. Also frames can be square or round cornered.

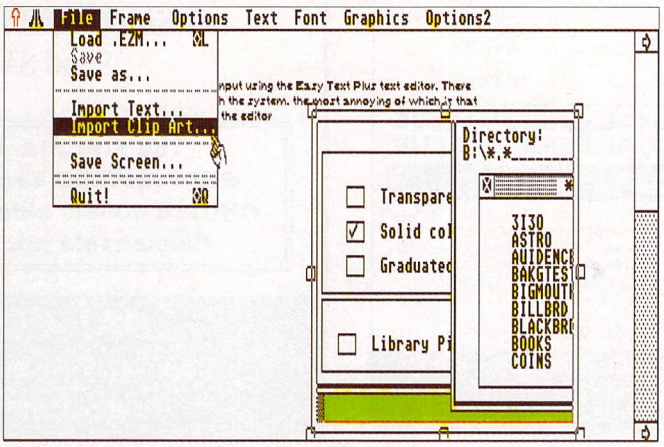
Typography is reasonable, with facilities to adjust leading and kerning globally. Text can also be flushed left or right, centred or pushed to both margins. User-sized guide frames can be placed on the page for aligning columns, and column widths can be carried from frame to frame for easy matching.

Easy Text Plus works under GDOS and can therefore use GDOS fonts, it's able to display text up to 36 point high and apply bold and italic styles to it. Versions are available to print to 9 pin and 24 pin printers, but you can also use the Atari Laser or PostScript output, if you have access to a suitable printer.

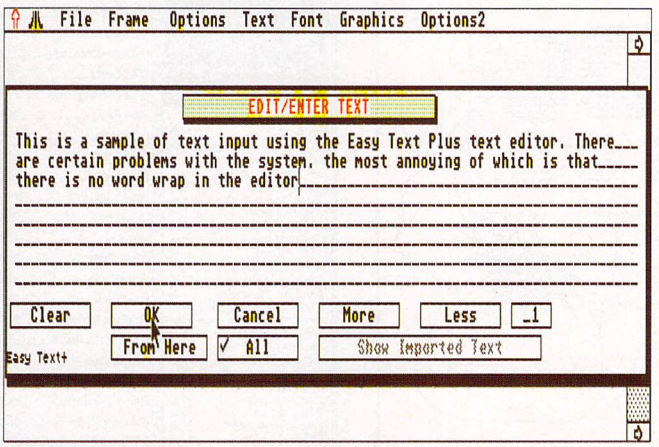
Most of the foregoing comments on Easy Text Plus are those you would expect in a review of a £150 product. Considering that this program is a mere £20 it certainly represents excellent value for money. It's being continually developed and you can obtain a copy from Goodman PDL on 0782 335650.



A separate text editor is an acceptable approach to frame-based DTP



Pictures can be imported from Degas files and clipped to size. No resizing is possible



Running under GDOS, Easy Text Plus can display and print any GDOS fonts

PINCHING PC DISKS

I'm gradually gathering together information on sources of clip-art, though I'd be grateful for more, to make the survey more complete. In the meantime, don't forget you can make use of clips from non-ST sources.

The biggest single market for clips is the IBM PC, and many of these are in the GEM Paint, .IMG format. Pictures stored as IMG files can be directly imported into all ST DTP's which can handle bitmaps. As long as the PC clip-art you want can be supplied on 3.5 inch disks you can read them directly on your ST and transfer the files you want to your work disks.

One company with which I have personal experience is Words and Pictures, there is a wide range of clips all drawn by the company this side of the Atlantic. GST (0480 496666) also supply ScanArt which contains a good range of high-quality clips from the US. The product is actually billed as running on PC and ST.

Charles Michael

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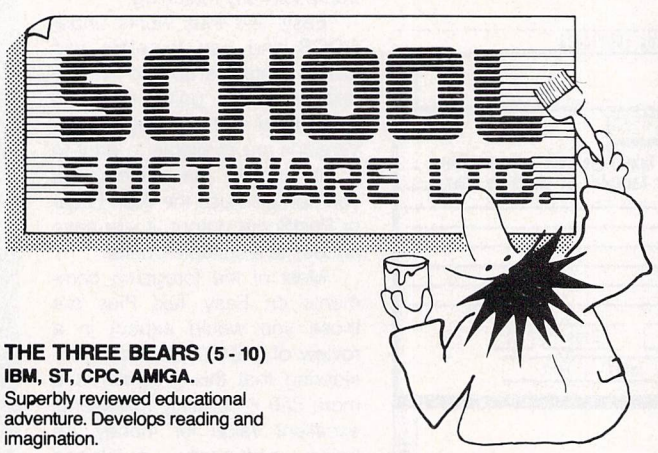

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AMIGA BIAS?

First of all, I should mention I enjoy your magazine a lot, but unfortunately it gets through my re-seller here in New Zealand two months out of date, so the argument you are about to hear is about three months late.

One thing that really disappoints me is when companies put an ad in the wrong magazine, referring to Vol 5 No 3 May 90 page 96, 'How to turn my Amiga into a Telex machine'. I don't own an Amiga, and I should imagine most readers of Atari ST User don't either. So basically all I'm saying is that should be watched, not necessarily by you but by the companies involved.

Now, while I'm at it, I have a bigger concern with a comment made by one of your game reviewers. I am referring to the Quick Peek on page 36, where the reviewer states 'The detail incorporated into the graphics has to be seen to be believed. Similarly with the sound - I was so impressed I thought I had booted up my Amiga by mistake'. A true ST game reviewer would NEVER say such a thing, talk about degrade the machine you're trying to support.

Your credibility has suffered with me. I now think that Amiga lovers are generating bias reviews within your magazine. A true ST user knows the ST can perform just as well as its 16-bit counterpart. And would never doubt the machine he was using. I think this reviewer should go to another magazine that supports 'his Amiga'. And if you are truly hard up for a game reviewer for the ST, I am offering my services.

Tim Shepherd, Wellington, New Zealand.

Yeah, well you'll be pleased to hear that after a top secret, top priority search and destroy mission within the ranks of 'USER, we blew this guy's cover and issued him with a one-way ticket to outer Siberia.

I'm not sure if he'll be able to get his copy of Amiga Digest there but he sure as hell won't be getting his dirty paws on 'USER from now on.

OVER SEXED, OVER PAID AND OVER HERE...

I am an American living in England and own an American version of the Atari 1040 ST. I am writing this warning to other users of the American ST's: DO NOT BUY ANY CURRENT SOFTWARE FROM OCEAN SOFTWARE LTD!

Due to Ocean's new format, their current software will not run on American STs. I understand that there are or will be American versions available in America, but that does me very little good over here.

I have recently bought Operation Thunderbolt and a friend of mine has bought F-29 Retaliator, neither of these programs will work as advertised. The advertisements for Ocean's products all state that they are available for the Atari ST, not for only specific versions of the ST.

The box for Operation Thunderbolt has the British and French flags displayed on it, but does not state their meaning. I interpreted this to mean that the game and manual supported both languages and would probably require a key-word to be entered before running the program.However, this unfortunately was not the case.

I have spoken to Ocean Software and they have agreed to replace my program with something else that would work, but not with a useable version of the program that I bought. I have agreed to this but will not be buying any further Ocean Software titles until they correct the problem.

I hope that this letter will prevent any other owners of the American STs from buying Ocean products unless they test them first.

Roger D Stephendon, Buckden, Cambs

Yes, you've got a problem there, but to be fair to Ocean, it's obvious that they did not intend their packaging to be misleading and have made an effort to provide you with a reasonable replacement.

I don't know how many of our readers have the American version of the ST but if there are enough of you, then perhaps companies such as Ocean can be convinced that it's worth their while to consider your needs as well.

ROOKIE IN THE FAMILY TREE?

As a recent purchaser of an 520STE and a rookie in the computer world , I have up to now in vain searched magazines and friends' expertise for a program that will help in Genealogy.

I feel sure that there must be others like myself who have information regarding ancestors and would dearly like to employ a computer to help organization. Am I wrong to expect there to exist a specific program for this, or am I overlooking the obvious?

John King, Midsomer Norton

Several genealogy programs exist in the public domain, some good, some bad, but as they're all free, who's complaining. Cast an eye over our PD pages for some likely addresses.

MORE DODDERING OLD FOOLS

Re: 'USER Mail Issue 55. C'mon Ed, wadda ya think we are? A load of 'doddering old fools'? How did Lettice Pither (are you sure

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VISA

that's his name?) (yes and in fact, he is a her - Ed) know that Cliff Mclean's letter was going to be published on the same page (133) above his, and that you were going to caption it 'Doddering Old Fool'?

The game's up, now I know you write them all yourself and I claim my 'Parcel of Free Goodies for keeping my mouth shut'.

I really hope that Kevin Woolley of Perthshire exists because I am enclosing some German PD addresses for him, and anyone else interested. My work often takes me to Germany and I have a daughter living in Bonn, so getting the latest software is quite easy for me. While writing – which really is a chore for me (and us - Ed), I must mention that I recently managed to obtain (for money) (I would hope so - Ed) one of the first GST40 Genlock devices to be released by Third Coast for the Atari STFM. IT IS SUPERB – and so easy to fit. I, being a 'doddering old fool' aged 64, had a slight technical problem – and the friendly guy at the Third Coast explained my sync fault as being a reversed lead – so anyone thinking about buying it, go for it, but get the lead the right way round.

The GST40 is the answer to really professional quality overlaid tilting using any compatible video source and works beautifully with Degas Elite or Imagic.

Has anyone got a 520STFM circuit diagram? I'm not really so doddering – anyone can get a reversed lead can't they?

Ivor N White, St Leonards-on-Sea, E Sussex

So you think you've lifted the lid on our scam do you, Grandpa? No prizes for spotting it (shame on you for wanting protection money). It wasn't bad though, was it?

It may be bad form but we were still laughing at our own joke this month. Our apologies to anyone with the unlikely name of Lettice Pither living in Redbridge, Surrey.

Thanks for sending the addresses. Great to heear that you're so pleased with the GST40 genlocking device. Don't worry too much about the reversed lead – I understand that these things can become a problem at your age and with professional help.....

INSULTING!

Part of the published reply to a letter from a Stuart D Threifall of Midlothian was offensive. Quote – Actually I may have an old copy of the Beano which should match your level of literacy – Unquote. This is insulting, not clever, to publish such a remark in reply.

The person responsible should remember that people like Stuart keep you in business. You should apologize to Stuart in your next issue and it was clear to notice that the writer of the reply might have an old copy of Beano from his illiterate days. I shall look forward to reading your next issue.

S.C.Squires, Rottingdean, E. Sussex

We here on the 'USER team like to think that you lot out there have a sense of humour. We hope that you take the parry and thrust of repartee on these mail pages in the spirit in which it is intended. But don't you think that Stuart is big enough to fight his own battles? And anyway, what's wrong with Beano?

CRAZY ATARI MUM

Have you, I wonder, shredded my order for cover disks Aug-Jan? The enclosed order was cashed on 14th June (Oh, was that for cover disks? Sorry - Ed). I've waited so patiently for the 28 day limit and have consoled myself that you wouldn't let me down. Huh!

You know, if we customers can't trust you to set a good example then what can we expect from the lesser beings? I guess we're doomed. On a happier note, let me explain that I'm a middle-aged mum Atari crazy and quite computer mad. I spend each month gleaning every last detail from your magazines (when I can prise it away from my son) and dreaming of the day when my ship will come home and I can buy all the peripherals I want.

Thanks for all the great articles and demos on disk. Maybe we could have something on programming? Meantime, please hurry those disks along. I need them.

Rita Bonnard, Newhaven.

Sit tight Ma, the disks are on their way...

CANCELLED ORDER!

I have just cancelled my order for 'USER from my local newsagent because I am fed up with having to purchase a disk which I do not want and most of the time is filled with things of no value to me.

The highlight of the month was reading my 'USER – now there are no suitable magazines for people like myself. XXXX is too technical and XXXX (names deleted to protect the guilty - Ed) now has the dreaded disk and the other mags are not worth mentioning.

You had it right when those people who wanted the disk could purchase it separately, now we are forced to put up with the extra cost, or in my case to stop buying the mag.

I feel very sad about this and I am sure the majority of your readers feel the same. You have bent over backwards (only for those with the cash - Ed) to the minority and I think you ought to reconsider returning to just the splendid magazine.

D. West, St Neots, Cambs

Lordy, there's just no pleasing some people! What on Earth do you do with your ST if you can't find any use for our cover disk? Use it to prop open the back door? And could we enquire politely where you got your statistics on our readers' preferences? What makes you think that only the minority want a cover disk? We happen to know otherwise. But then, I suppose there's no point in going on - you won't be reading this anyway.

THE TWO EVILS?

I am not usually one to complain, but on this occasion I think I have to. After reading the letter from Paul Barley in Issue 53 concerning communism and sexism, I went on to read your comments underneath. I couldn't believe that anyone could be so rude! Paul was simply expressing his opinions and in no way deserved a response like that. He wrote '...I can't find anything wrong with the young lady's expression and neither can my father...'. To this you responded firstly by heading the letter 'His Dad Said So...' and secondly by totally ignoring the point of his letter and making out that Paul hasn't got a mind of his own.

I can obviously see that you totally disagree with Paul's views on the subject and of course you have the right to express your views, but there was absolutely no need, as I see it, to take the mickey just because he is only fourteen years old.

Name and address not supplied.

Hey, you're Paul's Father, right?

SATISFIED READER

As an 'USER who has only recently joined I would like to tell everyone who moans about your mag to shut up. (Yeah, me too - Ed).

I have found your magazine entertaining. It has given me a very interesting insight into computing on my double-sided machine, and I reckon the new changes that you have made ARE BRILL.

Now comes the complaint. I think you are being unfair with your extra charge of £1.50 if you want both sides of the disk. Come on ,let us have a much better chance of fully enjoying your magazine without the inconvenience of sending money, having to wait etc.

How about having a single-sided mag containing two disks, for lets say £3.50. You can afford it!

A.D.Cole, Leyton

Maybe we can, but lots of our readers can't. As an honest service to the deserving poor, our £2.95 cover price is a winner.

SOFTWARE PIRACY

I am an avid computer user and at the moment am training with a local authority to learn more about computers, so I have access to state of the art equipment which includes Amstrad PC1640s and Apple Macs (hang on, I though you said 'State of the Art"? -Ed), with a vast array of application packages consisting of word processing, spreadsheets and data bases.

All these packages cost hundreds of pounds but they are not copy protected so we are able to make legal back up copies. So how come we are not permitted to copy games software bought at much lower prices? Don't get me wrong, I vehemently dislike software piracy which is used for profiteering in any way but it seems to me ludicrous not to be able to back up software which has been legally bought.

This brings me to my idea, which wholly relies on the co-operation of software houses, programmers and computer manufacturers. What if a numeric code was put on to the operating system ROM which would in effect give an i.d. to individual computers, so when you buy software and run it for the first time the program scans the part of the ROM containing the code.

This then encrypts the code and saves it to the program disk, making the software unique to that particular machine and the Ωowner of the software can make as many copies as he or she likes and even save it to a hard drive to make access time quicker.

The disk would not work in another machine because it would have a different i.d. number and would hopefully then be completely pirate proof.

Yes, I hear you cry! What about the cost and older machines which do not have these special ROMs? Well computer manufacturers could do an exchange for the redundant ROMs. I don't know, this is only my opinion and there are probably thousands more of them out there. This issue will get far worse before it gets better.

Shaun Searle, West Denton, Newcastle upon Tyne.

They're not copy protected because computer users in the States and the UK have made it plain that they won't spend several hundred pounds on software that could easily be lost if they have to use the master disks.

With games software however, which is comparatively cheaper, there isn't such an urgent need to back up the disks. Also, and although I'm loathe to say this, statistics suggest that gamers are far more likely to rip off software than business users. Controversial I know, but that's the claim of many software houses. What do you think?

MAIL ORDER BLUES

First of all, congratulations on the all-new (and just about unrecognisable) Atari ST User. I was never very impressed with the old version but now I think you've got it right. I particularly like having Programmer's Clinic on disk and the GEM programming features are useful too. Keep it up!

One thing I would like to see is a comparative review of the numerous memory upgrades now available for the ST, perhaps this is something that ST World could cover in Supertest.

On the subject of mail order suppliers who don't deliver the goods, I would like to relate my experience with CMV Ltd.

CMV have been advertising in the computer press quite heavily for some months now. Back in June I sent for the company's catalogue and was pleasantly surprised when it arrived within a few days. The catalogue was quite impressive, listing many products that I haven't seen elsewhere and they were offering books at discount prices.

After a couple of days I sent them an order for a couple of books (the first two of Compute! Publications Technical Reference Manuals) at a cost of £33.90. I waited four weeks then wrote to them asking if there was a problem with the order. After another week I wrote to them again requesting that they let me know if I could expect to receive the books in the near future.

After waiting another two weeks I lost patience with them and wrote again cancelling the order. My cheque has not been cashed so I am not too concerned about the situation, I can get the books from the ST Club, however I think it is unfortunate that a company claiming to take the ST seriously doesn't have the courtesy to answer its customers' letters.

Les Bessant, Gateshead, Tyne and Wear.

Sure, it's a drag waiting for mail-order goodies to arrive, but there's probably a perfectly reasonable explanation for the non-arrival of your order - at least CMV didn't cash your cheque.

We haven't had any other complaints about CMV, so this can be thought of as an isolated incident arising from the fact that Compute! no longer has a distributor in the UK.

COVER DISK COMPATIBILITY?

R M Underwood in his letter to 'USER'S August issue raised the point of STE compatibility with your cover disks. I read recently that new STFMs are being fitted with TOS 1.4 giving rise to compatibility problems similar to those suffered by the STE.

I bought my STFM in April (the Discovery Pack), and I am very pleased with it. The only problem is that I am unable to find out which TOS I have, and I'm beginning to suspect it is not 1.09. It's not that important really, but if I have got version 1.4 then I'm going to have to be careful when choosing software.

To give you the background, my ST can re-label folders, control-alt-delete does perform a soft reset, and escape will read and display the directory of whichever disk happens to be in the drive.

Desktop.inf does not give the version number, but I have heard of this Rainbow TOS where the Atari logo is rainbowed on the Desktop information display. Domain on your cover disk didn't work which is what, having read My Underwood's letter, prompted me to write. I don't recall trying Damocles – your thoughts would be appreciated.

By the way, if you happen to press F1 when playing the demo version you supplied of Nitro, it will erase everything on a write enabled disk in the drive, and I mean everything – the disk is left completely blank! According to Super Virus Killer, it infects the processor too!

Mike Rhind, Pontardawe, Swansea.

We have a full compliment of STs in the 'USER office and try the cover disk with all of them to ensure compatibility.

JOLLY ROGER

Lately, there's been another great debate in some of the computer mags that I buy about software piracy and how it's doing the games houses and other software writers out of their hard-earned dosh, well what I say is so what!

I'm sick and tired of listening to interested parties (and I mean the people who are making the cash) bleating on about how much they're losing because schoolboys are copying their games and passing them around to their friends.

The fact is that we have a limited amount of pocket money and spend it all on new games, if we take a copy of some game, then it doesn't matter because we wouldn't have been able to afford it anyway because our money has already been spent on games - can't the software houses see this?

I for one will continue to copy as many games as I can. I want a really big collection of games, but as I can only afford to buy so many I will continue to copy the rest, and I'm sure there are lots of young people out there who agree with me.

Alfie Noakes, Sheffield.

I agree that there is a kind of perverted logic in your letter but the fact remains that if you take a copy software belonging to another, then you're stealing.

GIZZA JOB!

I'm female, 16 years old and just about to embark on my A levels (English, French and Maths). Thing is, I want to be a journalist. I especially want to be a computer journalist and I was wondering if I'm doing the right thing by taking A levels? Perhaps it would be better to try and get a job in the computer industry, then get a tea making job on a magazine? What do you think? I'm at my wits end and need some sound advice.

Name and address supplied, Cheadle Hulme, Cheshire.

Do not, for any reason (unless you happen to die...) give up your A levels. Yeah sure, you've heard it all before right? Teachers, careers advisers, parents, kind Uncle all banging away at you with sound advice about qualifications but they're imparting this guff because they've realised, by experience, that it's qualifications you need in order to get the things you want – it's a drag, but the way of the world unfortunately.

Work hard at your A levels and get straight As, choose a good course at a decent University (Oxbridge, Durham, London, York, Sussex), take a 1st or 2:1 and the world – and journalism – will be your oyster.

And for those of you already grown up and without formal qualifications, don't worry! All universities, polytechnics and further education colleges accept 'mature' (21 or over) students without qualifications on to their courses at the discretion of the Admissions Registrar. And if you're at home, with a couple of kids and no income, apply to the Open University. You'll get help with course fees and be able to study at home in your own time.

Right. I'll step down off the soap box now, but remember: education is the best thing that can happen to you and it's still, just about, available to all.

MACHINE VS. MACHINE

When are we going to stop having to read the 'my Amiga is better than your ST' nonsense that so many computer magazines print just now? I'm sick to death of reading this rubbish. Who cares? That's what I think. I bought the ST because I wanted an ST. The Commodore Amiga may have better specifications - so does the Cray X-1 super-computer, but my ST does everything necessary for me to carry on my hobby of computing - all at a reasonable price.

The Commodore Amiga is a fine machine, but I didn't want one. And now, I don't want to hear about its battles with the ST.

Jerome Nogget, Vauxhall, London.

Well, it seems to be a perfectly reasonable wish, but unfortunately, many people enjoy a good tussle with the 'opposition' and as long as the Amiga Vs. ST letters keep pouring in, we'll continue to print them here (but only if they offer some new perspective that is...)

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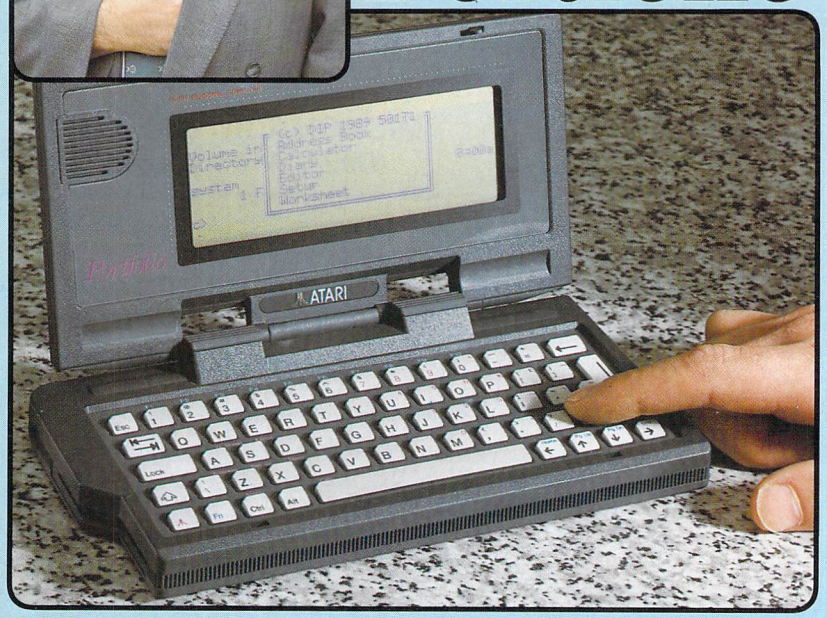

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The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

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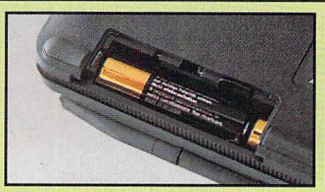
For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



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Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

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Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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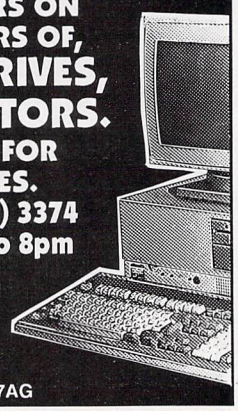

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Ampower 136
Arnor 24
Atari Corp 78, 79, 99, 101
Avon Micro Centre 137
Bleinheim Database 96
Bell Music 120
B-Soft 126
BCS 132
Bruce Everiss 132
Byteback 104
Cambridge Bus. S/W 99
Care Electronics 94
Castle Computers 56
CMV Computers 72
Computer Connections 100
Computerwize 137
Database S/W 32
Digital Dimension 120
Digital International 6
Datel Electronics 12
Digicom 10
Dowling 23
Entertainment International 2, 47
Evesham Micros ..... 62 & 63
Eon Software 101
Express Works 82
Format Media 122
Frontier Software 15, 140
Gasteiner Technologies ..... 20 , 32, 70
GFA 116
Goodman PDL 94
HAL Computers 130
Hi-Soft 139
Homebase Business 137
Jolac 128
Kadsoft 101
Ladbroke Computing 92
Lamda 136
Laser Scan 137
Mail Centa 128
Manor Court Supplies 94
MD Office Supplies 109
Media Direct 76
Merlin Express 68
Micro APL 85
MicroLink 57
Microtext 122
Miditech 70
MJC Supplies 16
MPH 116, 117
MT Software 84, 85
Music Matrix 120
Newland 104
Overseas Media 3
PDOM PD 89
Perrymere 136
Penge 132
Ramara House Software 130
Riverdene pdl 126
School Software 130
Silica Shop 29, 103, 135
SK Marketing 34
Softmachine 117
Softsellers 53
Software City 50
Soft Exchange 130
Softville PD 87
ST Club 122
ST Computing 136
TC Developments 126
The Software Clearance Centre 60
Third Coast Technologies ..... 30 & 31
Turbosoft 48
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THE KENNEL CLUB

Back in the beginning, when the ST was young and its programmers foolish, many products of ahem, less than superior quality appeared on the market, then quickly disappeared again among a flurry of denigration. Every dog has its day however and here in the Kennel, we feel it's time some of these dogs of the software world returned to see the light of day...

BASIC - Beginner's All-purpose Symbolic Instruction Code - first appeared over two decades ago to universal acclaim. Philon BASIC-M appeared half a decade ago to universal groans of disapproval.

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Although touted as needing only two floppy drives to run, compilation was next to impossible without a hard drive, and remember, this is 1985 when hard drives for the ST are like gold dust and cost around £1000.

And how about this for a beginner:

-w -OT2 bastext.mb

or this:

-w -n -im -s testext.mb

or the outrageous:

-w -oexecfile -uc
@-L/libs/format testext.mb

...not the stuff of which simple introductions to programming are made.

Twisting and turning like a twisty, turny thing, Philon weaved itself into a web that became its early grave. The compiler gets a Poodle award for looking pretty but being a pain in the ass...

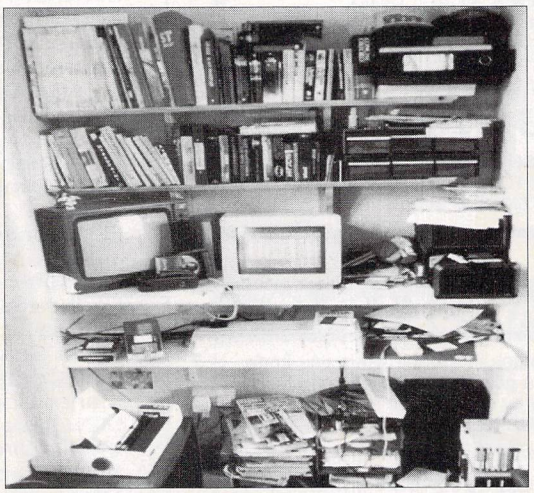
DICKY DESKTOPS!

Do you have a strange set-up? Do desks awash with disks, joysticks and junk make it decidedly difficult for you to compute? After some ultra-neat entries from clean kids attempting to wring recognition from 'USER, we've got a corking good (or bad...) picture from Clive Parker of Pill, Bristol.

The man's computer room is a positive sewer! Synthetic furry mouse covers alongside crap-laden coffee cups and some very strange reading material! Kays mail-order catalogue to something called...is that 'Format'? Can't be...

Listen kids, you're gonna be gunning some to create a mess as outrageous as Clive (a boy-scoutishly sensible name for such an unclean person...), but novice desktop destroyers will be encouraged.

Desks resembling cesspits make it to the safety of the page, so if yours contains everything in hideous excess, snap it and send it in...



A	R	N	O	R	N	O	L	T	P
T	J	E	C	A	L	A	P	G	F
K	R	I	S	O	F	C	O	R	I
K	U	M	A	V	K	C	F	E	R
L	M	N	B	P	E	V	Q	M	E
V	Z	C	X	A	W	Y	D	L	B
R	T	A	N	C	O	O	E	I	I
A	H	T	I	G	I	D	H	N	R
S	D	L	O	G	S	U	G	B	D

More frame-based fun

Yet another crummy word search but in this one, you have to use skill and judgement (OK, guess...) to determine the location of ten well-known ST software houses.

The first postcard with all the names picked from the mail sometime next month may get a prize. Oh, and just to sort the men from the boys, the haves from the have-nots, the winners from the losers, here's a little tie-breaker. Rearrange the following letters to make a well-known staff writer:

Jape Buttocks

Have fun

IZZIZZES

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CLOSE BOX NEWS/TECHNICAL EDITOR:
Jerry Glenwright

CLOSE BOX ART AND DESIGN:
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Seeing is believing!

Lattice C 5

Actually shipping at last, Lattice C version 5 is an extremely versatile and powerful development system for the popular C programming language, adhering closely to the new ANSI standard. The system is characterised by a truly flexible environment together with the attainment of a very high speed of object code execution.

In the development of Lattice C 5 for the Atari ST, the emphasis was on producing a package which can be used easily by the novice to the language as well as by the seasoned expert. Freedom of choice for the user was essential if this goal was to be attained and this has been achieved at all levels of the development cycle resulting in a flexible, easy-to-use and extremely powerful collection of programming tools - probably the ultimate C system for the Atari ST!

Key features

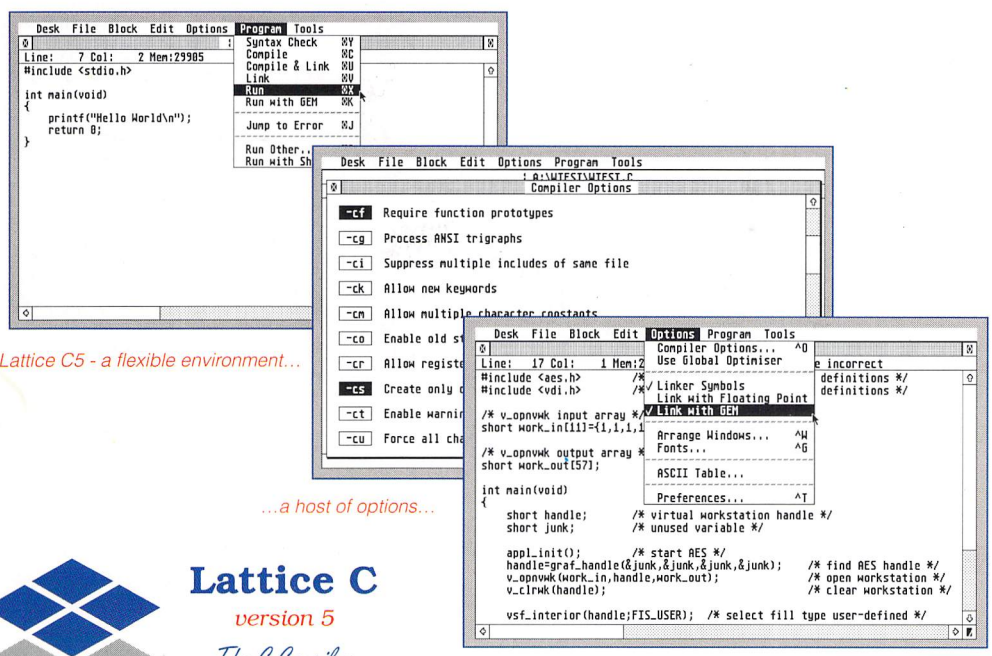
- Powerful C compiler generating very fast native code, plus high ANSI conformance
- High performance global optimiser for removing redundant code
- Fast linkers with many features including automatic branch extension
- Fully integrated HiSoft environment with complete configurability and brand-new, multi-window editor, from which you can run all the other tools
- The most complete set of C libraries ever released on the ST: Lattice C 3 , HiSoft C, Lattice C 5, ANSI, UNIX, AES, VDI, BIOS, XBIOS, GEMDOS and LineA
- Librarian for examining and constructing libraries quickly & easily
- Powerful and flexible Resource Construction Set, the very latest version of HiSoft WERCS
- Standard assembler allowing quick & easy low level programming. Link with other assemblers like DevpacST
- Disassembler for you to optionally hand-optimise the code produced by the package
- Special version of the MONST debugger allowing automatic loading of your source code and tracing via line numbers together with a host of low level debugging commands

Lattice C 5 requires:

- Any Atari ST computer with at least 512K memory, a double-sided floppy disk drive & TOS in ROM, although the use of 2 floppies or a hard disk & 1Mb+ of memory is recommended.

The package contains:

- 3-volume documentation; User Manual, Library Manual and Atari Library Manual giving comprehensive details of the complete system including a step-by-step tutorial
- 7 double-sided disks in a protective wallet
- Full installation instructions for your particular system.



Lattice C5 - a flexible environment...

...a host of options...

Lattice C
version 5
The C Compiler for your Atari ST

...resulting in an unbeatable combination of power & ease-of-use.

Only £149 inc. - order your copy now!

HiSoft

"Best Software House, Best Customer Support, Top Programming Language (DevpacST)" ST World Awards 1989

Lattice C 5 is just one product from our growing software range for the Atari ST. Other titles include: Harlekin (£49.95), KnifeST (£29.95), Spectre GCR (£379), DevpacST (£59.95), HiSoft BASIC (£79.95), Power BASIC (£49.95), HiSoft C (£49.95), FTL Modula-2 (£99.95), CRAFT (£49.95), HiSoft FORTH (£39.95), TurboST 1.8 (£34.95), Tempus 2 (£39.95), WERCS (£29.95), ProFlight (£39.95) & more.

All software should be available from your local dealer. In case of difficulty, you can order directly from HiSoft by phone, using your Access or Visa card or by mail, using Access, Visa, a cheque or postal orders. Our prices include VAT and shipping within the UK.

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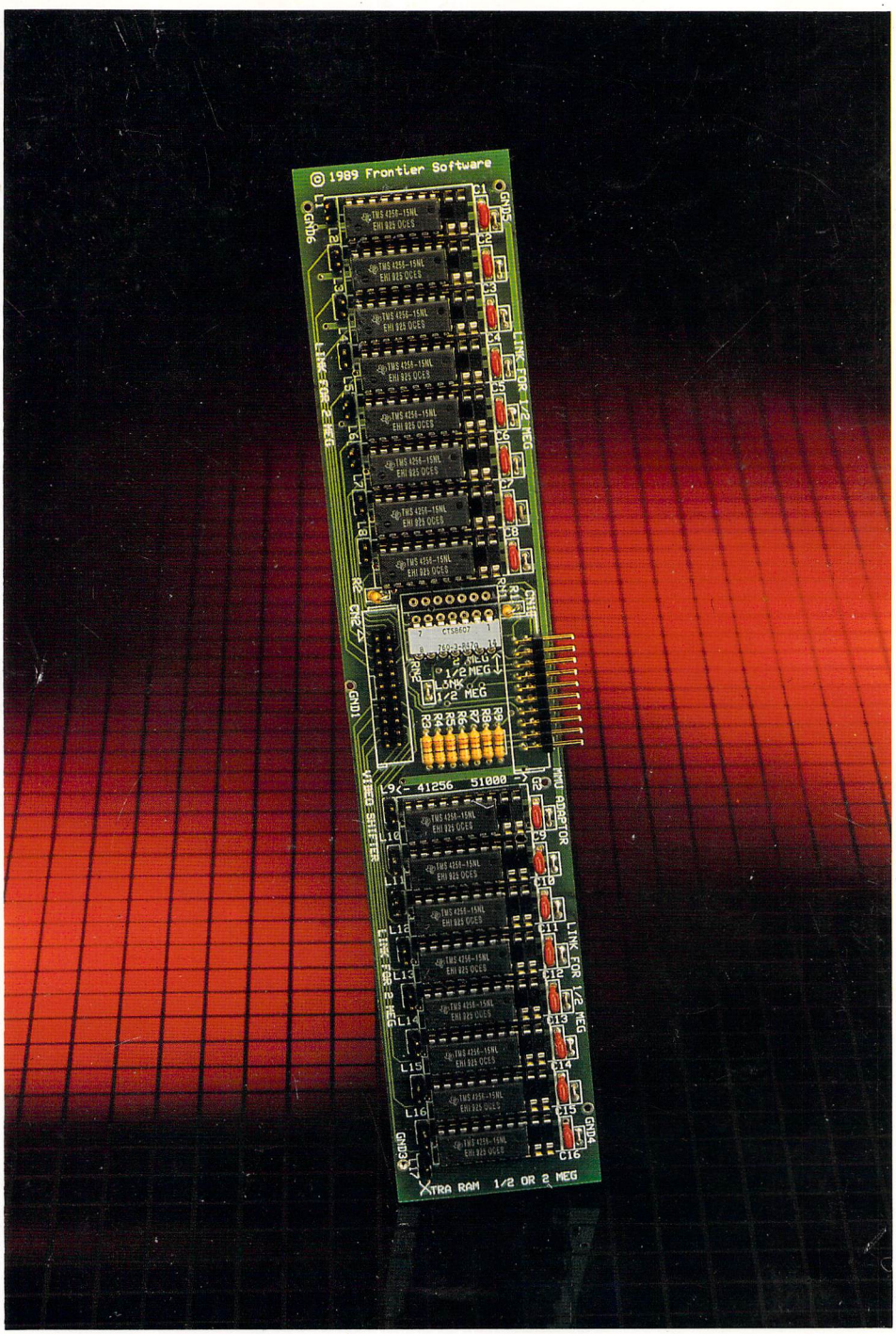
No More 'Out Of Memory' Headaches



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 any $^1/_2$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 any keyboard ST or Mega 1ST to $2^1/_2$MB or any Mega 2ST to 4MB).

• Prices

XTRA-RAM Unpopulated	£64.99
XTRA-RAM Populated to upgrade a $^1/_2$MB ST to 1MB (can later upgrade to $2^1/_2$MB simply by changing RAM chips)	£79.99
XTRA-RAM Populated with 16 1Megabit RAM chips to upgrade keyboard STs and Mega 1STs to $2^1/_2$MB and Mega 2STs to 4MB	£189.99

All prices include VAT. Please add £2.30 postage and packing to all orders under £120.00. Frontier accepts payment by Visa or Access.

Available from your local dealer, or direct from:

Frontier Software

P.O. Box 113, Harrogate, North Yorkshire HG2 OBE.
Telephone (0423) 567140/530577. Fax (0423) 522874.

°°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.