ATARI ST USER

MARCH 1991 ● ISSUE 61 ● £2.95

BRAVE NEW WORLD

Daring predictions for the next generation of STs

EXCLUSIVE!

New 3D graphics series in six parts – step by step guide

BEHIND THE SCENES
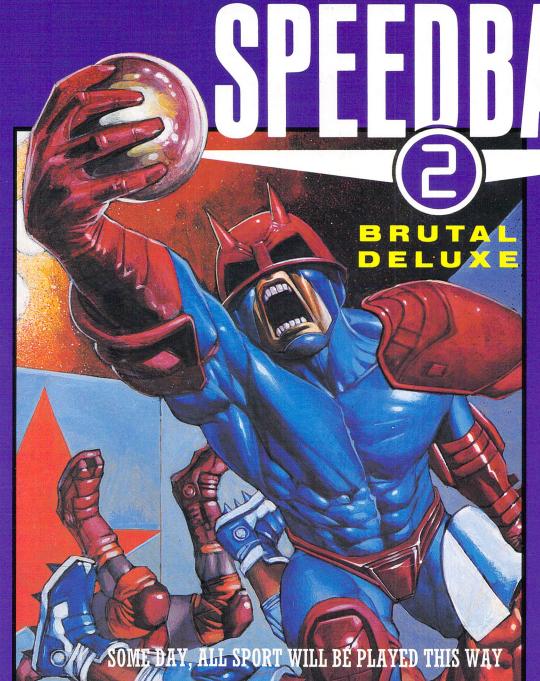
Discover how a commercial program is developed

Where's that CoverDisk?
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● Reviews – PageStream, WordFlair, Reflex Graphics Card and more

● Competitions – more than £750 worth of prizes

● The best ST news coverage

● 18 pages of games reviews, news and tips

● And much, much more

CONTENTS

FEATURES:

'USER 61

REGULARS:

ASPECTS:

The pages bringing you news of your favourite subjects each month. Bulletin boards, clips, compact discs – it's all here and more too:
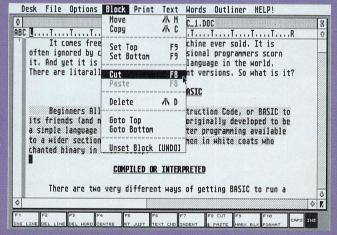
● Curious as to where HiSoft BASIC came from? Find out in The BASIC Story on page 59

● We have five copies of PageStream, the desktop publishing package, to give away. Turn to page 77
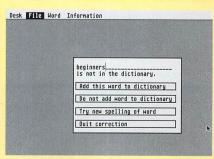
● Get your words' worth with this month's Masterclass on word processors. It's on page 85
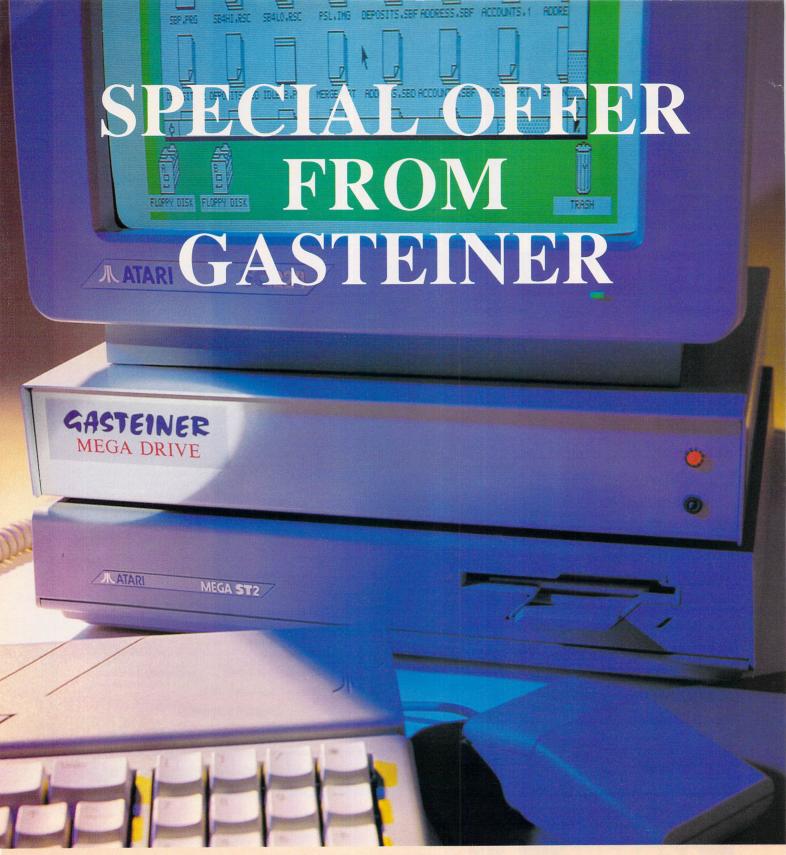
A brilliant, fully playable demo: Jupiter's Masterdrive

Keep your spelling in check from now on…

ON FINAL APPROACH

Almost as busy as Chicago's O'Hare Airport, the ST is to get another flight simulator. Coming only weeks after the launch of HiSoft's ProFlight, this latest simulation, aimed at the civilian flyer, is due for release in spring.

The Light Aircraft Simulator has been produced by Digital Aviation, and will be distributed by Virtual Reality (0272 550900).

Pilots can choose from three types of aircraft, including a Cessna 150 and an old favourite Royal Air Force trainer, the D H Chipmunk.

Offering everything from basic training to aerobatics, the simulator is described as having extensive detail on airfields throughout Southern England and allows for flights to the rest of the British Isles and Northern Europe.

Developers believe that the program offers the ideal environment in which to practise flight
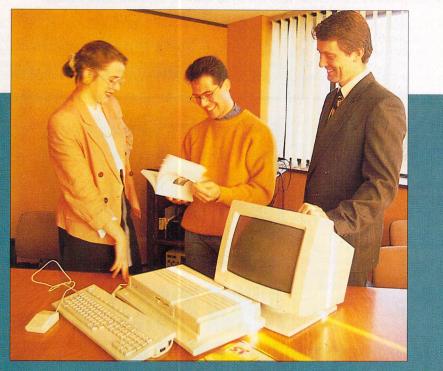
SubLogic's ageing Flight Simulator II is at last to have a serious competitor

instrument appreciation, and to learn general navigation techniques including visual and radio navigation approach procedures using VDF, ADF, VOR and ILS.

Until now this section of the simulation market has been dom-

inated by SubLogic's Flight Simulator II, which has been available for the ST since the early days of the machine and has become very popular with student pilots.

Digital Aviation's Light Aircraft Simulator costs £44.95.

PRIZEWINNER RECEIVES HIS TT

The winner of the £20,000 *Atari ST User* relaunch competition received the top prize worth almost £2000 recently. Paul Lethbridge, 25, from Lewis, Sussex (centre) won the only Atari TT and monitor to be given away in a competition. It was handed over at Atari UK's Slough headquarters by Claire Walls, editor of *Atari ST User* (left) and Peter Staddon, marketing manager for Atari UK (right).

Paul Lethbridge previously ran a 1040ST with SM124 monitor, which he has used for various serious applications including simulating molecular bonding while taking a course at the University of Sussex. He is now a development physicist and will be using the TT's extra power to aid him in his work.

The TT is a far cry from other prizes he has won. Many years ago he won a 93p cheque from John Player, and more recently a personal organiser from a local radio station.

EDUCATION CALLS UP STs

STs are being recruited in the fight against bad spelling following Education Secretary Kenneth Clarke's instruction that school examiners deduct up to 5 per cent of GCSE marks for bad spelling.

Now Database Publications has announced the release this month of an all-formats computer program to teach spelling to children from 5 to 15.

The program, which has a vocabulary of 5,000 words, is designed to improve the spelling of children of all abilities and in all subjects.

It contains all the basic words they will need to be able to spell during their school career if they are not to be penalised in exams.

SPELL! has been devised by Peter Davidson, former head of computing at a Manchester comprehensive school and now editor of the world's first computer comic, *Let's Compute!*

It has been programmed by a team of teachers headed by Chris Price, one of the authors of Britain's top-selling educational software, Fun School.

The £8.95 SPELL! package consists of five different programs, all of which use the inbuilt vocabulary to produce spelling tests of varying difficulty.

AMERICAN FIRM SETS UP IN UK

US software house Soft-Logik Publishing is poised to open its first overseas office. The firm's offices will be sited near London, where all future product, technical and marketing support for the UK market will be carried out.

Until the office is open Silica Systems (081 309 1111) will continue to distribute the Soft-Logik products.

The St Louis-based firm is responsible for the desktop publishing package PageStream, which has recently undergone changes for the British market including the introduction of adapted English files.

PRICE IS RIGHT

Silica Systems would like us to point out that the price of ICD's AdSpeed card mentioned in last month's news pages is £199 and not as quoted in the story.

EDUCATIONAL BUNDLE SOON

Atari has confirmed that it is planning to release an educational bundle within the next few months. The new bundle is set to compete against Commodore's Class of the '90s pack which has been on sale since 1989 and is based on the Amiga.

The new Atari pack will include a 520ST, a monitor and a selection of software with the aim of "creating mega [ST] volume in schools".

The price is yet to be finalised but it is expected to retail at £450, with educational discounts and volume purchase reductions cutting that figure further.

In a year in which Atari is promising to put a more serious face on the ST, it has also been confirmed that the company will be holding a London show.

Although there is no fixed date or venue, the computer giant has indicated that it is considering the event during the last weekend in May or first weekend in June.

The Mega STE, currently undergoing Government certification tests, is to be shown for the first time in the UK at the London show.

Since its launch at the 1990

Atari has promised another London show this spring where the Mega STE will be displayed

Comdex show in Las Vegas, the new Mega has been seen by the Press in Germany, where it is poised to go on sale at DM2,700 – equivalent to £920 – for the four

megabyte machine with a 48 megabyte hard disk.

Atari Germany's next Dusseldorf Messe will be held in Halls 11 and 12 of the Dusseldorf Fair-

ground on August 23 to 25. This year the company is expecting 250 exhibitors from all over the world, and an increase on the last show's 42,000 visitors.

ST TEACHES THE YOUNG

Hooray for Henrietta is the name of a new ST educational software release from Scetlander (041 357 1659). The program is aimed at teaching 5 to 12-year-olds mathematics in a fun way and concentrates on basic arithmetic questions including division, subtraction, addition and multiplication.

It's split into eight levels of difficulty, and each is divided further

to give low, medium and high difficulty stages. Certain sections of Hooray for Henrietta are tied to the National Curriculum levels of achievement.

The Scottish software house is also working hard to ensure an early release of another program in the education field. Book of Spells should be available in the very near future and is directed at users aged seven or above.

It is made up of five games, including the ever-popular Hangman, and inside each there are the additional low, medium and high difficulty levels. Words range in length between five and nine letters, so the program is usable by adults and children.

Company spokeswoman Liz Ibbotson says the products are different from others in the same market because "kids love them".

She added, "Others don't have the same appeal to children and we now categorise our software as educational games."

Both the Book of Spells and Hooray for Henrietta have been priced at £24.99.

The latest educational package to teach mathematical skills is Hooray for Henrietta

Drop-down menus are now included in the lower cost version of Protext

JUNIOR PROTEXT GETS PULL-DOWN MENUS
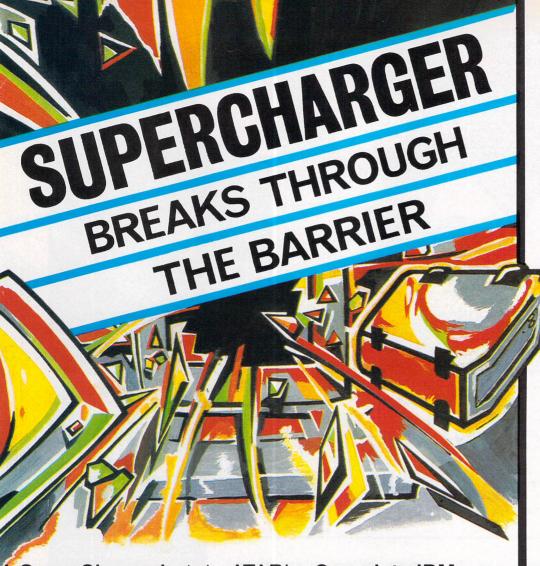
Following its introduction of GEM-based pull-down menus into version 5 of its Protext word processor, Arnor has decided to add a similar upgrade to the cheaper version 4.3, which costs £99.95.

Additonal new features in the cut-down version 4 are dialog boxes, improved mouse support including block dragging and a new file selector.

Arnor managing director Mark Tilley said the aim was to give a lower priced program for people who don't want all the additional features found in version 5.

Version 5 continues to give much better printer control, indexing and contents, offers an improved Collins dictionary and has optional foreign language dictionaries.

A thesaurus is also to be added shortly by the Peterborough-based software house (0733 68909).

LYNX SENT TO GULF

Lynx exhibition stands have gone to the Gulf

Not only have Royal Navy Lynx helicopters made the trip east to join the forces at war in the Gulf. Atari has also deployed 15 of its hand-held Lynx games consoles to American defence personnel stationed in Saudi Arabia.

The machines were sent in the display stands, similar to those that have appeared at the recent UK computer shows. Meanwhile,

Atari promises that there will be at least 50 software titles available for it by the end of this year. There are 16 games on the market now, with another 12 due for release in the next three months .

At the recent Computer Entertainment Show in Las Vegas, a

new price tag was fixed to the machine. In the States it now sells for $99, excluding a power adaptor, software or sales tax.

UK industry sources expect to see the popular games console on sale in this country for £99 before too long.

CALLIGRAPHER UPGRADED

Calligrapher Professional, the document processor from Working Title (0865 883592) has been upgraded to version 2.12. New features include the ability to install two printers at once, more commands for creating mathematical formulae and better on-screen drawing tools.

Screen redrawing has been speeded up. Calligrapher now only redraws those parts of the screen that have changed, speeding up the whole program but there's no increase in screen scrolling.

The Line_Arc program that provides Calligrapher with its vector fonts has also been updated. On-screen vector fonts are now supported for STs with more than 2Mb of memory and a hard disk, and documents are now WYSIWYG. A system of font hints has also been introduced to speed up the calculation of font sizes.
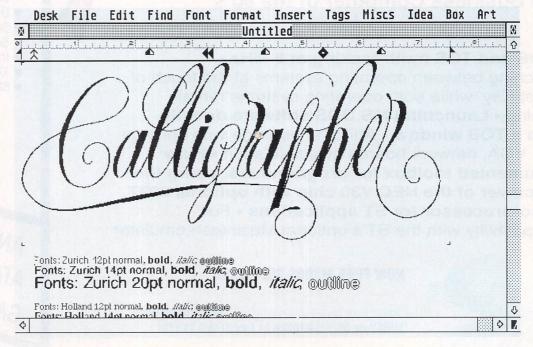
Line_Arc has become compatible with other GDOS pro-

grams, so you can use vector fonts in programs that don't normally support them.

Although not all applications are compatible it is said that

most GEM programs work well. Line_Arc intercepts the normal GDOS printer calls and replaces them with its own routines to produce output.

Calligrapher Professional's new on-screen vector fonts give a true WYSIWYG display

ST BIG AT SHOW

More than 22,000 visitors found much on offer for the ST user at the third 16 Bit Computer Fair, now in its bigger venue at the Novotel, Hammersmith.

The event was organised by Westminster Exhibitions (081 549 3444) and had many exhibitors from the home and overseas market.

HiSoft showed ProFlight running on the TT, and like many other standholders offered massive savings on its range of products.

Frontier Software was showing its new Xtra-RAM ST+2, which is added to the company's older memory upgrade Extra RAM to lift the memory of any ST up to four megabytes.

Frontier's stand also had its new Printer-Q printer buffer on show, which gives user-expandable memory sizes ranging between 128K and one meg.

Silica Systems, Kuma, Arnor, Radio Service Company and Compo were among the other big names in the industry to pack into the exhibition halls, and the public domain was well represented with large libraries such as 16/32 PDL and SoftVille.

Among a strong contingent of international companies, and making its first appearance at a UK show, was Soft-Logik Publishing from St Louis in the USA. Copies of its DTP package PageStream were demonstrated on the TT by heads of the American software house.

From Texas came Double Click Software which had the commercial version of Quick ST II and Swiss firm A + L AG took along a range of Modula-2 programming languages and compilers.

Geography Tutor, the commercial version of the public domain program which was covered in the September 1990 issue of *Atari ST User*, was among software offered by the Quebec-based software house ASDE Inc.

The next show, to be held from July 12 to 14, will have its title changed to the 4th International 16 Bit Computer Show.

A Westminster Exhibitions spokesperson said: "The name of the show has been changed to take into account the event's growing reputation overseas for both value and professionalism.

"An increasing number of companies from North America and Europe have decided to take advantage of the opportunity to show their latest products at the show."

The next show promises more than 190 exhibitors, showing both leisure and business software.

The main complaint at the recent show was the lack of aisle space for visitors.

Following the feedback the organiser is planning to have more generous room available at the next exhibition.

NEW BOARD SUPPORTS VGA

PC emulator, ATonce, has had another major upgrade to its software. ATonce is now able to support monochrome VGA graphics as well as EGA. Existing users can upgrade to version 3.1 of the software free of charge.

The board and software is manufactured in Germany by Vortex but the product is distributed in the UK by Silica Systems (081 309 1111). It's priced at £199, or £249 if a copy of MSDOS is included.

One of the most popular PC emulators gets monochrome VGA graphics

The document processor, Word-Flair, is due to be upgraded within the next three months. New features in version 2 of the HiSoft (0525 718181) package will include a spelling checker, thesaurus and the ability to import data from databases other than WordFlair's.

The price will be increased by £20 to £99.95 but users buying the program before the end of March will be able to upgrade to the new version for £19.95. After that, the upgrade charge increases to £39.95.

Other news from the HiSoft

WORDFLAIR AND PROFLIGHT UPDATE

stable concerns ProFlight, its Tornado fighter simulation, which has also been improved. It now uses 16 colours instead of four but despite the extra use of colour the frame rate has been only very slightly reduced.

Pressing the Help key pauses the simulator and pilots can escape to the Desktop by pressing a Control key combination. Runway markings and cloud have improved and the action

can be saved to disk to enable users to reload a saved position.

The Bedfordshire company is best known among ST users for its programming packages. Two of them, Lattice C and Devpac, have been converted to run on the new Atari TT.

The whole range of HiSoft's in-house products are now compatible with the TT although some don't make use of the machine's extra capabilities.

A lot can happen on the international ST scene in a month. We bring you the latest news from around the globe

WORLD *News*

Retouche in action: poor scans can often be made usable by the judicious application of these effects over parts of, or the whole picture

The ability to save your brightness and contrast curves to disk can be an enormous time saver, once you're familiar with your scanner

TOUCHING UP THOSE PIXELS

The weakest link in the ST's desktop publishing armoury is undoubtedly the reproduction of photographic images.

The recent glut of new scanner models, far from solving the problem, has only served to introduce larger numbers of ST users to the inadequacies of grey shades simulated by dithered patterns of black dots at the low resolution of laser and dot matrix printers.

At the top end of the DTP spectrum, the professionals use true greyscale scanners alongside true greyscale monitors, with image editing software to match – usually Apple Macintosh software. The usual destination of this work is a hi-res typesetting machine.

From the hardware angle there is no reason why this should not be done on the ST: true greyscale scanners from Epson, Panasonic and other manufacturers have been available with ST interfaces and driver software for some time in Germany, as well as the requisite graphics cards and monitors.

The ST may be a little slow for this type of work but there are accelerator boards and now the 32MHz TT.

But where is the software? The answer is in Germany. At the last count there were four products to rival Mac heavyweights such as Digital Darkroom, Retouche Professional, ImageStudio and PhotoShop.

And the good news is that at least one of these, Retouche Professional, is already half way across the Channel and will soon be available to UK users.

The full version has a most impressive specification: true halftone editing with up to 256 true greys, virtual memory support to cope with the enormous file sizes generated (up to 16Mb per picture), import and export of all common file formats (IMG, TIFF, etc), vector tools, PostScript and Calamus fonts, and true lithographic screens up to 120 lines per inch (lpi).

Most of us are unlikely to come very near to true greyscale scanners and monitors, let alone own one, but that does not mean that such software is of no interest to the ST user of more modest means.

Thousands of Mac owners with little more than a MacPlus and a LaserWriter are using the likes of ImageStudio as art programs in their own right.

With these they can avail themselves of the powerful editing tools to touch up dithered monochrome scans far more effectively than with ordinary paint packages.

For this market, there is Retouche – without the 'Professional' tag – but still a mighty shifter of pixels by any standards. Capable of 256 greys, the package does an excellent job on an average IMG or Degas scan and provides the most versatile paint brushes around.

The Retouche and Retouche Professional packages are marketed in Germany by the aptly named 3K-Computerbild (010 49 2153 60001), and the UK distributors will be Copycare Business Services (081 679 7307).

COMPETITION FOR ULTRASCRIPT

UltraScript, the software emulator which enables any ST printer to output PostScript files, has proved rather elusive in the UK. Mirrorsoft is supposed to distribute it alongside version 3 of Fleet Street Publisher but apparently Imagen, its North American manufacturer, is slow to provide an ST version that recognises the new fonts used by FSP. There is as yet no official UK distributor for the older versions – which are freely available in the rest of the world.

Meanwhile, an alternative product has been launched by a French company, Procyon. Like UltraScript, Grafx is a PostScript interpreter that can be run in either automatic or interactive mode. Unlike UltraScript however, it also incorporates a few other goodies such as a display preview, a text editor for the creation and modification of PS source files and, above all, the ability to use GDOS fonts. The fonts can be used either directly or through conversion into PostScript-compatible fonts. Even a font editor is included.

Grafx is sold with a starter pack of Times, Helvetica and Courier fonts and can drive the Atari laser and most dot matrix printers. No UK distribution or price details are known yet, so your best bet is to get out your French dictionary, brush up on that high school French, and give Procyon a ring in Paris on 010 33 56505410.

SOFTWARE HOUSE TAKEOVER

MichTron, the long time American Atari development and import house, has been bought by Creative Computer Corporation of Newark.
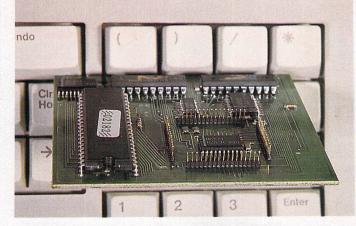
CCC's president, James A Dorsman has taken over full operation of all technical support, development and publishing for MichTron. Gordon Monnier, former president of MichTron will be retained by CCC as a consultant.

The new management has promised an "aggressive and exciting new product launch" and continued support of MichTron's existing product line. Dorson claims that MichTron intends to continue distribution and service for the overseas publishers it has worked with in the past, and to seek out new products from home and abroad.

Despite this claim it is clear that they will not be distributing all the earlier products. MichTron had for many years been supplying HiSoft products but since the buyout, the company has formed a new US partner; Goldleaf and Talon Technology Inc has taken over the distribution of PC Speed and AT-Speed.

MichTron is located at 3201 Drummond Plaza, Newark, DE19711 and can be phoned on 010 1 302 454 7946.

PC Speed was in the MichTron product range but has recently been handed over to Talon Technology Inc for US distribution

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Version 3 of Megapaint II: It now comes in a modular design

A NEW LOOK FOR MEGAPAINT

You just can't keep those busy people from Berlin-based Tommy Software (010 49 30 6214063) out of the news – well not at the rate at which they're developing their software.

Hot on the heels of the preview of Megapaint Professional in the last issue, Tommy has announced Megapaint II, version 3. This latest version is of modular design, enabling easy integration of new features and custom extensions.
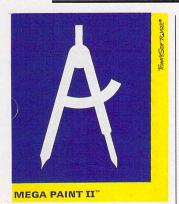
The first three modules available for version 3 go a long way towards answering the few criticisms made of earlier versions.

A TT module makes Megapaint compatible with Atari's top model, MegaConvert provides the ability to convert the program's own vector files into GEM metafiles and vice versa, and the ACC module gives access to Desktop accessories.

ULTRA-FAST GDOS REPLACEMENT PLANNED

Many ST users will cringe at the mention of GDOS, with its associated GEMSYS and ASSIGN.SYS files, its many internal complications and above all, its tendency to slow down the computer.

Some products like G+PLUS and the German PD replacement AMCGDOS have made life slightly easier and faster but a fundamental overhaul of the way screen and printer output are handled by the ST's operating system is desperately needed.

It may be some time before owners of ordinary STs can benefit from the new developments on the TT. Under development is NVDI, a new German hack designed to work as a full replacement for GDOS.

NVDI will incorporate a new, integrated VDI screen driver, and is rumoured to be very cleanly programmed and extremely fast, rendering utilities like Turbo ST and Quick ST superfluous. More about NVDI soon.

The TT receives official US certification and is scheduled for almost immediate release

TT, MEGA STE PASS FCC

Atari's new Mega STE has passed FCC testing as a Type B (commercial/consumer) product and was scheduled to begin domestic distribution within the States almost immediately. This marks the first time that any Atari product has been approved for consumer release within 30 days of the first product announcement.

The TT030 is presently shipping to US dealers as a Type A (commercial use only) device. The price for the base unit (2Mb RAM, 50Mb hard disk) is still $2,995. Only value-added resellers and qualified dealers will be authorized to sell the TT. In the UK the TT is now also available from Silica Systems (081 309 1111).

Future Tense...

It's very difficult to predict the future. Many have tried, and most have been left with egg on their smug faces when the posturings and hypotheses have been proved, conclusively, to be wrong.

Everyone from Nostradamus through James Burke to Clive Sinclair – in the final analysis all completely and utterly inaccurate. Whither the end of the world, the solar powered cities, C5s et al?

So why should I risk a quick gamble on the future of the ST when it's almost certain that I too will be wrong?

Because by using common sense and examining closely the pointers which are all around, it really is possible to predict what might happen. And note the use of 'might', a word acting like an each-way bet.

And perhaps I want to predict the future because it's fun to speculate. What the hell if I'm only half right – quarter even?

Maybe five years from now, the wrist-mounted Mega with the high-definition LCD 1040 x 1040 screen, 300Mb hard drive and battery life measured in months not minutes will be a reality and I'll be able to tell you, quietly smiling, that you read it here first...

BEGIN AT THE BEGINNING

In the beginning, Tramiel created the ST and the people looked upon it, were shocked that it had appeared almost without warning, but saw that it was good. Often the best silicon fireworks appear with-out warning and the ST was no exception. Unlike the Elan/Flan/Enterprise, MGT Sam, QL and so on – machines whose market début was preceded by an announcement surrounded by rannygazoo months, sometimes even years, before they were actually available.

The ST however, received a preview here, a few words there, then slipped quietly onto an unsuspecting market.

With a few minor exceptions, which were quickly corrected, it was very, very good and sold well from day one.

All of which goes to prove that despite appearances to the contrary, manufacturers are constantly looking at ways to upgrade and increase their product range in

order to exploit, in the nicest possible way, an ever-willing market hungry for power.

You can be sure that Atari is, as we speak, developing products which would knock your socks off if you saw them today, but when they arrive in a year or two they will only seem like the natural evolution of what's around now.

Which brings me nicely to a second factor when guessing the future. Almost invariably, the silicon which appears tomorrow is actually here today, but is being held back for the 'right' release date or developed further.

This makes it competitive with what's already out there, as well as with products which are scheduled to be marketed by other manufacturers.

That splits into two arguments. Firstly, the machines you'll be buying in five years' time are probably around now, in that the technology they're based upon is already available from the high street, albeit at an inflated price.

Secondly, that products released 'ahead' of time simply flounder. Witness the demise of that extraordinarily good bit of kit, the Atari CD-ROM drive.

A corking device with fantastic power and an unbeatable price tag, but who bought it? OK, it wasn't exactly made easy to buy by Atari, but it was around... Released before its time, the CD-ROM is even now, gathering dust in some home counties warehouse.

It's remarkably difficult to discover completely new markets, although one or two people have managed it. Clive Sinclair almost single-handedly generated the home computer market with the introduction of his affordable ZX81 computer.

The machine was pitched just right to gain maximum attention. Rather than being advertised solely in electronics and propeller head magazines, the computer received attention in a large variety of national and accessible media.

The result was that the great unwashed – you and me – locked on to the possibility of a computer in the home.

No longer did the gigantic silicon brain require several rooms to house it, or earnest young men and women sporting white lab coats to attend to its many needs.

Instead, you and I could happily instruct the machine to calculate our integral calculus homework or play space invaders. One wrong instruction however, and everything ground to a halt – perhaps the computer was not the super-intelligence it was cracked up to be.

Manufacturers have to increase the public's awareness, create a new avenue if you like, before making their products available. Clive Sinclair did it, so did the Steves Jobs and Wozniak. But few others have had the necessary nerve, foresight or resources.

BACK TO THE FUTURE

And so to tomorrow. You might think that global concerns such as Atari could afford to throw a bit of cash around on a market gamble with an entirely new and unheard of machine, but you'd be wrong. Atari and the other big silicon suppliers are precisely the people who don't take risks!

Why? Because they've got so much to lose. In the early 1980s, Atari was to all intents and purposes a dead duck.

An 8-bit range which, although good, was overpriced and under-specified meant that the company responsible for so many coin-op

SO WHO DOES THE DEVELOPING?

If Atari and the other medium-sized computer companies aren't leading the field, just who is? Can it be that a 'future prediction' feature is going to escape making any predictions at all? Not quite...

The companies developing new technology are those whose business it is to do so. That's not quite the cop out statement it might at first seem.

Although computer manufacturers appear to be at the leading edge in terms of technology, and indeed one or two are, most simply have a dream of the kind of well-specified micro that would suit the current market.

They gather together existing resources and box them, often in an innovative way. Example? Look at Amstrad with its CPC range. It was firmly based in the technology of the day, but constructed in a way which, at that time, was unthinkably sensible and innovative.

Atari, of course is no different and did exactly the same. GEM on ROM so that it was always available, a quality monochrome monitor, MIDI ports and so on, meant that the ST was very well specified for its day and sensibly put together.

Atari and most of the other computer manufacturers develop their own gate arrays – custom chips which provide the logic for a system – but the real RDers are the drive companies, chip manufacturers, display developers, software engineers and the like, whose only option to further their interests is to create something new and different.

When Motorola or Intel's latest baby has sold well for a year or so, the only way forward for them is to develop the next in line or else concentrate on something entirely different.

If the range looks like it still has life left in it, then it's extended (68000, 68020, 030 and 040), if the product's at the end of its useful life however – Zilog's Z80 – further development of the family is discontinued and a new range is dreamt up.

Sounds simple right? In fact, it probably is in reality. Teams of young high-flying graduates, fresh from university are tenderly cultivated until they bring forth fruit.

The Abaq/ATW was Atari's foray into the world of transputers and although pulsating with power, the machine is yet to be seen by the public

capers was sinking into the red faster than Moscow after 1917.

Father Tramiel, erstwhile owner of arch-rival Commodore, sought out the brothers Warner and, by borrowing their cash, bought the dying computer company from them.

Almost immediately, Tramiel set about designing products which would revitalise Atari's flagging fortunes. But the great man didn't design a new and innovative machine, he simply looked and listened to what was already out there and doing well.

What he saw was Apple's Macintosh. What he heard was rumour of an independent company's 'home' version using Motorola's fairly new 68000 CPU which was on the verge of being sold to Commodore.

And what did Tramiel come up with, kids? You guessed it, the ST – Sixteen Thirty-Two, that is, the 16/32-bit chip the Motorola 68000.

With a WIMP-environment graphical front-end almost exactly like that of the Macintosh, half a meg of RAM, a built-in floppy and a few ports, the man had an 'innovative' machine which was destined to sell a million. Well, quarter of a million, but who's counting? Now do you see the way the future lies?

Manufacturers do not invent new and fantastic machines. What they do is to take the peripheral hard and software of other companies – such as Motorola's chips, Sony's drives, Japanese RAM, a Japanese-invented musical instruments interface, Microsoft's graphical answer to the Mac – and bung the unwholesome conglomeration into a tidy little grey-plastic case for a reasonable price.

Sure, Atari has R and D labs. Sure the company is 'creating' new computers. But you need to imagine those computers as jigsaw puzzles which have been created from other companies' pieces.

And don't blame Atari. Every other manufacturer, with one or two exceptions, is doing exactly the same. Imagine what it's like to be big, *but not quite big enough* – horrid, huh?

Because you're fairly big you can't afford to go around taking risks with machines which may never reach fruition market-wise, or on lame ducks that everyone else can see are destined for obscurity. You've got a reputation which you need to protect, right?

Look what happened to Clive Sinclair and his battery-powered trike. Far from receiving assurances of his comprehensive genius, the man was considered as a bit of a berk.

Sure, he'd scored high with the ZX81 and Spectrum – I owned an example of the former – and his belief in the commercial possibilities of miniaturised electronics led him to open up an entirely new and untapped market.

Unfortunately the fun stopped there. The same indulgence in techno-toys led to his spectacular downfall, when a small planet's worth of washing machine-powered executive transporters resolutely remained unsold.

Atari is one of those not-quite-big-enough companies. If it takes a risk and fails, then it looks very stupid. Unlike IBM which consistently lays to waste dollar mountains bigger than the GNP of many South American countries yet manages to produce enough good products to keep it going, Atari cannot afford to take risks in terms of cash or reputation.

The 'right place at the right time' market move that led to the ST and the turn-around of the company's flagging fortunes could easily have a reverse effect if miscalculated.

Yeah, you'll see portable LCD display game consoles, hand-held DOS-compatible computers – even Megas on the wrist, but only if someone else takes the risk first.

It's the way of the silicon world and Atari shouldn't be looked at askance for playing the game. After all, you want to buy the next upgraded ST don't you?

THE ATARI CD-ROM: WHAT HAPPENED?

Mid-1988, Atari really did come up with a first. The company unleashed onto an unsuspecting market the cheapest CD-ROM drive for any computer, anywhere! OK, OK, so Atari didn't actually develop the concept of the CD drive, but it did have the courage to launch the device into a market still entrenched in half and one meg floppies as a means of backing storage, and at a price which simply couldn't be beaten.

At £399, the Atari CDAR504 Optofile represented a magnificent and enormous step forward for home computer enthusiasts. It'd been around at Atari since early 1987, but didn't actually surface until more than a year later – even then however, it was simply too early.

And now for a home truth. The only reason anyone is actually involved at the manufacturer/distributor level – indeed at any level where cash is being expended – is to make money. Cynical perhaps, but these guys are not doing it for love and you'll lose a lot of hard earned if you think they are.

The point is, if everyone's making plenty of cash from existing products, the hardware and software of the day, then these same manufacturers and distributors aren't going to waste valuable selling time learning how to get the most from a 'new' medium, when their current range is doing well. 'If X does well, maybe we'll get into it later. Let's wait and see' is the prevailing attitude.

Atari launched its Optofile and a ripple of applause went up from propeller heads everywhere, and rightly so. Unfortunately, the rest of the silicon-interested community ignored the device.

Today, Atari is happy to sell you a CD-ROM drive if you really want one. You'll wait a long time for suitable software to make the most of the drive's power, however.

Atari quietly awaits the day when a market arrives which can be exploited with its ill-fated CDAR504. Hopefully this time with better results.

A remarkable price/performance achievement, the Atari Optofile is gathering dust somewhere in a Home Counties warehouse!

HYPERMEDIA

Now we're cooking, future prediction-wise. Hypermedia is a little buzzword which has been bandied around the industry for a couple of years now without anyone really knowing what it is or what they can do with it. In fact, hypermedia has enormous possibilities if only someone can think of them. First though, you need to know just what Hypermedia is.

Hypermedia is the sourcing of data such as animated video pictures, stills, digitised sound, text, computer-generated graphics and so on, into an homogenised whole inside your computer which is equipped with various attachments such as CD-ROMs, laser disc drives, CD players and more. These are then mixed and manipulated in a variety of useful, ingenious and breathtakingly informative ways.

Why? Because someone out there finally decided that it might be a good idea if you took all of the information available to you, mixed it, and used it in a complementary way, increasing the power of each medium by strengthening its message with the output from every other information-providing device.

The point is that you, end user, become master rather than servant of the information at your fingertips. You are able to define the order and manner in which the available information is presented.

The worm disk (Write Once Read Many) is another one of those fantastic bits of kit, ideal for multimedia applications that may make it to the half meg ST one day...

BUT IS IT ALL JUST MORE SPEED AND POWER?

Obviously, the things that most, if not all, users want are more speed and more power. A faster machine can provide more colours, cope with more sounds, drive better peripherals and so on.

Fine. But many desirable upgrades and future possibilities are somewhat more subtle than ripping out the 16/32-bit 68000 and installing the 256/512-bit Motorola 68090 when it finally arrives.

Here's what you'll probably see over the next couple of years. Some will make it, some won't. The only thing you can be sure of is that the process will be a steady one involving natural evolution rather than the startling appearance of strange new silicon.

Although transputer technology may seem to be the only way forward for standard STs if they're to be all-powerful, the likelihood is that the range will continue to be based around tried and tested technology which appears in other machines.

Sure, transputers are already at work in various power workstations, but in global terms they aren't widely used. They're expensive and you don't feel the real benefits until you bolt a few of 'em together – well out of the price range of home enthusiasts for many years to come.

What you'll almost certainly see, in spite of what many Atari pundits predict, is a continuation of the Motorola 68 line at the heart of any new ST. The TT uses a Motorola 68030, and a year or so will see the launch of STs/TTs based around 68040 chips with 68882 maths co-processors as standard.

A 68040 coupled with a 68882 provides power for the applications of tomorrow. Desktop video, hypermedia and so on all require immense amounts of processing muscle in order to be effective.

Desktop publishing today is pretty ineffectual on machines such as the BBC micro, Amstrad's PCW and the like, but the ST breezes through on-screen document composition. Similarly, the STs of the future will provide a level of hypermedia power and sophistication which will really breathe life into the concept in a way that today's machines can't.

A 68040 with its built-in paged memory management unit will allow virtual memory to be used. No longer will STers be tied to tiny amounts of RAM simply because it's expensive. Using VM, hard drive storage can used as 'RAM'. This development would offer real scope for large applications.

CROSS-TALK

An ST with a powerful chip set can also take on things such as local-area networking. And the machine of tomorrow will have built-in high-specification LAN ports and software to facilitate this desirable ability.

Including a LAN port and driver as standard means that the machine becomes attractive to a wider, professional audience – witness the TT – and so will sell in a market which was previously almost untapped.

Atari was highly praised for having the foresight to include MIDI ports as standard with the machine, and as a result of this addition, the ST is used more than any other machine of its class in pro-music environments.

What the future Atari computers will have however, is a full specification MIDI port quota – two MIDI ins, four MIDI outs and two thrus!

New users love the ST's WIMP environment, but as old hands know only too well, once the novelty wears off it usually just gets in the way. The ST of tomorrow has a vastly superior graphical front-end than today's offering.

No more the appalling file selectors, dreadful control panels, copying instead of moving between folders and so on which are part of the current and latest versions.

Instead, the front-end will smooth the way forward, easing the path of computing for both novice and experienced user alike.

REBEL, REBEL

An increasingly sophisticated home audience will almost certainly rebel if any more STs hit the market with desperate sound capabilities. Even the much improved STE is only little better than market rivals which have been around for years.
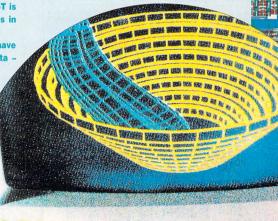
The days of silicon buzzes, squeaks and squawks will be gone for ever and in their place, the equivalent of a Fairlight CMI – version 3 at least – directly and easily accessible from the front end.

A display resolution of 1024 x 1024 pixels must be on the horizon, as are at least 1024 colours from a palette of 16 million.

And of course, every pixel must be completely independent of its neighbours so that the maximum graphical flexibility is achieved. Built-in, big-capacity hard and 1.44Mb floppy drives will complete the ensemble.

Last, but by no means least, Atari will finally get its promotional act together and begin to sell the ST in the same way that Apple, NeXT and even Commodore have, and begin to give the ST the recognition and market it so richly deserves.

USERDISK MARCH '91

DISK SIDE ONE:

JUPITER'S MASTERDRIVE

Fuly playable demo of the latest mega game from French games master UBI Soft. With both one and two player options, this is one of the best racing games around. It's sure to be a smash hit.

PINHEAD 17

Now you can halve your loading time with this AUTO folder program. Simple to use and it takes up less than 2K of space.

DISK SIDE TWO:

DEVPAC

The full version of the Machine Code Assembler from HiSoft. This enables you to follow the worked examples from our great new 3D Graphics series.

SPELL CHECKER

Banish spelling mistakes from your work for good with this useful utility. It not only checks ST Writer files, but most other common text formats as well.

ASCII CONVERTER
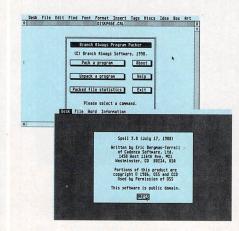
This enables you to convert ST Writer files into the international ASCII standard format. Also import your work into practically any other program.

WORD COUNTER

Count the number of words you've written for your latest masterpiece. Nearly all types of text file are compatible with this utility.

ANTIBOMB

Rid your ST of those annoying GEM cherry bombs and replace them with text messages instead. This utility will even help you to recover from certain crashes.

REMINDER

No more excuses for forgetting Granny's birthday or your dentist's appointment. Now your ST will be able to remind you of those important dates.

BAPACK

You're always looking for more room on your disks, right? By using BaPack, files can be reduced to a fraction of their normal size, so freeing up more disk space.

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 the 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 are limited by natural physical forces, ie if you only have one head then you 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 of you who just can't live without the tempting teasers on side two, there's a Side Two Service. For 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 send it. Send cheques and postal orders payable to Atari ST User Disk Offer; Europa House, Adlington Park, Macclesfield SK10 4NP.

LOADING GUARANTEED
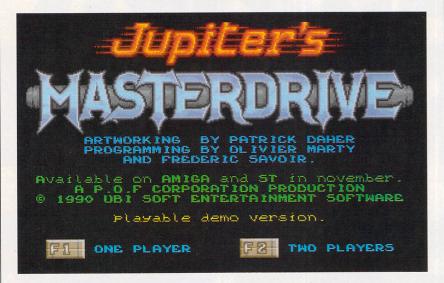
Look, we do our utmost to ensure that every disk is 100 per cent perfect. Unfortunately, physical forces such as those propounded by Einstein himself, suggest that a tiny proportion of those disks will contain errors.
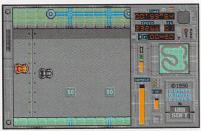
If you're one of the lucky readers who has a disk that conforms to Einstein's theories, but would rather have an ordinary, common or garden working disk here's what to do: stop panicking! We've come across the problem before and know how to solve it.

Wrap 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 Rd, Weldon North Ind. Est., Corby, Northants, together with your name and address and we'll replace it.
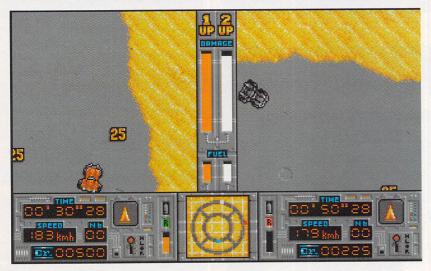
JUPITER'S MASTERDRIVE from UBI Soft

Configuration: All STs, Colour Only
Filename: MSTDRIVE.PRG

Masterdrive is the latest in a long line of racing games. Lotus Esprit Turbo Challenge, Nitro and Toyota Rally have all proved to be really successful, so Masterdrive is up against stiff competition.

The game has both one and two player options which bring all the excitement of the racetrack to your ST. Programmed in France, it combines the superb graphics – which the French are famous for – with fast and exciting gameplay.

To play Masterdrive use the SET PREFERENCES... entry under the OPTIONS menu to change to low resolution. When you're in the right screen mode, find the MSTDRIVE.PRG icon in the JUPITER Folder and double click on it.

First, select the number of players and make your way to the starting grid. Wait until the light turns green then you're off. Accelerate by pressing the fire button, and to shoot at your opponents just press forward on it. The race lasts for three laps. Not surprisingly, first across the line wins.

On the second level of the game, you pit your skills against other drivers to collect bonuses. The first player to make it to 10 is the winner. To help you plan your trip there's a radar screen located at the bottom of the monitor.

Antibomb replaces the normal cherry bombs with intelligent messages. It can even let the ST recover from some system errors

BANISH THOSE BOMBS!

Configuration: All STs
Filename: ANTIBOMB.PRG

At some time or other, every ST user will have been confronted with a screen which is full of little cherry bombs.

As with all computers, the ST isn't perfect. It is more tolerant of software mistakes than some other 16-bit machines, but sometimes rogue programs will manage to crash the machine so badly that even the ST can't recover. When this happens a number of bombs are displayed to tell the user that something has gone wrong.

Bombs may be very pretty – although annoying – but they don't really tell you anything about what actually happened. Antibomb is a handy utility which replaces the normal ST bombs with a meaningful message. In some cases it even gives the option to continue after the error, rather than resetting the machine.

Antibomb can be run from the Desktop, but to get maximum benefit it should be copied across to your AUTO folder so it's installed when the machine is turned on.

NEVER BE LATE AGAIN!

Configuration: All STs
Filename: REMINDER.PRG

People are prone to forget important dates and events, which can be annoying, embarrassing or completely disastrous. But now your ST comes to the rescue.

Reminder is a handy AUTO folder program that monitors the internal clock of your machine. Create a simple text file with all your important dates in it, and restart your machine.

Reminder checks the system date, and reminds you of any upcoming events. You can set Reminder to warn you several days in advance, so there's no excuse for forgetting that Valentine's Day gift.

ST WRITER UTILITIES

By now, you should have discovered just how useful and powerful ST Writer Elite really is. The program was included on last month's CoverDisk and it's probably the best ST word processor available in the public domain. In fact most of the articles for 'USER are written using ST Writer.

The word processor has a few drawbacks, such as the lack of a spell checker or word count. This situation is rectified this month with a folder on the disk called UTILS.STW which contains three new programs.

These three small utilities enable you to spell check your documents, count the number of words and there's even a utility which alters files, making them easier to use in conjunction with other programs.

If you haven't already created a special disk for ST Writer, now is a good time to do so. A separate work disk will give you plenty of room. It also means that you can store these utilities with the program they are intended to be used with.

Spell is a shareware spell checker ideal for use with ST Writer Elite

WORD COUNTER

Configuration: All STs
Filename: WD_COUNT.PRG

For anyone who does any serious writing, the ability to assess the number of words which have been written is vital. Even for the occasional user, a word count is a useful feature to have. Count is a GEM driven utility which gives the total number of words in any text file.

Double click on the utility from the Desktop and use the file selector to choose the file on which you wish to carry out a word count. It'll be more accurate on a pure ASCII file because ST Writer stores extra information in its files which can confuse the word counter slightly. Use the ASCII converter program to change ST Writer files to ASCII format.

ASCII CONVERTER

Configuration: All STs
Filename: TO_ASCII.PRG

The set of ASCII codes has been developed to allow different programs to exchange text files without problems. ST Writer, in common with most word processors, has its own file format which few other programs can understand.

It can save ASCII files, but what happens if you forget to save a document in ASCII format? You have to reload ST Writer, load the file and then re-save it. That seems like far too much hassle for such a simple operation.

Don't despair 'USER comes to the rescue this month with an ASCII converter. It is a simple GEM program which uses the normal ST file selector to choose an ST Writer file which is to be converted. A new name for the ASCII file has to be chosen. This allows ST Writer files to be imported into programs like DTP packages which don't support the ST Writer file format directly.

The converter works by removing any codes or symbols from the file which are not in the form of numbers or letters. This means that any style codes such as bold or underlined text are lost. Page layout commands are also removed, and lines end with a carriage return.

SPELL CHECKER

Configuration: All STs
Filename: SPELL.PRG

One of the main drawbacks with ST Writer is the lack of a spell checker. A standard feature on most commercial word processors, spell checkers leave you no excuse for any misspelled words. To make ST Writer even more usable, we've included a program called SPELL on the CoverDisk.

Spell is a stand alone program allowing you to spell check finished documents. Once you've finished writing, save your work and load up Spell. After the dictionary has loaded, open the document and watch as all those nasty little mistakes become a thing of the past.

Spell has a main dictionary of over 5,000 words, and you can add as many more as you like. Spell also allows words in the dictionary to be changed, so if an incorrect word is added by mistake it can be taken out.

This spell checker enables the user to add words to the main dictionary and to try new – and unusual – spellings for words

HISOFT DEVPAC 1 ASSEMBLER/EDITOR

GenST's assembly options. All assembled programs are sent to disk as .PRG files

HiSoft's GenST 1 showing a listing of the 3D graphics program by Andrew Tyler

Configuration: All STs
Filename: GENST.PRG

There are many languages available on the ST, but few people would argue that Assembler is the most powerful. Unlike BASIC, C and the rest, Assembler addresses the ST hardware directly, gaining the most from your machine.

The Devpac Assembler from HiSoft has a reputation second to none on the ST. It produces fast, compact code from within an easy to use GEM editor program. The editor and assembler are integrated into one program, so testing programs is quick and easy.

With Devpac now up to version 2, ST User and HiSoft have joined forces to bring you the complete version of the Devpac1 Assembler. This isn't a semi-working demo but a fully usable commercial program with no restrictions at all. The only thing that's missing is the debugger.

Devpac creates programs on disk as .PRG files. To run one just click on it from the Desktop. You'll find that writing programs in machine code has never been this easy.

Also included on the Disk in the 3DGRAPH folder is the example source code for the 3D Graphics program to accompany the article in the magazine. Turn to the Runtime page for more details on how to use these programs.

TURBO CHARGED!

Configuration: All STs
Filename: PINHED17.PRG

The ST can be quite slow when it comes to loading large programs into memory. A hard drive will often improve the situation, but it's an expensive solution.

One problem with loading programs is that the ST clears all available memory before loading a new program. This can take quite a while if you have a machine with a lot of memory installed.

Pin Head is a small – very small – AUTO folder program that patches the TOS operating system. It forces TOS to clear only as much memory as is required by the new application – this can radically improve program loading times. Pin Head will work on either AUTO folder programs or applications launched from the GEM Desktop.

The new TOS 1.4 and 1.6 ROMS also include the same type of Fastload system, but Pin Head is more compatible with some badly written applications.

NeoDesk 3 used the GEM Fastload code in the new TOS 1.4 ROMS. Pin Head does the same thing in just 2K

DOUBLE YOUR DISKS

Configuration: All STs
Filename: BAPACK.ACC

Remember when your ST was new and a 720K disk seemed to be bigger than you would ever need? The longer you own your machine however, the faster your disks seem to fill up.
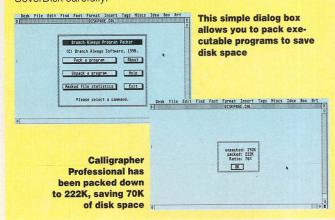
Crunching programs and data files into single ARChive file may save a lot of disk space, but it means you can't use the program without de-archiving the files first. If you want to do that, you still need a disk with enough free space to hold the files.

Now there is another solution to the problem. BAPack, from Branch Always Software – the same people who developed the Quick Utilities on last month's CoverDisk – reduces the size of program files without archiving them.

The packer works by compressing the program data and then adding a new piece of code at the beginning of the packed file. When you run the program, this new code decompacts the rest of the file.

BAPack won't work with every program, especially those which use some sort of copy protection. Never attempt to run BAPack on your original disk, only on a copy.

Because of the way packed programs are stored, the time it takes to load a packed program is longer than for the unpacked version. Remember to read the documentation file on the CoverDisk carefully.

This simple dialog box allows you to pack executable programs to save disk space

Calligrapher Professional has been packed down to 222K, saving 70K of disk space

USING USERDISK

Follow these instructions for absolutely, positively, definitely the last word in trouble-free CoverDisk use

RUNTIME INSTRUCTIONS

1. Insert the CoverDisk in drive A: of your machine. This is the internal drive on most STs, although some of the very old machines have an external drive.

2. Turn your ST off for about 10 seconds. This will clear any programs which may be in the memory. Turn your machine back on to boot up with the CoverDisk.

A Desktop with two disk drive icons and a single open window will appear. If you're using a colour monitor or TV, your ST will boot in medium resolution.

3. Move the mouse cursor over the RUNTIME.PRG icon and double click on it to start the program. Runtime will run in medium res on a colour monitor or high res on a mono monitor. Runtime will NOT run in low resolution.

4. When the Runtime program is up and running, you'll see the opening menu screen. From here you can access all the different sections of the magazine.

5. The main menu has four buttons. Click on each of these once – not a double click. The three top buttons will take you to other sections of the magazine, such as the programming articles or program documentation.

The button marked QUIT TO DESKTOP will exit the Runtime program and return to the normal ST Desktop.

6. Selecting any button will load the text file from the disk into the user-friendly text reading screen. Again, click on the button once, and wait for the file to load.

Selecting the button called MAIN MENU will take you back to the Runtime start-up screen.

7. When you've read the file, or printed it out, you can go back to the menu to select another file.

If you've read all you want to, go back to the main menu and select QUIT TO DESKTOP to exit Runtime and return to the ST Desktop to continue exploring the disk.

NOTES FOR HARD DRIVES

If you have a hard drive and boot up from the CoverDisk, your Desktop won't have any icons for your hard drive partitions. It's better if you boot the hard drive in the normal way, then put the CoverDisk in the floppy drive.

Once this is done, open a window on drive A: by double clicking on it. Use the window slider bars to find the RUNTIME icon then follow the instructions above for using the program.

It is possible to copy the entire Runtime program to the hard disk to speed up the time it takes for text to load. If you do this, remember to copy all of these three files: RUNTIME.PRG, DM.RSC and MENU.INF.

You must also copy the whole of the TEXT folder to the hard drive. This folder contains all the text files for Runtime – both the folder and the files it contains must be copied.

These three files and the TEXT folder must be copied to the same place, ideally the root directory of the C: drive. Runtime looks in the same directory for its RSC and INF files and the TEXT folder. If it can't find them, the program won't run.

THE FINAL WORD

We really do want to make the CoverDisk as simple to use as possible. We still want to pack as many programs onto the Disk as we can, which is why some programs occasionally have to be packed to save space.

These instructions should help to make using the Disk and reading Runtime quite straightforward. But if you still find you have any difficulty, or if you feel that some of the instructions should be expressed differently, or if you want something else to be included, please tell us.

This set of instructions will appear in every issue of 'USER from now on – to help people new to the magazine, and to the ST. So don't forget – if you have any suggestions, let us know.

RUNTIME 9

Programming from beginning to end, from those in the know. It's all here on the world's first dedicated electronic media magazine for ST...

3D GRAPHICS SERIES

Flight simulators pioneered the use of 3D graphics to create realistic landscapes easily and quickly. Sims like F-19 and ProFlight rely on filled polygon landscapes to make them fast and visually exciting.

This month in 'USER Andrew Tyler begins a series of articles on how to program 3D graphics on the ST. To go with these articles, Runtime will include example programs and machine code files to enable you to experiment with 3D graphics on your own.

The folder 3DGRAPH contains all the files which are needed to assemble the program 3D_01.PRG using the Devpac 1 Assembler which is included on the disk. These files have been written to work with both Devpac1 and Devpac2.

Anyone with another assembler should be able to get the program to compile with only minimal modifications. See the Runtime Magazine on the disk for a detailed list of all the source code files and how to use them.

GFA RESOURCE PROGRAMMING

GFA BASIC is a fast and powerful implementation of the BASIC programming language. Available in several versions, it continues to be one of the best selling languages available on the ST.

The ST has a friendly GEM interface to shield the user from the complexities of programs. Too many programs don't use GEM because people regard it as being too difficult to implement.

Programming GEM from GFA BASIC isn't hard, and our series makes it even easier. You'll find that it'll take very little extra effort using the GEM interface to give your program a professional look and feel.

Accessing GEM dialogs and alerts from GFA BASIC is easy. John Peters continues his series for more advanced GFA programmers by explaining how to to create radio buttons. Using what has been learnt so far, he creates a simple program using GEM to control a printer.

FIRST STEPS IN BASIC

Over the years, BASIC has proved to be an excellent language with which to learn to program with. There are many dialects and versions available for almost every computer. It's fast and flexible, and BASIC has gained a massive following among both professional and occasional users.

Well, all of this is fine if you're an experienced and confident user, but what happens if you're just starting out on your ST programming career?

Never fear, ST User is here with First Steps in BASIC. Peter Phillips will lead you gently through the various functions and facilities offered by this versatile language. Using PowerBASIC, from programming specialists HiSoft, Peter gently introduces the novice user to the world of programming.

In the second part of the tutorial, Peter continues the series by looking at the way BASIC deals with mathematical calculations and expressions. Why should a simple sum like 2+3*2 have two possible answers? With the aid an elderly relative, Peter will explain.

STOS TUTORIAL

The STOS programming language from Mandarin Software has proved to be very popular. Quick, easy to use and designed to create bright and colourful games, STOS has become a firm favourite with programmers.

This month Phil Lawson, our STOS expert, shows you how to create a realistic 3D maze. Using full screen scrolling and a maze over nine times the size of the screen, this is a truly stunning game.

Make your way through this world, picking up the gold pieces and avoiding the marauding baddies. Locked doors bar your way, so you've got to find the right key for each door which is not easy as you can only carry one key at a time.

Once you've explored the game, you can follow the article and complete any changes you want to make!

GETTING STARTED

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

The magazine appears on the disk as a program called MAGAZINE.PRG and 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 all the programs, articles, games and utilities on the CoverDisk. Click on a menu option and the article will be loaded and displayed on the screen. If your monitor isn't very clear you can print out the article and study it at your leisure.

At the foot of the screen you will find several icons. Here's what the main ones do when you click on the 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 is 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 to help illustrate a point. Click on this icon to see the picture.

Everyone, even learned programmers, needs help occasionally. If you find that some friendly advice is needed click the cross.

Play

X TEST

SPEEDBALL 2
BRUTAL DELUXE

GAME OF THE MONTH

PAGE 38

Plus

GAUNTLET 3

March will see the release of Gauntlet 3 from US Gold. Unlike its predecessors the game will be played in 3D. As usual you'll be given the choice of playing the part of either a wizard, warrior, elf or valkyrie.

Your goal is to rid the lands of evil demons who are rising from the depths of hell to cause as much trouble as possible.

Details from the company are still rather sketchy and we've no price yet, but we'll let you know more as soon as we find out.

(A) CAR-VUP

Soon to be released from Core Design is a cutesy little game known as Car-Vup.

You assume the role of Arnie, an unassuming Morris Minor lookalike. Your mission is to drive through eight meanie infested worlds, killing monsters.

The game's finale is a battle to the death against Captain Grim. Can you free your friends and save the world? Find out with Car-Vup. Due to arrive any day now, and priced at £24.99.

(B) THE ULTIMATE RIDE

Racing games are very popular at the moment. Mindscape have called upon the Grey Matter programming team in order to produce The Ultimate Ride.

Having chosen your bike you must compete for pole position, picking up wads of prize money en route.

Unlike many other racing games, The Ultimate Ride features a simultaneous two-player mode in which would-be bikers can compete head to head.
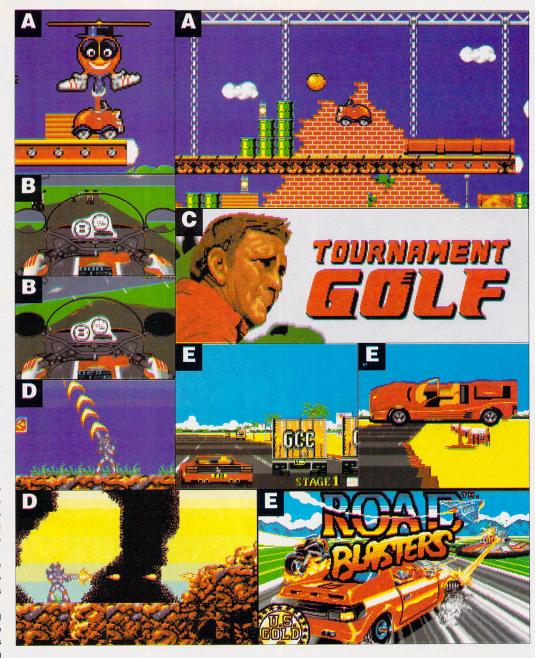
Featuring a number of circuits, The Ultimate Ride should be available soon and will cost you £24.99.

SUPER MONACO GP

US Gold is proud to announce the imminent release of Super Monaco GP, which has been converted from the Sega coin-op,.

Programmed by ZZKJ, the name behind Super Hang-On and Power Drift, the game sees you as a top racing driver vying for the lead position.

Race over four tracks in your bid for the top. Featuring superb

graphics and sound, Super Monaco GP will be available during March – don't miss it!

(C) TOURNAMENT GOLF

Fore! Elite is at last to release its conversion of Sega's Tournament Golf. The game can be played by up to five people over a varied number of courses.

Featuring all the usual golfing stuff – tees, slices, bunkers and birdies – the game will appeal to those out there who can't find the time to try the real thing.

Hopefully the game will be a real smash – maybe

even a hole in one! Keep an eye out for Tournament Golf. Course fees will set you back £19.99.

(D) TURRICAN II

Morgul's back and this time he's taking no prisoners. Yep, the three-headed monster from Rainbow Arts has returned and Turrican can't rest until he's finally beaten the beastie.

Turrican II will feature even more than its accomplished predecessor – more graphics, more sound, more gameplay and even speech!

Can you rid the moons of Morgul's minions? Only time will

tell. Watch out for Turrican II, it's due to appear really soon and will set you back £19.99.

MIGHTY BOMBJACK ELITE

He's lean, he's mean and he's keen – Bombjack is back, this time sporting the title Mighty Bombjack.

Platform fanatics are sure to relish the challenge that the mouse-like Bombjack offers. Can you collect the bombs and bonuses from around the globe while avoiding the aliens?

Released by Elite and programmed by the team

who were also responsible for World Championship, Mighty Bombjack is converted from the Jaleco coin-op. The game should be available soon and will carry a price tag of £19.99.

(E) KIXX BUDGET TITLES

The budget software scene is really heating up and games giant US Gold is about to release the first games on their Kixx label. All priced at £7.99, the first batch will include:

Outrun – US Gold's classic conversion of the award-winning Sega coin-op. Experience the thrills and spills of travelling at high speeds as you race along in your Ferarri Testarossa.

Road Blasters – In the not too distant future the world will be a place where the survival of the fittest will be the way of life for all. With a cannon mounted on the front of your car you must run the gauntlet in order to stay alive.

Thunderblade – Take to the skies in your attack chopper and attempt to blow the enemy out of the air. It's taken from the arcade smash, Thunderblade which gained number one position for arcade games all over the world.

Blasteroids – An extension of the original Blasteroids, this game sees you and a friend simultaneously battling it out against the evil Mukor.

World Class Leaderboard – The ultimate golf game for £7.99, it can't be true, but it is. This first class game is now available for all to enjoy.
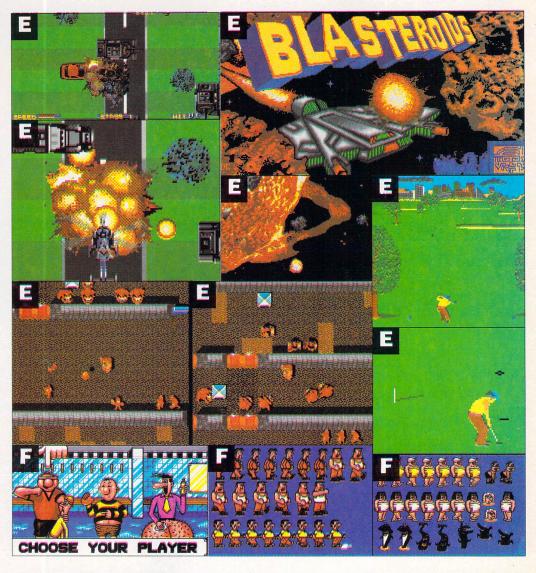
Gauntlet II – The arcade smash on your computer. Experience the magic of Gauntlet on you ST now!

The next batch of Kixx titles will include the likes of **Vigilante, Barbarian II, Axel's Magic Hammer, Moonwalker** and **Scramble Spirits.**

(F) VIZ

You'll either love or hate this game from Virgin Mastertronic. Fans of the Geordie comic will relish the chance to see all their favourite characters immortalized in pixels.

The game itself is a mishmash of different styles and will include the madcap antics of the likes of Biffa Bacon, Johnny Fartpants, Sid the Sexist, Roger Mellie, the Fat Slags, Postman Plod and the Pathetic Sharks.

Due really soon, Viz is set to take the games world by storm. No definite price details just yet, but we'll keep you posted.

SWITCHBLADE 2

It has been 200 long years since Hiro, the last of the fearsome Blade Knights, managed to defeat Havoc and save both his land and people from certain doom.

Rising from his resting place, Havoc has sworn revenge on Hiro's people. The only obstacle in his path is a distant relation of the late Blade Knight – you!

Switchblade from Gremlin features six massive levels, each one comprised of over 100 screens. Programmed by the same team responsible for Venus – The Fly Trap, Switchblade 2 looks set to follow the huge success of its predecessor. It's due for release in March for £24.99.

CYBERCON III

Cybercon III from US Gold was originally designed as a huge defence system, to keep control of the earth's lethal armoury.

Inside its protective cocoon however, Cybercon III's synthetic brain somehow mutated, driving the machine into madness.

Turning its immense firepower on the earth's population, the system set about destroying the world.

Decades later the survivors discovered Cybercon III buried deep in a mountain and a volunteer was dispatched to rid the world of the system.

It's designed by Ricardo Pinto, the man behind the highly acclaimed Carrier Command, and the game features state-of-the-art 3D graphics.

Cybercon III is due for release at the end of March. More details soon.

PANG

The software scene seems to be awash with cute games at the moment. Ocean have entered the frame with their conversion of the arcade game, Pang.

Armed initially, with a rather nifty harpoon, your task is to scurry about the screen shooting at bouncing balloons.

There are 17 countries to visit each one presenting a greater challenge than the last one. Along the way you'll be able to collect extra weapons and other useful objects. Pang should be available now, priced at £24.99.

CHOOSE YOUR PLAYER

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FIVE IN ONE MOUSE

You must attempt to restore your vital memory banks

Practise your shooting skills and improve your score

Make sure that you only arrest the scientists – don't shoot 'em!

ROBOCOP 2

OCEAN : £24.99

The city of Detroit is facing a dark time. Reported crimes have increased tenfold over the last five years. One in four citizens is drug dependent and gangland killings are commonplace.

The police department has decided to go on strike and a new menace looms deathly on the horizon.

Under the command of a ruthless drugs baron, Cain, a gang of psychopathic killers have created one of the most addictive substances known to man – Nuke.

Without the presence of the law the city's future looks bleak. Unless, that is, you can do something about it.

Alex Murphy was drafted into the Detroit Police Department from a small country force. During his first days in the city he ran into Cain and his hoods. Brutally mutilated by the killers, his body was taken to the Omnicron Consumer Products corp – OCP – for tests.

Months and several operations later, Murphy was back. This time in the guise of Robocop, law enforcer extraordinaire.

Your first assignment is to raid the River Rouge Industrial Complex. You are to collect Nuke, arrest scientists and apprehend a female for questioning. The action sees you leaping between platforms while taking pot-shots at Cain's henchmen.

Should you manage to flush the rats out of the complex you'll be awarded a points bonus and possibly an extra life.

Returning to the OCP lab, you discover Murphy's records. A sub-game follows in which you must recover data from a memory bank. The game is similar to the age-old Snake, and success over four levels will see you regaining your full identity.

Before moving onto the next assignment Robocop has the chance to practise his shooting skills. As targets pop up out of a derelict building you must open fire. Points are awarded for hitting criminals, but are deducted if you shoot innocent bystanders.

Entering the Tokogawa brewery you must again try to arrest Cain's gang and collect Nuke while you search for the top man. Naturally, Cain isn't going to go down without a fight.

Unbeknown to you, the villain's managed to get his hands on one of OCP's latest robots. If you're to arrest Cain you'll have to blast your way past his metallic bodyguard. It's certainly no picnic!

Kill almost anything that moves and ask questions later

Use the conveyor cranes to bridge the burning oil

GRAPHICS	79%
SOUND	76%
GAMEPLAY	77%
OVERALL	78%

Robocop 2 is a cracker. If you're into platform games then you'll love it. The action is varied enough to keep you coming back time and time again. Some people will doubtless complain that the action is perhaps a little too difficult, but any games player worth his – or her – salt will soon learn what's what. As film tie-ins go Robocop is certainly one of the best around. The graphics are well defined and the sound accompanies the action nicely. All in all, Robocop 2 is a first class game that'll keep you occupied for hours.
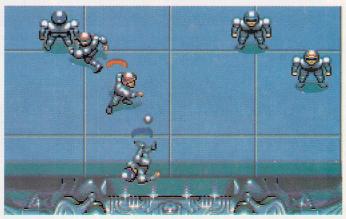
Your objectives are to round up any important looking characters, collect the Nuke and shoot everyone else

The game begins at the centre square. The steel ball is jettisoned onto the pitch and the two teams begin battle. Each half lasts for 90 frantic seconds, during which anything can happen

After a frantic goal-mouth scramble, the red team knock down the opposition's goalkeeper and place the ball firmly at the back of the goal. Despite the wild jeers and accusations of unfair play, the points stand

SPEEDBALL 2

IMAGEWORKS : £24.95

GOAL! The red team scores and all hell breaks loose. The TV camera closes in on the scorer as he performs his victory celebrations. The opposition meanwhile, have to sit and watch

Having completed a game you have the option to buy so-called Star-Players. These hardened professionals cost a small fortune, but their skills can transform your performance

Brutal Deluxe are well known for being the league's worst team. Looking at the division table you can see the team in their rightful position – at the bottom

In the year 2095 the sport of Speedball was driven underground. Both corruption and violence were rife within the game. Speedball as we had known it disappeared from the public eye and interest in the sport began to wane.

Unregulated and ungoverned the underground Speedball scene soon degenerated into a fiasco. Surely the game was on its last legs.

In a desperate attempt to regain public support, a Speedball council was set up in the year 2100. The board of directors decided it was time to make the game more enjoyable.

New rules were brought in to make the game more appealing.

Teams were renamed and the stadiums rebuilt. Soon the huge crowds were back – Speedball 2 was born!

Five years later the game had grown in stature so much that there were 16 teams contesting the converted Speedball 2 trophy. One of the new teams is Brutal Deluxe and you're its manager!

As the 2105 season begins your hopes are riding high. Can you fight your way to the top of the first division and win glory or are you destined for an early retirement?

The pitch has been changed dramatically: it's now 100 per cent larger! In addition to the usual goal mouths, there are now four ways in which to accumulate

points. Scoring goals earns your team 10 points. Hitting one of the two Bounce Domes (reinforced perspex domes which glow green when hit by the ball) earns a total of two points.

Illuminating one of the stars on the side of the pitch sees you gaining an extra two points; lighting all five gives an added bonus of 10 points. Taking out an opposing player also gives a score of 10 points.

In addition to the basic scoring system the game features a score multiplier. Every time you throw the ball into the multiplier the points you gain are increased.

If you've used the multiplier once you'll gain 50 per cent extra points and if you've used it twice

you'll be eligible for a 100 per cent points multiplier. Naturally, if the opposing side has control of the multiplier you can reduce its score by using it yourself.

Like the original game, Speedball 2 includes pick-ups. Should one of your players manage to collect a pick-up he will gain a special ability.

These range from freezing your opponents, reversing the joystick controls and giving your team members maximum attributes, to making your players immune to all tackles.

In addition to the pick-ups, players can also grab other goodies. Tokens will help you to pay for extra training sessions or for star players. Armour and

Against all odds Brutal Deluxe manages to win a game. Now it's time for some victory celebrations

You can greatly enhance your score by throwing the ball in the score multiplier

Having been beaten up once too often, your centre forward is brought down for good

Lighting the stars on the side of the pitch will win points. Light them all and there'll be a bonus

weaponry are used to increase individual player's attributes.
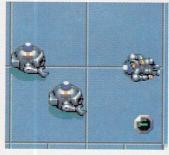
There are two play modes in Speedball 2. The first, like the original Speedball, sees you controlling the team. The second puts you in a managerial role – you train and coach the players, but the computer controls them during the actual match time.

There are three competition modes: a knockout tournament, the league and the cup. A special practice mode enables perfection of special moves and tactics.
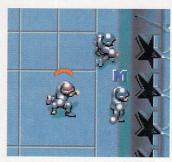
As you become proficient at the game you'll begin beating teams. Your team, however won't find their way to the top easily. As well as skill you'll need cash – a lot of it. Using the tokens you can increase your players' attributes.

In addition you can peruse the transfer tables. Here there may be an experienced pro who's looking for a new team. If you've got the money, sign him up – he'll increase the team's strength.

At the end of the day it's goals that count. Only the elite make their way to the top, but in the cup games it's anyone's bet. So pad up and head for the tunnel, Speedball 2 is here.

Above: Have a peek at the fixture list. Spot how adept your opponent is and adjust your skills accordingly in order to stand a chance of winning

Bottom right: Players injured during the game are only replaced by a sub

GRAPHICS		87%
SOUND		82%
GAMEPLAY		89%
OVERALL		88%

The Bitmap Brothers' games are synonymous with excellence. We've all marvelled at the likes of Xenon, Speedball, Xenon II and Cadaver. Now Speedball 2 has taken pride of place among the Brothers' games. Often copied but never bettered, Speedball 2 has to be the finest future sport game available. The graphics are excellent and make for a real show-piece. The sound too, is nothing short of brilliant, the up-tempo rhythm providing the perfect atmosphere. Combine the first class presentation with outstanding gameplay and you've got it. If you liked Speedball you'll love Speedball 2

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With your kingdom all but demolished you decide to set about conquering the world

As you progress through the lands you'll discover that they become progressively more difficult. You may invade the first few areas with ease. Beware, you should practise on these levels...

POWERMONGER

ELECTRONIC ARTS : £29.99

From the moment Bullfrog announced its intention to release Powermonger, everyone thought that the game would be an extension of its best-selling hit, Populous.

After all, the games both feature the same style of graphics and have been programmed by the same team. It transpires however, that Powermonger is anything but a sequel, and any knowledge of Populous will count for little with Powermonger.

Through no fault of your own, Miermer, your old kingdom has been the location of devastating volcanic activity. Torched by fierce flames and levelled by molten ash, Miermer has been

made virtually inhabitable and so your loyal subjects decide to take to the seas in search of new lands to colonise.

It just so happens that the armada of boats sights land after a couple of weeks. The island you find is one of a group of 195 and, with an ever expanding population, you decide to rally your troops in a bid to conquer the other territories for yourself.

All of the other lands are under the rule of kings, emperors and dictators, all similar to yourself. In order to claim a territory you must have at least two-thirds of the population under your control.

There are a number of different ways to achieve this state of

affairs. The obvious way to gain supremacy is to be victorious in battle. Alternatively, you may use sneakier tactics in order to form an alliance with your enemy.

Your troops will stick with you as long as morale is riding high – lose a couple of skirmishes and deserters could be plentiful.

Don't forget that an army marches on its stomach. If you run out of rations, you'll also run out of soldiers, so it's wise not to recruit every living soul into your army. Leave some to fish and farm, thus providing you with a constant source of food.

Initially you have only one captain. Look after him, if he's killed in combat your dream will be

over. Captains have three levels of aggression: passive, neutral and aggressive. Your captain responds according to which level you choose.

For instance, when set at full

GRAPHICS	**87%**
SOUND	**88%**
GAMEPLAY	**88%**
OVERALL	**89%**

Here we see a typical county village. The town's folk go about their daily business without a care in the world, oblivious to the menace about to descend upon their sleepy setting and change their lives forever

Without so much as a warning your forces invade the village. You're not out for blood, only food and recruits. The villagers' sheep are a prime target. If you kill them, your men will eat well for the next few days

With the onset of winter, commanders begin to create weapons and enlarge their armies

Food is scarce and raids are essential if the forthcoming campaigns are to be successful

Attacking from lofty positions will provide your troops with an extra advantage

Powermonger is a huge game that will keep players busy for hours on end. Initially the game is rather confusing. However, after experimenting with the easier lands, players should begin to understand some of the game's intricacies. The graphics are first-rate, everything being incredibly detailed. The sound, too, is astonishing – the spot effects add greatly to the game's atmosphere. Powermonger doesn't have the same instant appeal of Populous, but the game does seem to offer more of a challenge. Powermonger sets a standard of excellence that will be hard to follow.

aggression your captain trades, recruits and fights at maximum capacity. This isn't always a good thing and a fine balance must be maintained in order to succeed.

While gathering your soldiers you should make sure there are enough provisions to feed them. It's also wise, especially when attacking a large town or city, to spend time inventing items which could prove to be indispensable in the imminent battle.

These range from passive ploughs to menacing catapults and cannons. Equip your men with any available items and set off to battle. As you give the order to attack, your troops clash in deadly combat. Unfortunate soldiers float skyward in the form of angels while the victors give a loud exulting cry.

Captured communities come under your control, as do enemy captains who've been defeated. As you begin to intrude deeper into enemy territories, the opposition becomes tougher.

Outright aggression is not always the best policy to follow and would-be Powermongers will find that making alliances is sometimes preferable to battling.

Spying enables one of your captains to infiltrate the enemy's' ranks. With a mole established, you should be able to glean invaluable information about your enemy's strengths and movements. Using your new-found knowledge you should be able to plan your own tactics carefully.

Like Populous, Powermonger may be played simultaneously by more than one person. Two players may compete via the RS232 interface; the computer controlling four warriors. This option is played over a random map and is ideal for practising.
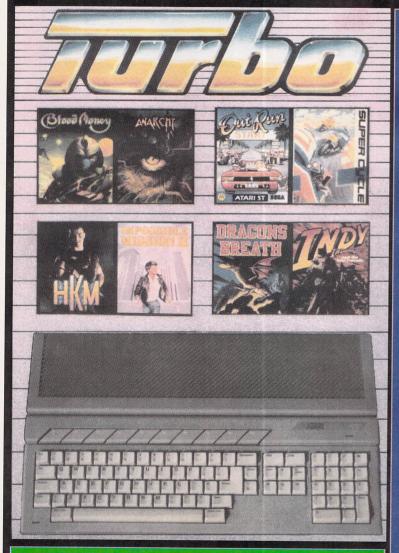

'Live by the sword, die by the sword' is your troops motto. You'll often face foes far more powerful than yourself. The best advice would be for you to recruit a vast army and equip them properly. If you encounter the enemy's prime force you'd do well to set your aggression rate to maximun and watch the angels float to heaven. Forging swords is also recommended, although you'll have to dig a mine first!

Bonus pieces are awarded after you successfully place a set number of shapes. If you slot the piece into place you'll be allowed to advance a level

As you progress through the levels you'll find that the pieces drop more quickly, the scoring rate increases and the picture on the right changes

WELLTRIS

INFOGRAMES : £24.99

Alexey Pajitnov is a famous member of the Soviet Academy of Sciences. A brilliant mathematician, Pajitnov is the man behind the best-selling puzzle game, Tetris. Now the Russian games master presents the world with another of his fiendish and frustrating – but fun – challenges. Welltris is here!

The game is really an extension of Tetris. This time the blocks are dropped down a well-like tunnel instead of from the top of the screen. This gives the game a strange sense of 3D and makes for intriguing gameplay.

Before the game commences you're given the option to set the difficulty level. There are three basic settings from which to choose. Beginners will find the first level's shapes prove challenging enough.

Seasoned gamers however, will relish the challenge of playing with the hardest level's complex patterns. The speed at which the pieces appear can also be

changed – this ranges from a snail's pace to very rapid fire.

The concept of the game is very simple. Shapes appear randomly at the top of the well and slowly make their way to the bottom. Using a pre-defined set of keys you must position the piece so that it fits into the grid at the base of the well.

To achieve this goal, you may move the shapes around the well's perimeter, thus gaining the exact position you require.

In addition, you can rotate the shape through 90 degree turns. By combining these two simple manoeuvres it's possible to direct the pieces into exact positions.

The grid at the base of the well is eight by eight units square. In order to score points you must construct complete lines, either vertically or horizontally.
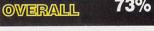
When a line is created your score is increased and the completed line is removed. As a result, the remaining squares close up their ranks immediately.

There are times when you're unable to position a block. When this happens you have two options. By dropping a shape down a corner of the well you'll be able to split the shape in two.

If this method fails you have no option but to leave a piece overlapping on one of the walls of the well. Should this occur, you'll be unable to use the offending wall for a set number of moves.

The game continues in a similar fashion until you block all four surrounding walls, thus making it impossible for you to continue.

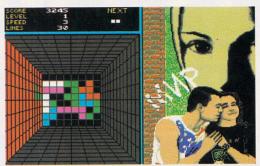| GRAPHICS | 64% |
SOUND	61%
GAMEPLAY	78%
OVERALL	73%

Each level sports a scene of everyday Russian life. Some are more obvious than others

Later levels see the inclusion of more complex shapes. If you can't place them, you'll block the walls

Lines become harder to form and it'll take a keen eye and nimble fingers to reach the highest levels

Before the game begins you're given the option to set it at the level of difficulty which suits you

If you run out of steam your final score is assessed. High scorers have their names recorded

Dirk the Daring's a handsome chap. With a twinkle in his eye he sets off in search of his beloved

With a mother-in-law like this it's easy to understand how the princess fell out with Dirk

Snakes alive! Dirk the Daring finds himself in yet another difficult and compromising situation

DRAGON'S LAIR II: TIME WARP

READYSOFT : £44.95

Don Bluth is the name behind countless classic feature length cartoons. Starting his career with Walt Disney studios, Bluth has worked on films such as Oliver and Company, the Secret of NIMH and The Rescuers.

The early 1980s saw Bluth move from Disney to set up his own company – Sullivan Bluth Interactive Media.

Whilst continuing to work on feature films, Bluth turned his hand to video games. At that time Taito's Space Invaders and Atari's Asteroids were state-of-the-art coin-ops. When Dragon's Lair was unleashed onto the unsuspecting public however, no one could quite believe it.

Dragon's Lair was the first game to call upon the latest laser disc technology and because of the split-second speed of the system, the games were basically interactive cartoons.

Now, in the 1990s, we can experience Don Bluth's master-pieces on our humble home computers. Amazing!

You must assume the role of Dirk the Daring, a valiant knight. Having rescued your true love, the Princess Daphne, from Singe the dragon you settle down to a life of domestic bliss.

Unfortunately, an evil wizard by the name of Mordoc has also taken a shine to your beloved. In a puff of smoke he has whisked the beauty off to a wrinkle somewhere in time. Naturally, you're not too impressed by this state of affairs and decide to win back your bride. With the aid of an ageing time machine, you must travel through time in search of the dreaded dimension.

You'll have to hurry – Mordoc only has to place the ring of death upon Daphne's finger and she'll be lost forever in the warp.

Time Warp is spread across six disks! The game features 46 scenes, each of which is superbly animated. Progress is made on a trial and error basis.

GRAPHICS	93%
SOUND	83%
GAMEPLAY	41%
OVERALL	63%

Each scene requires certain timed joystick movements. Therefore, performing the right moves will see you progressing though the levels.

Thankfully, the programmers have seen fit to include a save game facility. This allows players to master the earlier levels without having to repeat them.

The unfortunate side to the game is the lack of gameplay. Even novices should be able to complete the game quite quickly and the save game feature only speeds up this process.

The brave knight faces the perils of a giant serpent. In order to use the time machine he must defeat it

Using stealth and cunning, Dirk renders the slippery customer harmless

During your travels you'll come up against all manner of opponents. Vizier's guards prove worthy opponents but living skeletons are more than a fair match

Faced by a guard you quickly draw your sword. There are two ways of defeating the soldier: attack him with your sword or force him over the edge

PRINCE OF PERSIA

DOMARK/BRODERBUND : £24.99

The name Jordan Mechner may not be familiar, but he is no newcomer to the world of computer games. His first game, the highly acclaimed Karateka, sold over 400,000 copies worldwide!

Prince of Persia follows the same style of gameplay as Jordan's first masterpiece and looks set to be just as popular.

The Sultan of Persia has taken a few months leave from his official duties while he searches for new lands to conquer. In his absence he has left the day-to-day running of his kingdom to his daughter, a beautiful princess.

But unbeknown to the Sultan one of his seemingly loyal and faithful subjects, the Grand Vizier Jaffer, has decided to seize power for himself.

Enticing the princess to his tower, Vizier delivers an ultimatum – marry him or die. The princess doesn't really fancy either option

but whichever one she chooses, she must decide soon – Vizier has given her exactly one hour to make up her mind.

Death is hardly a way out, but a sorrowful life with Vizier isn't much better. If only her prince charming could rescue her!

Unfortunately, the young lad who had declared his undying love for the girl has since been incarcerated in Vizier's dungeon.

Stripped of all his possessions, can the youth find a sword and make his way to the top of the tower in less than an hour?
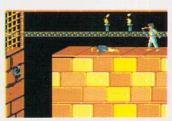
The game is split into three distinct sections: the dungeons, the palace and the tower. Starting in the depths of the dungeon you must gradually work your way to the tower and rescue the unfortunate princess.

Your mission is by no means going to be easy. Having escaped from your cell, the first thing you need to do is find your

sabre. Once the sabre is yours, you must face Vizier's guards in a desperate fight to the death.

You'll discover your route is littered with an assortment of fiendish contraptions all designed to slow your progress: razor-sharp spikes rise from the ground, ready to impale their next unsuspecting victim; loose slabs crumble underfoot sending the unwary victim to a crushing death; and steel-toothed gates open and close like a huge monstrous mouth, waiting to devour their next meal.

Of course, the idea is to avoid the traps at all costs. Contact with any of them loses you valuable time and sends you back to the start of the current level.

In addition to the traps, you also come into contact with the guards. When meeting one of these burly fellows you automatically draw your sabre and a fight ensues. The henchmen found in

Having ended a guard's life you re-sheath your weapon. Now to find out how to open that game...

Behind that menacing gate of steel teeth lies a valuable potion. Timing is of the essence

Having consumed the potion you must make your way back past those deadly teeth

GRAPHICS	**79%**
SOUND	**69%**
GAMEPLAY	**81%**
OVERALL	**82%**

the dungeon are relatively easy to beat. But as you progress to the later levels the guards become more worthy opponents. Only when you have defeated each of them will you be able to pass.

You're likely to receive some wounds. A life-force indicator is located at the bottom of the screen and each time you receive an injury a portion is depleted.

Only by collecting various potions can you revitalize yourself. There are various potions to be had but beware each one has a different effect.

Some do indeed cure you of some of your wounds, but others contain life-sapping poison, while others again may even increase your vitality. Potions are often tucked away out of sight so be really observant.
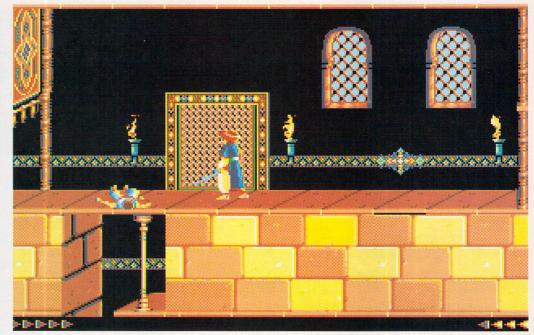
Completing the game takes quite some time and a novice player would soon lose interest if it weren't for the save-game option. As if that isn't enough, players may practice on any of the first four levels.

Your mission is to save the Sultan's daughter from a fate worse than death. Having worked your way through the palace's corridors you eventually find the door to the next level only to meet a burly, unfriendly guard. If you're to save the princess you'll have to learn how to wield your sword with deadly precision. Otherwise both of you face certain death at the hands of the ruthless and nasty Vizier. With only 60 minutes to make your way to the top of the tower, you'll have to get everything just right. Keep moving...

Having performed a death-defying leap you hold on for dear life. One false move and you're history

The first task to be undertaken is to recover your trusty sword. Only then will you be able to continue

Deadly traps lie in wait for the unwary adventurer. Tread carefully my friend and think ahead

Potions can have different effects. This one is safe – drink it in order to regain lost strength

Watch out for Vizier's men. Make sure you don't turn your back on them – one thrust could be fatal

Hard times are upon us all and money's really tight. What's needed is a part-time job. The best place to look is in the local newspaper as there are always plenty of jobs in the classified section.

Those wacky wizards at Industrial Might and Logic, the world's leading toy company, need someone to work the night shift. Successful applicants receive generous rewards and what's more, no references are needed.

Two days later, and after a brief five minute interview you are given a short tour of the factory. The set-up is in fact, a huge machine called Bingham's Environmentally Active Solution for Toys – that's BEAST for short.

The factory owner, Glenn Bingham created the giant structure from all manner of household waste products.

Beginning your shift at 9.00 pm, first make your way to the foreman's office. The cigar smoking boss will give you your quota for the night. To start with this is a small number of items – the first shift's target comprises five Storm Trooper Toddlers.

In addition to your quota information, you'll also be given a shift code which will allow you to enter that particular level at the beginning of the game.
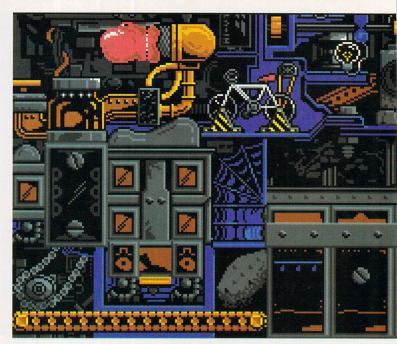
When you enter the factory your first task will be to charge up the generator. To do this you have to jump on the bicycle and pedal like crazy. Two light bulbs flash as the generator charges.

Once the bulbs are flashing wildly you should ignite the furnace. To do this you'll have to delve deep inside your tool-box to find a match in order to light the burners.

Having charged the battery and lit the burners make your way to the top of the BEAST. Take a quick glance at the conveyor belts, making sure that they're all running in the right direction. If they're not, flicking a switch will rectify the problem.
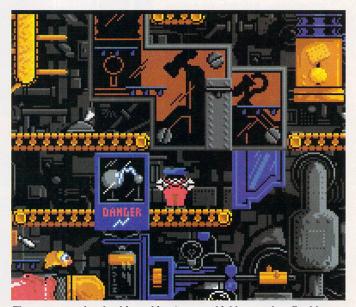
Situated on the top of the BEAST is the Solidifier Supplier production unit – a specialised piece of equipment adapted from an old university chemistry lab.

After kicking the plug into the socket you should light the Bunsen burner and set it to the correct heat setting. Once you've

NIGHT

LUCASFILM GAMES : £24.99

The processes involved in making toys are highly complex. Fred learns how to use each component as he progresses. Later levels see the introduction of the lemmings and, of course, your problems

After six shifts at the factory Fred leaves work and heads home for some well-earned rest

The recycled TV set acts as a quality control unit and checks for incorrectly moulded or coloured units. Care should be taken when creating toys as time is short and work quotas run high

Left: The BEAST is a sophisticated piece of equipment. Fred Fixit has to check all working parts regularly

SHIFT

Having mixed up the paints, Fred checks that the moulds are in the correct position

Lemmings prove to be a constant nuisance and Fred is frequently making repairs

completed the process the unit produces a liquid solidifying solution which runs into the Resin Maker.

You have to keep an eye on the unit just in case the liquid boils over. If this occurs, the gas must be re-adjusted before production can continue.

The plastic made by the Resin Maker will fall into the moulds. The newly formed pieces of plas-

tic will then find their way to the Paint Shop.

In earlier levels you won't have to operate the unit. In later stages however, you'll not only have to paint the pieces, you'll also have to dye the paint and flush out the system!

The painted units then travel along an assortment of conveyor belts until they enter the Bonding Unit. Once inside, the machine

joins the two portions of plastic together.

This often has catastrophic effects as the second piece to enter the Bonding Unit will be joined on top of the first. It's not uncommon to find dolls with two heads, four legs or with their legs on their heads!

Once bonded the dolls will travel down to quality control. Dolls made of pieces of all one

colour with heads on top of bodies will be sent for packing. Rejects are put to one side for the foreman to see.

When the shift is over, the candle at the bottom of the screen will burn out. Bonuses are awarded for complete dolls and deductions made for any rejects. If you made your quota you'll be given a fresh order and a new shift code. If you fail, you're fired!

Fred checks the Resin Maker. So far everything seems to be intact...

GRAPHICS	88%
SOUND	84%
GAMEPLAY	87%
OVERALL	89%

BASIC DEV SCAPE - ANTI GRAV

When activated the Anti Grav allows you to walk on the ceiling. This item is useful when you are faced with flying monsters. Some areas are only accessible when using this Dev Scape.

DEV SCAPE II - SHIELD

This item provides minimal protection from alien attacks. While not making you invulnerable to the enemy, the Shield reduces the amount of damage you'll receive from vicious onslaughts.

DEV SCAPE III - FIRE SHIELD

Your robots are not immune to fire. On the later levels you'll encounter aliens with flame throwers. With the Fire Shield activated you'll receive far fewer damage points than usual.

DEV SCAPE IV - GREASER

The Greaser activates a small duct on your feet to secrete an oily substance. The Greaser acts like the speed boots found in Dungeon Master. Beware when you use it, you may travel too quickly.

PLANETS AND DOORS

In order to gain entry to the bases you'll have to open the circular bulkhead door. This can prove to be a little frustrating because even the Dice don't help.

To help you save time here are the codes for the planets. Simply press the buttons in the correct order and access will be yours.

Use these numbers in conjunction with the door codes to gain access to any base!

ARMING YOURSELF

As you progress through the planets you'll discover shops selling various weapons. In order to use them you'll need to have attained a high enough skill level. In addition you'll also need to know which ammunition to use in which firearm.

weapon	ammunition
PISTOL	20MM CLIPS
COLT	45MM CLIPS
MAGNUM	50MM CLIPS
RIFLE	45MM CLIPS
SHOTGUN	CARTRIDGES
HUNTER	50MM CLIPS
UZIE	20MM AUTO CLIPS
RAPIDO	45MM AUTO CLIPS
BOOSTER	50MM AUTO CLIPS
CANNONS	SHELLS
MISSILE LAUNCHER	MISSILES
AEROSOL	POISON GAS CANNISTER
ACID DISPENSER	ACID GAS CANISTER
FLAME THROWER	FLAME GAS
HAND LASER	LASER PACK
LYTE ZAPPER	LASER PACK
ION PULSE	SONIC PACK

POINTS TO REMEMBER WHEN IN COMBAT

● Remember to keep moving. Launch an attack then move away from your quarry. It's usually best to encounter the enemy in large open spaces.

● Make sure you're familiar with your surroundings. Have an emergency escape route planned in case there are difficulties.

● Some walls have push-out sections. Attack through these for total protection.

● Many enemies, tanks in particular, have rebounding shots. Wait for them to fire, side-step and let them succumb to their own fire-power.

● Use doors to crush monsters and, if you can time it correctly, try climbing down ladders onto creature's heads.

Guns can be used by members at the rear

DEV SCAPE V - POWER SAPPER

There seems no use for the Power Sapper. When used, it saps your power until you're left immobile. Be warned, it works extremely quickly, sapping all your energy in around two seconds!

DEV SCAPE VI - FIXER
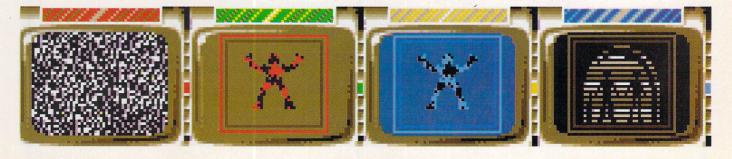
Although it does require a lot of energy, the Fixer repairs body parts. When used correctly you may never have to pay for repairs again. Therefore the Fixer is a very worthwhile investment.

DEV SCAPE VII - RECHARGER

Some bases have very few plug sockets. When you use a Recharger however, your power will automatically increase. When used with a Fixer, the Recharger really comes in handy.

DEV SCAPE SUPER - DEFLECTOR

Many of the alien creatures found within the base fire projectiles at your robots. If you activate a Deflector their shots will rebound and hit your opponents, causing damage to them.

OPTIC ROMS

BASIC OPTIC - AG SCAN
You can do without this optic. When plugged into an expansion port it shows the amount of damage you've caused when you hit an enemy. Only switch it on when in combat as it drains your power.

OPTIC II - ROUTE FINDER
As soon as you have the chance, buy this item. When plugged in and turned on the Route Finder directs you back to the base's entrance. Simply follow the direction the arrow is pointing in.

OPTIC III - MAPPER
Another really useful item. As you travel around a base the Mapper will record areas you have visited. Using the red button on the right, it is possible to leave a marker to indicate a specific point.

OPTIC IV - RADAR
When activated this upgrade scans the immediate vicinity for any sign of enemy presence. Learn how to use this properly and you'll be able to avoid alien creatures with consummate ease.

PLANET	COORDINATES	DOOR CODE	PROBE PASSWORD	LASERDOOR CODE
BUTRE	008W,072N	1234	CHAESELUME	——
PELPHI	095E,061S	4213	RUPPESICBERY	——
MEESTRE	047E,064S	1324	EXSOMIDED	EGINHAM
			PHYDERLAPD	RUPPEKAL, SCOOOFAR
TRIEKOS	095W,106S	1324	RATSICPOCY	ELDERS
			ELSISYDON	YULTHAAPE, CHALTEDON
				POCINSBEE, VIGININK
SALSTEE	125W,053S	3421	SYTHALEBEE	PHYDERED, LAPCEPY
				EXSOSY
SEAVY	016W,066N	4123	YULESDEAPE	SYLEKAL, EPETON
			POCCEPLAPS	RUPSOHAM
SODPIA	048E,101S	3214	SCOSINSINK	ELSODON, VIPEAPE
				POCGINKAL, YULOOHAM
				RATSICS, EKTHARAR
				EKTHARAR, CHASBEE
QUOONEL	127E,050S	3412	LAPLELEBEE	QUELTES, SYINSINK
			QUESOSIFAR	MIDESDON, PHYSIY
				EXNEED, YULENEBERY
				LAPDERING
PHUPET	008W,074N	2341	VISICEXTON	MIDNISHAM, SYTHAFAR
			CHAENEDEAPE	RUPNETON
BUDOD	138W,106S	3421	RUPGINENEHAM	YULCEPTON, CHALEAPE
			EINSTHASY	RATINSINK, DEESDON
				ELSICBEE, POCPEFAR
				VISOKAL
STATION	103W,104N	——	EYPESOFAR	YULESY, POCCEPED

OPTIC V - MAGNA SCAN
You'll find that when your robots bump into fire their vision becomes blurred by static. When plugged in, activating a Magna Scan clears the interference, leaving you with clear vision.

OPTIC VI - BODY SCAN
This item is especially useful for quick damage updates. When a portion of your robot becomes damaged, the Scan highlights the specific area. Should you run low on power it flashes.
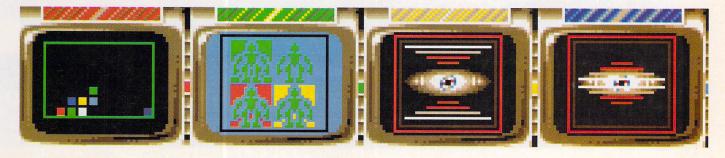
OPTIC VII - VISION CORRECTION
Some of the droids in your forces may suffer from short-sightedness, especially after heavy combat. Installing and running the Vision Correction optic will reset your eyes giving you 20/20 vision.

SUPER OPTIC - VISOR
On some of the later planets, certain areas may have no light sources. In such instances a visor gives your robots infrared vision. Without this item, further progress is simply not possible.

TIP OFF

ROBOCOP 2
House : OCEAN

Being Detroit's number one cop certainly isn't easy, especially when the rest of the department have decided to go out on strike. You'd love to have infinite power, wouldn't you?

Well, after loading the game, press F3 to access the high score table. Type in the phrase BAMBOOZULEM, press the HELP button and you should find yourself immune to those enemy bullets.

Be warned, you're not completely invincible and you'd better learn your route thoroughly.

LINE OF FIRE
House : US GOLD

Are you having trouble with this gung ho shoot-em-up? Well, infinite credits can now be yours. Once the game has loaded, press the HELP button.

The screen should change to show something along the lines of "Player One is into Death and Destruction". If however, you type in the phrase WHAT A BUMMER, the screen will change to show "Player One is into Love and Karma".

The cheat mode should now be activated, and infinite credits are yours for the taking.

TEENAGE MUTANT HERO TURTLES
House : IMAGEWORKS

They're lean, they're mean, they're green, the Teenage Mutant Hero Turtles are here! If you're experiencing trouble with this teaser then we've got the answer for you.

When asked for the security code, enter 8859. Next, enter 1506 before finally keying in the correct code.

If you perform this task correctly you'll be granted infinite energy with which to defeat the evil Shredder.

ATOMIC ROBOKID
House : ACTIVISION

Atomic Robokid is an excellent little shoot-em-up. But unfortunately, it's also pretty tough. If you're losing lives as if they were going out of fashion then try this handy little cheat.

When the title page appears type in the phrase "TUESDAY 14TH" – don't forget the space it is really important.

When you press fire you'll be presented with a menu screen from which you can select infinite weapons, invulnerability or infinite lives! What more could you ask for?

JAMES POND
House : MILLENNIUM

While playing this fishy game enter "MR2" and an angel should appear, granting you invulnerability. You should now find your task of saving the sanctuary of the sea easy as pie – good luck!

The name's Pond, James Pond. Bubble-O-Seven, licensed to kill. If you're experiencing difficulties with our underwater agent, simply type in this handy cheat and let the nasties have it

LOST PATROL
House : OCEAN

Here's a useful hint. Keep making your troops rest for 10 minutes. Every time they carry out the order they'll gain two strength points and two morale points without losing any food rations. Keep performing this handy cheat throughout the game and you won't have to worry about too many desertions.

Using our hint in Lost Patrol, you too can guide the party to the base

Deep inside enemy territory your men can become demoralised

STUCK AT A CRITICAL PART OF YOUR FAVOURITE GAME? TEARING YOUR HAIR OUT YET? HERE ARE SOME HINTS TO HELP YOU FINISH IT OFF ONCE AND FOR ALL.....

SECOND POST

Some games arrive a little too late to be reviewed in full. Just to keep you fully up to date, here are a handful of the best games which arrived after the deadline. Watch out for more comprehensive reviews of them in next month's 'USER.

TEAM SUZUKI – *GREMLIN*

Gremlin are set to unleash their third licensed product. Team Suzuki puts you in control of a 750cc racing bike. Featuring super-fast 3D graphics, the game manages to capture all the thrills and spills of Grand Prix racing.

Featuring all-round views and action replays, Team Suzuki looks poised to set the world alight.

PUZZNIC – *OCEAN*

Ocean have quietly slipped out this simple puzzle game. Puzznic was converted from a Taito coin-op and involves careful lateral thinking and split-second timing. Puzzle fans everywhere will relish the challenge offered by this first-rate game.

TURRICAN II – *RAINBOW ARTS*

The evil Mogul is up to his old tricks again and it's up to you to defeat him. Turrican II sees you once again donning your protective suit and heading out into the wild blue yonder.

Even with countless weapons at your disposal it's still not going to be easy. Featuring various styles of shoot-em-up gameplay, Turrican II looks good.

Team Suzuki   **Puzznic**   **Turrican II**

CONQUESTS OF CAMELOT AND COLONEL'S BEQUEST – *SIERRA*

Sierra fans are in for a real treat. It's been quite a while since the last 3D animated quests came our way and now two have arrived at the same time.

Colonel's Bequest is a 1920s whodunnit. Programmed by Roberta Williams – the name behind the King's Quest series – the Colonel's Bequest is set on an old tea plantation and sees a group of people all trying to gain access to the family inheritance.

As a friend of the family, you become entangled in the web of intrigue and murder. Can you survive the night and discover the identity of the killer?

Conquests of Camelot joins King Arthur in his quest for the Holy Grail. First you must rescue three of your most noble knights before unearthing the sacred cup itself. Only when you have found the ancient relic will you be able to save your ailing kingdom. Both games should appear any day – don't miss them!

The Colonel's Bequest – a thriller full of mystery and intrigue

USER RECOMMENDED

We can't tell you about every one of the great software titles about. In case you missed them when they were released, here are four favourites that are most definitely worth a look.

CAPTIVE – *MINDSCAPE*

Fans of Dungeon Master and Chaos Strikes Back will love this particular game. Programmed by Tony Crowther, Captive puts you in charge of four droids.

Your mission is to lead them in the search for a missing captive. Featuring superb graphics and riveting gameplay, Captive should take pride of place in anyone's software collection.

Take control of your four droids and it's off in search of the captive

JAMES POND – *MILLENNIUM*

The world's number one aquatic agent is here. James Pond, Bubble-O-Seven, licensed to thrill has been assigned to clean up the seven seas.

Featuring cutesy graphics and funky music, the game is a hybrid platform romp. Arcade fans will thoroughly enjoy the zany gameplay of this original product. James Pond should make a big splash in anyone's game collection!

James Pond secret agent – here to save the ocean from destruction

CHIP'S CHALLENGE – *US GOLD*

Taken from the Atari Lynx, Chip's Challenge is a game of skill and exploration. In order to win the heart of his sweetheart, Chip must negotiate the Bitbusters' puzzles.

Although the game looks rather bland, the fiendish puzzles make for gripping gameplay. Puzzle fans will find the action enthralling.

On first sight this game might seem a little dull, but don't give up...

SUPREMACY – *MELBOURNE HOUSE*

If you hanker for universal dominance then Supremacy is for you. A game of planet and resource management, Supremacy sees you attempting to increase the status of your race.

Unfortunately an alien presence doesn't appreciate your advances and as a result you'll find yourself at war. Supremacy will appeal to both tactician and novices alike – a winner!

You'll need all the skills you can muster in the fight for supremacy

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520STE POWER. consists of Standard Pack and the 20 top selling arcade games listed for the STFM Power Pack (or on the bottom left of this page) and a joystick	£389.00	£409.00	£459.00	£569.00
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The BASIC Story

From a twinkle in a programmer's eye to the finished package...John Butters follows the development of the famous HiSoft BASIC
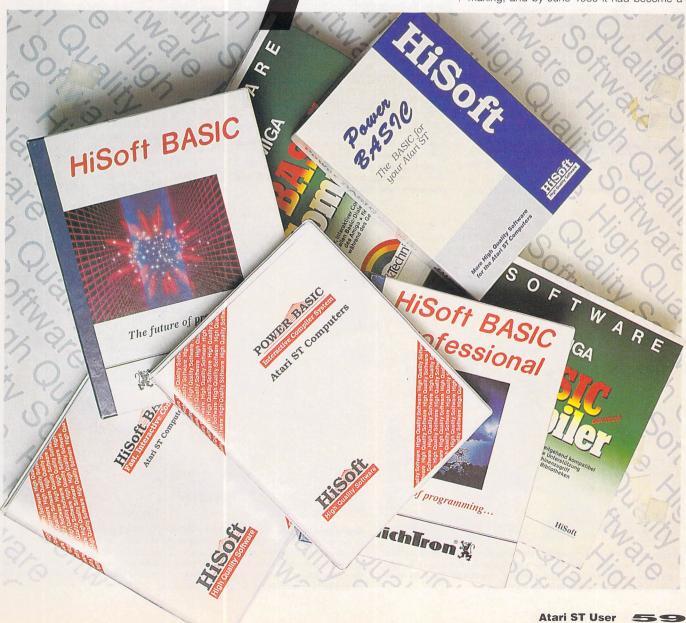
How many times have you bought a new software package, taken it home, hurriedly ripped away the shiny wrapping and bunged it into the computer without a second thought?

But have you ever wondered how it came to be? Who thought of the idea for the program? How long did it take to develop? Were there any problems? And once it was near completion, how was it handled in the marketing department of the software house?

BEGIN AT THE BEGINNING

Most packages follow the same path of development on their way to the computer store. A typical program is HiSoft's BASIC, which has become a household name for ST users since its introduction to the marketplace soon after the computer began to compete with the old 8-bit micros.

The end of 1979 saw the company in the making, and by June 1980 it had become a

registered company. Originally operating from various sites in the south of England, the now well-known software house moved to its present office in the heart of the Bedfordshire countryside during the summer of '83.

Nine people are employed at the Greenfield site – which was originally the village school – and the entire production of the firm's BASIC package took place at 'The Old School'.

WORKING IT OUT

At the end of 1985, when work on the original Atari ST was coming to an end, David Link began to formulate the ideas which were to lead to BASIC.

His aim was to produce a programming application which would be within the price range of normal users, not just to the software giants who used the languages to churn out expensive packages.

Originally David Link, who is now company director of HiSoft, would have liked to produce an interpreter for the IBM PC. But realising that larger companies such as Microsoft already had a stranglehold on that market sector – with programs such as Quick BASIC – he decided to choose another computer.

The potential of the Atari ST soon became apparent. At the time, HiSoft was managed jointly by David Link and David Howorth, who was to leave later. Howorth agreed to produce a new programming tool for the ST but was more inclined to produce a compiler. So a compiler was developed instead.

A team of three programmers began work in April 1986. Director Dave Howorth was joined by Dave Nutkins and Andy Penell to write the program which was completed in June 1987, the same month which saw the package in computer stores across the nation. All programming work took place on early models of 520 and 1040STs with external disk drives and power supplies.

TESTING AND MANUAL
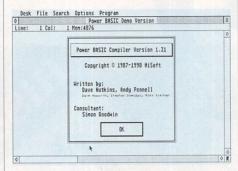
During development the program was tested constantly so that any bugs could be ironed out straight away. As it neared completion,

HiSoft finally settled down in Greenfield during 1983

versions were sent to professional programmers working outside the firm, known as freelance programmers, for further testing.

HiSoft finds that there is no problem which is common to its programs – final testing

Part of the BASIC package was taken from an older programming tool, Devpac. This is a common practice among developers producing similar software because it saves both programming time and cost
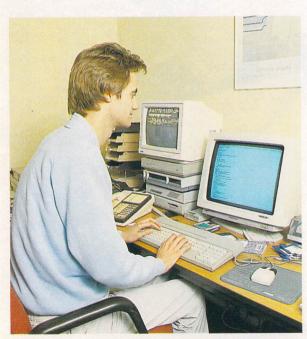
tends to uncover random bugs. The front end of BASIC was taken from one of HiSoft's sister packages, Devpac, which had already been tested to the full, making errors less likely to materialise.

Because of the way it was programmed, the compiler was testing itself throughout the development. Parts of the program which were not used, such as the GEM interface, were where any problems arose, but these were by no means lethal ones.

All bugs were quickly removed from this package. But HiSoft was lucky – other companies could find that things don't run as smoothly.

Anything wrong in the data structure of a program could lead to knock-on effects, and in the worst cases may demand a rewrite of the offending software. Without doubt, this nightmare scenario would delay a package's release by about six months, by which time a competitor might have slipped a similar application out of its door.

Nearly all professional software available

Dave Nutkins was among the three programmers responsible for one of the ST's best-known programming tools, and is the only member of the team still working with HiSoft. Here he is at work in his office on another HiSoft product

Apple Macintoshes are quite often employed in desktop publishing work. HiSoft is no exception and has an office set aside for work on the manuals, although all the programmers contribute to their contents. Once products hit the streets, customers who are experiencing problems can ring the Technical Help line for advice. Here, programmer Alex Kiernan is making adjustments to the documentation while helping a troubled user

CARRY ON BASIC

Practically all companies update their products, whether they be cars, washing machines or computer software, following feedback from existing users or problems noted by the firm after a release. During its four-year life, HiSoft's BASIC has undergone even more transformations than Doctor Who.

At the end of its life as BASIC it has been seen in 11 versions, a figure which doesn't include other cut-down versions which were marketed under slightly differing names. The time has now come for the return of BASIC as BASIC 2. Usually the differences between each version are very minor, but there have been changes which have meant that users have wanted to upgrade their software to the newer version of the program.

The company policy at HiSoft is that anybody who reports a bug in a piece of its software will receive an upgrade free of charge if a new version of that package is released. Others have to pay a small fee to cover HiSoft's costs.

Upgraded disks are copied by the firm's programmers during their normal working day. It's quite common for cut-down versions of large packages to appear a year or so after the original package was first released onto the market.

By taking out unnecessary features, companies can produce a low-cost piece of software which might appeal to those users who would not otherwise contemplate digging deep into their pockets for something they would rarely use.

Power BASIC was the result of chopping small sections from BASIC. Features such as the ability to make your own libraries were removed and the manual was shrunk to leave a package which went on sale for £40 – to compete alongside GFA BASIC and Power ST BASIC which had their prices reduced to a similar level

today, particularly anything technical, has its own manual to guide new users. Games apart, they are usually written by programmers as they progress, and are compiled when work on the programming is completed.

The leisure industry concentrates more on trying to fool trigger-happy youths into taking on daring missions to save the planet single-handed, and are printed on little more than an insert inside the disk box.

In the case of the HiSoft language, the manual took six weeks to put together. As is the case with the majority of professional publications, including *Atari ST User*, the developers put the ST to one side and worked on the manual. Apple Macintosh computers were used to run the now rather prehistoric Pagemaker 2 DTP package and an Apple LaserWriter printer.

Printing is often carried out many miles away and in this case the completed pages were sent by British Rail to a printer in Southampton, a distance of some 150 miles from the HiSoft offices.

In the early days of home computing, the software accompanying machines such as the ZX81 and Dragon often arrived on black cassettes with the name of the program handwritten on a label slapped on to the cassette case. Manuals were fairly simple – a dot matrix printout was not unusual – and the products were packaged and sold in nothing more luxurious than clear plastic bags.

Things have since improved for the customer, but in 1987 the transformation was still taking place. At an early stage, HiSoft's management decided that the documentation would be put inside an A5 ring binder to avoid the common problem of perfect-bound pages working their way loose.

KEEPING IN TOUCH

At an early stage in the programming work, the company had to ensure that ST users knew about their impending software release. David Link, who manages the marketing of the firm's packages, supplied relevant sections of the computer press with product details in the hope of some publicity.

Nearer to the launch date advertisements designed by David were placed in magazines. The first advertisement appeared in the May 1987 (on sale at the beginning of April 1987) issue of *ST World* magazine, the sister journal of *Atari ST User*. Originally taking up a
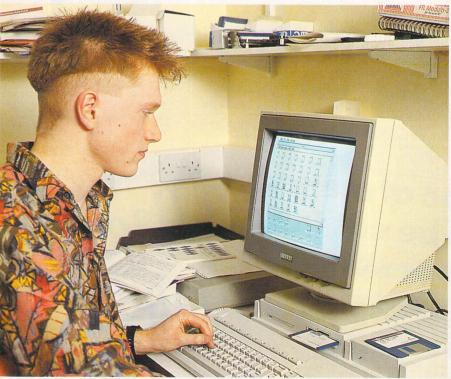
quarter of a page, it wasn't long before BASIC deserved and received full page ads.

Soon the finished product was available. Everything had worked out almost perfectly. The program and manual were completed simultaneously and the advertising was generating interest among users.

To gain a larger market, overseas distributors needed to be found. To spread BASIC around the world, HiSoft linked with firms in Germany, the USA and France, and for the German market the program was translated.

The story of BASIC is similar to that of most of the software, and indeed hardware, we take for granted each day. All over the world, that well-beaten track which leads from the programming idea to the computer store shelf is much the same.

But even having carefully followed that rocky path – success still depends on those dreaded 'market forces'. It's a jungle out there and only the strongest survive.

COMPETITIVE

In any industry, companies developing a new product must watch their competitors' moves very closely indeed. Any lengthy delay in the launch of software can be disastrous for the developers if another firm manages to sneak out a similar package first. Potential customers can opt for the first package and so the market is eaten away.

HiSoft, although BASIC was only a month behind schedule, suffered from such difficulties. GFA BASIC and Fast ST BASIC were on sale just before the HiSoft program and the firm was anxious that they may have already taken hold of the market.

Fortunately, this time the worries were unfounded and the package is enjoying a long and successful life.

As new machines are added to the Atari range, programmers check that their products are compatible. BASIC was written long before work started on the Atari TT

Clarke spells it out

PUPILS will lose marks for spelling in all GCSE exams from summer, Education Secretary Kenneth Clarke ruled yesterday.

Sixteen-year-olds who make spelling mistakes in subjects such as history, biology, physics and geography, as well as English, could have up to five per cent of their marks deducted.

The move was prompted by criticism from employers and parents that many pupils left school unable to spell simple words.

But it has angered examination boards and teachers, who say it is unfair to penalise children for poor spelling in tests designed to examine other skills such as knowing about the Battle of Hastings

By Education ...

Guildford, ... to ...

Pupils will lose marks for bad exam spelling

Alison Brace, Education Correspondent

PUPILS will lose marks in all exams for spelling errors in a new crackdown on slipshod standards in schools.

And teachers have been told to go back to school themselves if they cannot spell.

Education Secretary Kenneth Clarke has ordered examiners to mark down papers by up to five per cent for bad spelling.

It could mean the difference between pass and fail for youngsters.

Ministers were shocked last year when GCSE examiners said bad spelling was ignored in all but English papers. A host of studies have since revealed a dramatic slump in pupils' ability to spell.

Among words most often misspelt are: missal-miscellaneous); ma-(materially); ensiatic enthusiastic); amitter (amateur) and imideate (immediate).

Yesterday Mr Clarke demanded immediate action, telling examiners that nothing could wait until next year.

He said: "Everyone in the world of education must take serious steps to improve standards.

"Spelling is essential to good communication. We must make certain it is properly tested in all subjects."

Pupils will not welcome the action.

... Association, head of ... Teachers, said staff who could not spell should go on special ...

Clarke to use parent power in classroom revolution

Barry Hugill
Education Correspondent

THE Government is preparing to launch a massive drive to involve parents in the classroom.

Kenneth Clarke, the Education Secretary, believes he has won the battle with his professional advisers and the examination boards over the importance of spelling. He is convinced that his announcement on Friday that spelling should be taken into account in the marking of GCSE papers will meet with widespread approval. Now he hopes to capitalise on this with a new 'parent power' campaign.

Millions of leaflets will next month be distributed to primary schools for pupils to take home. They will explain the national curriculum and tell parents that they have a crucial ...

Clarke has no power to force the examining boards to deduct marks for poor spelling, but is confident they will not defy him on this issue. For 30 years, the GCE — and now the GCSE — examining boards have refused to penalise poor spelling except in English exams.

But Ministers are worried that parents do not fully understand the extent of the shake-up taking place in schools. They admit that the technical language of the national curriculum and the regular tests soon to be introduced in schools is jargon-ridden and baffling to many parents and teachers.

Next month's leaflet to all primary school parents will be followed up in the summer with an explanatory pamphlet for the parents of seven year olds. Despite their belief in 'the basics', Ministers have ruled out legislation to bring teacher ...

Daily Express Opinion

Spelling it ...

IT is amazing that ... I oppose the idea ... docked ... for bad ... exams. Almost ... fact that examiners ... ing them already. But which is why Education ...

... complain that bad embarrassment, liaisa, independent, definite, occasion, develop ... nec...

witch (for which), heredetary (hereditary), spontaneous, simalar, indipendent.

... Jessicist, Mrs ...

HELP CHILDREN READ AT HOME, SAY MINISTERS ... **DS BATTLE GOES ON**

Parents taught a lesson

PARENTS must help reverse the decline in children's reading standards, education Ministers warned last night.

The lesson was spelled out as teachers prepared this year to carry out the first round of new reading tests for seven-year-olds.

By LIZ LIGHTFOOT
Education Correspondent

schools which ask parents to go through books with their children in the classroom.

"Teachers have found pupils improve when they read with their parents at home or school," he said.

... ago many schools ... up parents at ... is chan... s realise pe... nt part to ... also cond... ks' or 'en...

reading' systems — where children are taught not to sound out words but are expected to pick up reading by looking at story books. No school should use this 'odd' method alone, he said.

This newspaper investigated the method and found that in Croydon, South London, schools ... had thrown out their ... homes and refused to ... sound out and ...

read. Now expert Dr Joyce Morris has compiled a checklist.

She suggests they ask questions like:
● How do you ensure children make a successful start?
● What is your main approach?
● What importance do you attach to phonic methods (emphasis on sounds)?
● Are children taught how the 26 alphabet letters represent the 44 speech sounds?

Meanwhile, The Mail on Sunday was praised yesterday for ... tion to the slump ... dards.

sloppy spelling tolerated by exam boards in an article based on research by teacher Mrs Jenny Chew.

On Friday Kenneth Clarke announced the results of an inquiry and ordered examiners to deduct up to five per cent of marks in all subjects for poor spelling.

Last night Mrs Chew called the decision 'wonderful news and common sense'.

Following our article the then Education Secretary John MacGregor ordered exam boards to take more note of spelling when awarding marks.

5pc of marks to be cut for poor spelling

Stephen Bates
Education Editor

PUPILS will lose up to 5 per cent of their marks in GCSE examinations next summer if they spell incorrectly, according to guidelines put forward yesterday by Kenneth Clarke, the Education Secretary.

The minister rejected as inadequate proposals by the School Examinations and Assessment Council, the regulatory body, to tighten spelling standards. He said more must be done to ensure that spelling is taken into ...

quently to weaken candidates' ability to communicate their knowledge, or understanding. He added that computer spell-checkers should not be allowed in examination rooms. "I am concerned at the decline in the standard of spelling amongst young people and I am anxious that everyone in the world of education should take serious steps to improve those standards. We must make certain that spelling is properly tested at all levels and in all subjects."

Jack Straw, Labour's education spokesman, said the announcement was "a further advance ... mission of years of government ...

EDUCATION SECRETARY GETS TOUGH OVER FALLING SCHOOL STANDARDS

Bad spelling to cost pupils exam marks

BY IAN MACGREGOR Education Correspondent

CHILDREN must lose marks for bad spelling in all their GCSE exam subjects, the Government ruled yesterday.

Until now pupils have not ...

Even in English, some boards have not tested candidates specifically on spelling in GCSEs or the old O-levels.

Mr Clarke criticised Government advisers who said it would ...

There is likely to be hostility to Mr Clarke's plan from the boards when they meet later this month.

John Edmundson, secretary to the Joint Coun...

such as history, science or economics.

"Communication is achieved by more than the written word nowadays ...

All written documents, from simple notes – such as shopping lists – to the great tomes found in reference sections of city libraries can be produced with one of the most widely used computer applications: the word processor.

The features required on a word processor differ greatly according to use. Letters to a friend demand very few features, but to add a professional touch to a business letter a more complex package is likely to be called upon.

For this reason Compo Software is selling a word processor in two forms. Write ON – which was reviewed in the January 1990 the additional features found in this up-market word processor. Words which aren't in the dictionary file can be added by the user as and when they appear in a document.

There are two ways in which the spell checker can be operated. The traditional way is to trigger it manually from the drop-down menus, but like some of the more expensive packages of its kind, That's Write will carry out a spell check as words are typed in.

Another nice touch with the spell checker is the capitalisation check, which picks out words which should, or should not, begin with a capital letter. So if, for example, 'london' used, however, WYSIWYG ability is lost.

The printing methods used are much better than those in competitors' packages. Printer fonts are used for fast printing along with bit-map fonts from the ST, such as Signum or Script. Until now, word processors have made use of one or the other, and so this element of the word processor is very powerful and useful.

That's Write has a word and keystroke counter, various type styles and a reasonable collection of fonts. The indexing mode will be useful for professional writers, and special symbols, such as bullets – that's

WRITING POWER

James Nicholson takes a close look at That's Write – the re-released professional word processor with an amateur price tag

printing parlance for blobs – telephones and scissors are available to add the finishing touch to documents.
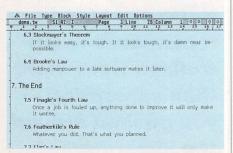
This word processor is especially attractive for TT owners. When the program is being loaded it checks to see whether it's being run on the new computer. If so, the software will take advantage of the new technology used in the machine, such as extra speed and memory.

If anyone has bought Write ON and found that it doesn't quite meet their needs they can upgrade to this version by paying the additional £50. Those using the old That's Write can also get hold of the most up-to-date disks for the same cost.

At £99 its nearest competitor is Protext Version 4, but the level of features in That's Write puts it on a par with the £150 version of the Arnor package. Unlike many business packages it doesn't have on-screen help, but otherwise it has all the essentials and is a reasonably pleasant package to use.

issue of 'USER – caters for those who need a low performance package, and sells for £50. That's Write is a higher specification version which has a lot more features. It's about to re-enter the market after undergoing a number of changes, and is aimed at the higher end of the market.

The program is supplied on two disks – one contains the program and printer drivers while the other holds a UK dictionary for the spell checker. Before use, the program has to be installed on to another disk but this proves to be a trouble-free operation.

The spell checker is the most dominant of was written in a letter the spell checker would automatically correct it to 'London'. This option can be turned off when not required.

Dictionaries for most European languages, and for American English can be bought separately – this should prove particularly useful for companies as Europe joins up for business in 1992.

Multi-column printing is a feature which is becoming more and more common in top-end word processors, including That's Write. It gives the ability to print several columns across a page, in much the same way as a magazine or newspaper. When this option is

Product: That's Write
Supplier: Compo Software
Telephone: 0480 891819
Price: £99
Configuration: All STs, colour and mono, TT
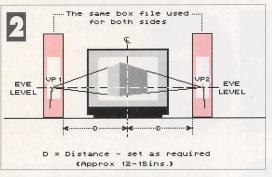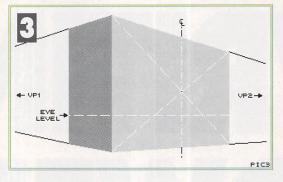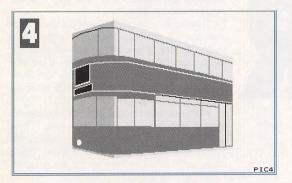
Looking very much like an Apple Macintosh word processor, the screen display is clear and easy on the eye

Select options using GEM-based drop-down menus or, once you've learned them, keyboard shortcuts

THE BOTTOM LINE

FEATURES: Spell checker and capitalisation, hyphenation, multi-column printing, footnotes, endnotes, indexing, stroke and word count, mail merge

EASE OF USE: Reasonable manual, Control-key combinations and GEM-based menus, up to two documents in memory at one time, WYSIWYG unless multi-column printing

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

TRAMOLOGY

by

Keith Markland

using DEGAS ELITE

PIC1

The same box file used for both sides

VP1 · VP2

EYE LEVEL · EYE LEVEL

D = Distance – set as required (Approx 12-15ins.)

VP1 · VP2

EYE LEVEL

PIC3

PIC4

PIC5

PIC6

PIC7

PIC8

Keith Markland remembers when trolleys were more than something you pushed around the supermarket...

Tramology is a series of step-by-step pictures illustrating how I composed a picture of a tramcar in a town-centre street during the roarin' Thirties. Being a lifelong tramway fanatic I relied wholly on memory and imagination.

The picture was produced on a 1040STFM using Degas Elite. Since I only started ST'ing last July no time records were broken – the picture took a few weeks to produce. But if I can do it, there's hope for other wrinklies too!

1 This scene is an introduction and illustrates one way in which I developed my picture beyond what was originally envisaged. It also gave the opportunity to use some of my imported GDOS fonts.

Drawing a tram side-on would be rather boring. So a three-quarter view was tackled with its problems of perspective, curves and such like. I also wanted to create a really interesting composition – something a side-on view wouldn't allow.

2 Here the problem of projecting angled lines to two vanishing points (VP) was solved – each of which was at least 12-15 inches to the right or left of the centre of the screen.

A piece of string was taped to a box-file. The string was drawn carefully through the covering tape to the left or right as required. It was stretched across the screen away from each VP in turn.

It was then easy to plot the desired angle of projection, using the cursor to follow its path in the appropriate line mode.

3 Once the basic proportions of the box-shaped tram had been established it was time to enter the finer detail. The 'box' dominates the picture frame and it was at this stage that the angles to both VP1 and VP2 were determined. These vanishing points in turn pinpointed the 'eye level' as shown in stage two.

Background detail was kept to a minimum, with the work being concentrated wholly on the tram. The angles and lines which had been determined would eventually govern the whole picture.
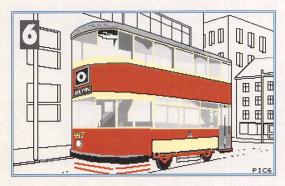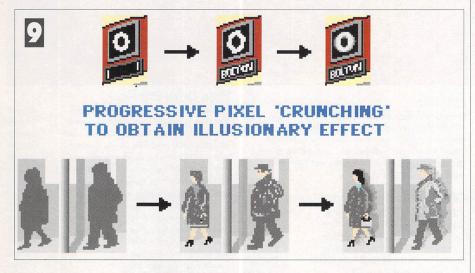
A vertical centre line was plotted through the right-hand side of the box so that it could be used as a guide for positioning the windows and wheels.

4 Here the tram fits snugly within the box and the windows and route indicators are in position. Work was also done on those foreshortened curves. There were no Beziers to fall back on, but despite that it was relatively easy to estimate the amount of curvature required.

5 Trial and error again played a big part in allocating shadow areas. I placed the light source behind and well above my head and based all subsequent light and shade effects accordingly.
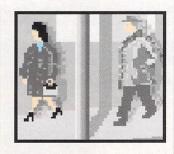
More importantly, the palette was amended via 'set color' to provide five shades of grey from RGB222 through RGB666. These greys were also used later to fill in the background.

The four-wheel truck was positioned on either side of the centre line – only basic detail

was necessary here. The wheels were drawn using the flexible circle tool – two ellipses, one slightly larger than the other to give a foreshortened effect.

The route letter and destination box proved more daunting. The name BOLTON relied heavily on optical illusion plus those five shades of grey!

It's amazing to see what a difference colour can make to a vehicle. Light and shade were exploited fully when it came to filling in the window areas. Again, I experimented until satisfied with the result.

6 This stage depicts the outline of the background buildings which are obscured by the tram. This saved time on designing and drawing buildings, and also helped give additional depth to the picture.

While composing the picture, I frequently switched images to other screens using 'block'; this enabled me to experiment much more effectively.

7 All colours were entered with maximum light and shade effects. The overhead wires were added at this stage but much of the tramline detail was left to the imagination – otherwise this would only have created problems.

8 There was plenty of pixel crunching at this stage to form the people both in silhouette on the tram and in more detail on the street.

By bashing the old pixels into crudely shaped bodies it was fairly easy to refine them into something more recognisable.

Mind you, special attention had to be paid to ensure the height of individuals was in proportion to their immediate surroundings. It would simply never do to have somebody half as tall as a trampole!

9-10 These pictures emphasise how the judicious use of pixels, when coupled with the varying shades of colour, can produce the desired effect despite the limitations imposed by Low Res output.

PROGRESSIVE PIXEL 'CRUNCHING' TO OBTAIN ILLUSIONARY EFFECT

ILLUSIONARY EFFECTS

'BLOCKED' & 'STRETCHED'

In this six-part series about real-time 3D graphics on the ST, you'll learn about all those aspects of graphics which are essential to creating a solid object on the screen and making it look real: fast polygon filling, windowing, hidden surface removal, lighting, colour and rotation.

You'll be able to create and manipulate objects on the screen, just like in a favourite flight simulator or game. But one essential feature of a simulator of any kind, whether it be about flying, road racing or whatever, is that it runs in real-time.

Real-time means that the image on the screen responds immediately and smoothly to input from the joystick or keyboard.

To do this convincingly for a complex scene is quite a tall order. Even commercial films usually draw and photograph each frame separately, so that motion is only seen when the film is played back.

It's quite amazing, and a testament to the power of the ST, that such impressive games and simulators using solid vector graphics have been written for it.

In this, the first in the series, you'll learn how to draw and fill polygons – they're the building blocks. Later, you'll be able to animate and control them, in three dimensions! Everything needed to do this will be either on the CoverDisk or on these pages.

QUICK DRAW

In order to produce real-time 3D graphics for a popular micro like the ST there is really only one option open – using so-called 'vector' graphics. But forget about the term vector for now – put simply, what this means is that objects on the screen are constructed from polygon meshes.

A polygon is a flat geometric shape with straight edges. An example of a four-sided polygon is a square. And a polygon mesh is

Andrew Tyler is a university lecturer and teaches a course in microcomputer and microprocessor programming. He has had an interest in computer graphics for several years.

a group of polygons joined at their edges.

If the mesh is joined up along all of its edges so that it's closed, it's called a polyhedron. A cube is an example of a six-sided polyhedron. Houses are constructed from six-sided polyhedra, called bricks. Polyhedra are used to build houses and graphics objects for roughly the same reasons: it's easy to construct building blocks with flat faces and straight edges.

In the case of computer graphics on an ST it's particularly important that an object can be drawn quickly from a minimum of information. When polygon meshes are used, all that's required is a list of the coordinates of the vertices, or corners.
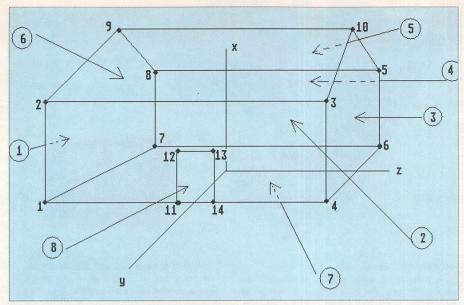
For now, don't worry about the details of how a 3D object is constructed. Just remember that the flat surfaces – the polygons –
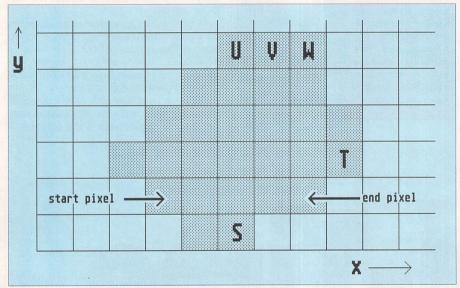
Real-Time 3D Graphics

Have you ever wished you could create solid 3D graphics like those you see in flight simulators? Andrew Tyler, in this series, shows you how...
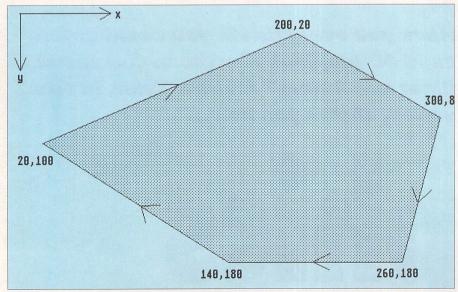
Surfaces (circled) and vertices (uncircled) of a polygon house. Bricks are examples of simple polygons. In basic computer graphics polygons are fitted together to form more complex shapes, like this house

A pixel polygon, magnified to show how lines are drawn using individual pixels. On a normal-sized screen the pixels merge to form a straight line

The numbers of the pentagon's vertices and edge connections. The pentagon is constructed from a series of straight lines joined together to form a simple polygon

which make up its sides are of paramount importance. So we need to be able to draw and fill in these polygons quickly.

ASSUMING ASSEMBLY

The first thing needed is assembly language. But stop! Before you decide it's too difficult – think again. It's not as unfriendly as it first appears. It's the fastest programming language and perfect for real-time graphics.

All the programs in this series are written in assembler code. To convert the assembler code into something the 68000 processor at the heart of the ST can understand requires a special program called an assembler.

There are several very good assemblers available, even some in the public domain. All of the programs in this series have been written using the very popular and powerful DevpacST assembler from HiSoft. On this month's CoverDisk you'll find Version 1 of this program, called GENST. It's a very friendly and helpful integrated package which should have you creating 3D graphics in no time.

Devpac Version 2 has the assembler and debugger – the bit that checks for errors – all within the single program. With Version 1 of Devpac you can learn the basics but Version 2 will take you even further.

FAST FURIOUS FILLING

The objects for animation are assembled from polygons glued together at the edges. Figure 1 shows a house constructed in this way, with the circled numbers referring to polygons and the uncircled numbers referring to the vertices, or corners.

Also shown on the diagram are the axes of the (x,y and z) coordinate system in which the house is defined. In this system, y is the horizontal axis, x is the vertical axis and z makes up the depth.

In the scheme we use, the house stands in an imaginary world inside the computer, called the world reference frame. What appears on the screen is the result of a series of calculations involving rotations, perspective and windowing – or chopping – of what is outside the screen.

Don't worry, all of these will be explained later, but for the moment let's concentrate on how to draw a solid polygon, which is the most basic graphic element.

JOINING THE DOTS

Suppose we want to draw and fill in a very small pentagon – a five-sided polygon. On-screen, with a magnifying glass, this might look like Figure 2.
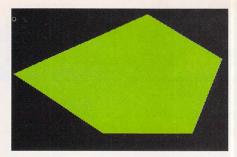
The sides of the pentagon aren't straight because the screen is really made up of a series of closely spaced dots, or pixels, which can only be either on or off.

Without going into detail as to how this screen RAM is laid out for the three resolutions of the ST, it's clear that the drawing of lines is really a 'join the dots' exercise.

There's no need to worry here about the details of how the screen RAM is mapped to the screen since the Line A routines in the ST Operating System are used to do the actual drawing – they're fast enough for what we want here and will take care of these details.

For drawing and filling a polygon, we need to calculate the coordinates of the pixels on the left and right boundaries, and then join the corresponding pairs with horizontal lines.

The start and end pixels shown in Figure 2 illustrate this for one particular line. The strate-

gy is simple enough. Calculating the coordinates of the boundary pixels however, isn't so easy. Fortunately this problem was solved by J E Bresenham in 1962 and has been the basis of many line drawing programs ever since.

BUFFING UP BRESENHAM

The modified Bresenham routine generates the coordinates of the start pixels on the left-hand side and the end coordinates on the right-hand side of a polygon to be filled in with horizontal lines.

Once again, with the emphasis on speed, we want to store the data in a way which makes it immediately accessible to the Line A routine which draws the horizontal lines. This store is called the x-buffer and has an address in RAM at xbuf.

In assembly language, addresses are usually denoted by such labels, and the assembler finally converts them to real addresses. The layout of xbuf is an example of how assembly language programming takes advantage of easy access to RAM to provide speedy access to data.

Xbuf is just a block of 400 long words – the 68000 can handle bits, bytes (8 bits), words (16 bits) and long words (32 bits). Each contains the start and end x-coordinates of a horizontal line.

This is big enough to cope with the 400 possible y-values (vertical positions) on the screen in high resolution, and therefore also medium and low resolution. Each long word refers to a particular y-value which is the position of that word from the start of the block.

ON THE RIGHT LINE

The ST comes armed with a host of fast built-in graphics routines. One of them in particular is very useful. It's the one which draws horizontal lines.

These routines are tailored to the hardware of the ST (and are therefore called device-dependent) and are accessible through a special feature of the 68000 processor called exception handling.
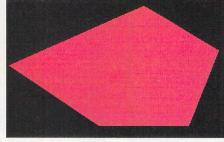
One 'exception' has been used by the designers of the ST to enable the user to do fast graphics. It's called the Line A Emulator. Without becoming bogged down in technicalities, it works in the following way.

Whenever the processor sees the word $A00n (the $ sign means that this is a hexadecimal number) it recognises an exception, takes control and executes the nth routine of the special graphics functions, all to be found in ROM.

The processor knows where the functions are located because it keeps the address in a special list called the exception vector table. Accessing special routines this way is an alternative to subroutines.

These routines use special variables tables to do their business, and to set these up the routine $A000 must be called before any others as part of initialization.

The horizontal line drawing routine is number four in the list. To use it, the start and end pixel coordinates must be passed to the tables together with other information, such as the colour which is required and what kind of line it is to be.

There's scope for variety here since the line can have a fill pattern – it can be dotted in many different ways. We've used a solid line but you could experiment. The block to play with is Fill, in the file data_00.s

IN GLORIOUS COLOUR

In low resolution on the ST, it's possible to use 16 colours simultaneously out of a possible 512. What these colours are is easily seen on the Control Panel by means of the red, green and blue sliders.

There are only 16 colours available at any given time because the hardware which is responsible for generating the colour can only read a nibble-sized (4 bits) piece of data. Each of these bits is said to refer to a different colour plane. So in low resolution the ST has four colour planes. In high resolution it has only one.

To change the 16 colours in the palette a special routine in the Operating System can be used. This uses a programmable exception, which in this case is called a TRAP.

Like the Line A routines, the TRAPs are numbered. TRAP #14 accesses that part of the OS called the XBIOS. Once called, the actual routine to be executed is specified by a number pushed onto the STACK. You can see how it's done in the listings.

TAKE A LOOK AT THESE

What has been shown here is how to draw and fill in a large polygon quickly and easily. This is an essential starting point for solid 3D graphics.

The polygon is, in fact, a pentagon and the coordinates of its vertices are listed in the data section at the end of the file 3D_01.S. It's shown in Figure 3.

To make it colourful, six colour palettes are cycled through in succession. The program is split up into several bits, called source files. The one that really matters is 3D_01.S.

This is the one which must be assembled by GENST. When this happens it pulls in all the other files by means of the INCLUDE directive. This is how you run the assembler.

From the Desktop, first load the assembler program GENST.PRG. Then load 3D_01.S from the File menu. Then pull down the Options menu and click on Assemble.

Give the binary file to be generated the file-name 3D_01.PRG and assemble it with no listing. Quit the assembler and run 3D_01.PRG from the Desktop as usual.

One final point. The picture on the screen will flicker. This is a consequence of using only one screen to draw on. It can be avoided by using a technique called 'screen buffering'. We'll talk about that next time together with how to 'window', or clip, a picture to fit into the monitor screen.

All of the programs associated with this series are included on the CoverDisk. See Runtime on the CoverDisk for a full explanation of what they are and how to use them.

IN THE BOOK

This article and programs are based on a forthcoming book, *Real Time 3D Graphics* by Andrew Tyler which is scheduled for publication soon by Sigma Press. Everything which is included here is discussed in far greater detail in the book, together with example programs and much more besides.

JARGON LIST

Assembler code – the assembly language's 'words'

Assembly language – the 'lowest' programming language

Bresenham's algorithm – a method of drawing lines very quickly

Exception – how the 68000 processor handles an 'unusual' situation

Exception vector table – addresses of routines that handle exceptions

Graphics primitives – fancy name for simple objects on the screen

Hexadecimal – computer number system. Lumps four bits together as a unit (nibble)

Line A emulator – how the 68000 calls Line A routines

Line A routines – fast drawing routines in the ST Operating System

Nibble – a group of 4 bits (binary digits) with a top value of 16. Two nibbles to a byte

Polygon – 2D object with straight sides

Polygon mesh – several polygons connected together at their edges
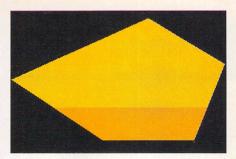
Solid vector graphics – 'solid' objects drawn from polygons

Real-time – running now, as you watch it

TRAP – programmable exception built into the 68000 processor

Vector – separation between two points, shown as an arrow

World reference frame – the 'world' inside the computer

X-buffer – x-coordinates for starting and ending horizontal lines

NEWS...NEWS....
NEWS...NEWS....
NEWS...NEWS....
NEWS...NEWS....
NEWS...NEWS....
NEWS...NEWS....

PUBLIC SECTOR

John Butters tidies up and puts it all away with the latest archive programs from the public domain

● **South West Software Library** has just released its latest public domain and shareware catalogue.

Catalogue number 6 contains nearly 50 per cent more disks than last June's issue, and is available free of charge.

Contact the library at the address given at the end of Public Sector if you would like to receive a copy.

● **A new library** recently set up in the Scottish Highlands has been given the apt title of Caledonia PDL.. Double or single-sided disks cost £2 each, dropping to £1.50 if more than 10 disks are ordered.

All orders are guaranteed to be dispatched by first class post on the same day. Caledonia's address can be found on the last page of Public Sector.

● Now available exclusively from Goodman Enterprises is The Amateur Astronomer's Guide to the Night Sky – a program which was mentioned in the October 1990 issue of 'USER.

Other libraries have earlier versions, however these may be less reliable. Supplied with printed documentation, Guide to the Night Sky costs £3.95.

● A busy postman in the Stoke-on-Trent area has covered Goodman Enterprises' doormat with more than 50 quality public domain disks in recent weeks.

Among the collection of new disks to be added is a set of 20 German clip-art disks. Also in the postbag were a couple of updates from earlier PD programs.

The Cheetah file copier is now up to version 3, and provides a quicker and more sturdy operation.

Hype has progressed to version 1.3, with modifications including the ability to use MIDI files.

The library will be publishing a new supplement to its catalogue at any time now. Subscribers will receive a free copy but others can obtain one by contacting Goodman.

● Libraries should send their new disks to: Public Sector, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP.

Keyboard slip-ups are likely to be the problems most frequently found when a document is checked against the dictionary

Once the document has been checked the program offers options to save new words to the dictionary file, and re-save text files

Check the dictionary

Although there are a few spell checkers in the public domain, and indeed some which are commercially available, nearly all have a number of drawbacks.

Usually sold on the strength of the number of words held in their dictionaries, users are often left puzzling why correctly spelled, short and simple words are questioned, while long, generally unused ones pass without difficulty.

The reason is simple, the word hasn't been included in the 70,000 or so word dictionary. One of the latest additions to the collection of spell checkers is the shareware program Diction created by a Canadian chap called Dan Panke.

It's a novel idea because the dictionary holds an incredible number of words – none. So how can a spell checker with no words in its dictionary pick out incorrect spellings? Well the answer is – it can't.

Diction is built by passing over a text file, with all the words not found in the dictionary file being questioned. The user has the option of putting that spelling into a file called DICTION.RY or bypassing it if it's one that is unusual and unlikely to be used again, such as the filename of a program.
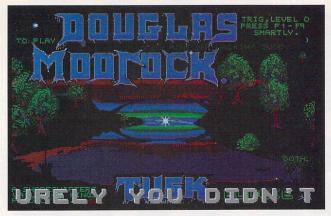
The first few times the program is used the process can be slow and boring, but because most writers repeat the same words over and over again it isn't quite as daunting as it appears.

Many mistakes are caused by simple typing errors, such as hitting the S instead of the A, and these are the mistakes you'll find when checking documents. If you make a spelling mistake, it's very likely that you won't know that the word is misspelt and so will add it to the dictionary.

Diction asks for the text file to check, and as it passes through the document a few lines of text around the word being examined are shown. Information about the file is shown at the bottom of the screen, and once the spell checker has done its job any new words can be added to the dictionary.

Errors can be corrected as they are found. Pressing function key F1 leaves the spell checker and enables text to be edited, after using the cursor keys to locate the offending part in the text.

If you're interested, this quick and useful utility can be rushed to you from the new Caledonia PDL. Get onto it!

Loading screen from Douglas Rockmoor – read the scrolling messages before it's too late...

Collect the gems, but if one of the boulders falls on your head it's goodbye Rockmoor

Miss the boulder

Anybody who remembers the Acorn Electron will probably remember it for the game Repton. Released during the Electron's heyday, Repton was followed by several sequels just as the machine was on its last legs and about to die.

The result was that the computer enjoyed a temporary new lease of life following each release. The game's concept spread to other home computers, and on the ST became known as Boulderdash, but of course the difference is that the ST has plenty of life left in it yet.

Now owners of one megabyte machines with colour monitors can save themselves

£20 and receive a clone of the game from the public domain. Douglas Rockmoor is the title of the PD version.

For those who haven't had a taste of the action before, the idea is quite simple. The character – Douglas Rockmoor? – is given a set time in which to rush around the play area collecting first gems and then a final object which lets him move on to the next level of the game.

The scenario is underground and Rockmoor – that's you – digs tunnels in the earth to move on to the objects.

Hazards? There are plenty of them. They come in the guise of massive boulders

which fall, disturbing the earth beneath them. A boulder could block your way, making it impossible for you to progress any further into the game. Even worse it could drop on top of you.

Only a small portion of the play area is visible at any one time. This makes the game even more difficult because you don't know whether you're making the wrong decision when taking a particular route until it's too late to change your mind.

Douglas Rockmoor is a great game which will have you hooked before you know it. It's available from Goodman Enterprises on disk number GBU52.

In this version of Star Trek, drop-down menus show all available options. The mouse pointer has been made into the Star Fleet insignia

Interviews with members of the Star Fleet have been taken from past magazine and newspaper articles

The program has been written to celebrate the 25th anniversary of Star Trek. A picture slide show shows some of the action from over the years

The Final Frontier

Apparently the world is poised to celebrate the 25th anniversary of that popular space adventure, Star Trek. Joining in the celebrations is one of the programmes' millions of fans who has written a public domain program.

Steven Howlett of Swansea has compiled various newspaper and magazine articles from over the last 25 years to come up with this GEM-based program. You

guessed it – it's called Star Trek. It contains 300K of text files and a picture slide show of what the author considers to be some of the most exciting shots from the popular programme.

It includes profiles of the various characters which have travelled on-board the USS Enterprise, and pieces of information which have appeared in the press, including interviews with some of them.

There's nothing special in this presentation, although the mouse pointer has been shaped into the famous delta-shaped Star Fleet insignia. But it's still a must for any self-respecting, serious fan.

Star Trek – the software – runs in medium resolution only and is one of many new programs to have appeared in the Goodman Enterprises library recently. Ask for disk number GD999.

ARC programs

A collection of disks can soon grow to such a size that it's difficult to manage. You want to keep all your software but you also need desk space – so what's the answer? Cutting down the size of files will provide more spare room on each disk so you will be able to put more on to each floppy, or even hard disk.

The result is that fewer disks are needed to store software. Quite often files can be cut by around 85 per cent of their original size so considerable space can be saved.

To make it ready for use, anything that has been archived needs to be de-archived. So although space is saved, files used frequently should be left untouched, otherwise you'll be spending far too much time converting them.

But rarely used programs and text files can be chopped down. Here are a few programs that can do the job for you...

● ARC ST is the most widely used of the bunch and we use version 6.02 on our CoverDisk. It comes from Darin Waynes of Phoenix, Arizona, but is available from Goodman Enterprises. Version 6.02 of ARC can archive directory trees and has been made much faster.

Operation is quite simple but can be made easier if you use another public domain program called ARC Shell. Using the files of ARC ST, ARC Shell adds a GEM-interface to the archive program, which makes the program easier to use. Instead of typing command lines, you point and click using the mouse.

Disk utilities are also included with ARC Shell. These can carry out disk operations such as copying, deleting and renaming files without quitting from ARC. Again, Goodman Enterprises holds the program.

● Another archive program included with a set of disk utilities is DCOPY, now at version 3.6. DCOPY was written a few years ago by Ralph Walden, but has recently been tidied up by Larry Novak. Novak has also made the program compatible with the Mega ST.

Using the program couldn't be simpler. Once booted, the screen fills with the available options, alongside the key combinations to activate them.

Pressing the letter A on the keyboard prompts you to give the archive filename. When this is entered, you're asked for the file which is to be crunched and that's all there is to the process.

When quitting from DCOPY you'll be given details of the new file, such as its new size and by what percentage it has shrunk. Another one which can be found in Goodman Enterprises' library.

ARC Shell is an additional program which adds a GEM-interface to ARC ST

Dialog boxes are used in ARC Shell. Here the user is asked to select the archiving disk drive using the mouse

Archiving is just one of many disk utilities in DCOPY. The program is controlled through keyboard commands

ON SKID ROW

It's rare that demos are reviewed in these pages. Most are remarkably similar and many are ridden with unnecessary bad language – but there are some which deserve a mention.
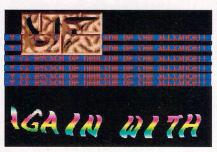
One of these is Skid Row by a German programming team calling itself The Alliance. The package's two disks contain 24 demos which exhibit the ST's graphic and sound capabilities to the full.

On booting up you're given a 3D view of passageways which have 24 doors leading off to the left and right-hand sides. Entering a door decrunches the demo related to it. That demo will then be shown until the spacebar is tapped.

Skid Row is a demo which collects many of the things found in others in the public domain and puts them into one program. A copy of the program can be ordered from the TRuST PD library on disk numbers MEG37 and MEG38.

A demo which combines most of what's been seen in earlier programs. Each of the 24 demos is loaded by entering one of 24 doors in a maze of passageways

LITERARY FLOW

James Nicholson looks at the English version of PageStream, the package set to stem the flow of competitors in the desktop publishing market

One area in which the ST has well and truly made its mark is in desktop publishing and its status will probably grow even larger as TT sales increase. It is highly unlikely that the machine will ever be used to the same extent as Apple's Mac. The Mac is found in many publishing houses where it is used in conjunction with packages such as QuarkXPress, a combination which gives very professional results.

But for the club newsletter, school newspaper or any other printed page which needs more than a simple word processor-look about it, the ST's a cheap answer. It's perfect for those on a realistic home or club budget.

One reader recently pointed out to *Atari ST User* that the machine is even being used to produce a daily newspaper in Vietnam – prospective Rupert Murdochs read on.

The top word processors come very close

to the lower-end desktop publishing packages, but basically the advantage of a DTP program is that a document can be split into several boxes or columns, and pictures can be added. In addition they usually offer many different fonts and type sizes, measured in points with one point equalling 1/72 inch.

THE COST OF CREATION

If you're looking for a good DTP package which is within your budget then Soft-Logik Publishing from the other side of the Pond might be able to help. Its own product has been available in small numbers in the UK for a few years. However, it has American files and is often criticised in the computer press for its slow speed and minor bugs.

Soft-Logik has recently converted PageStream for the UK market, and the program is currently in version 1.82. The software

has been changed so that the English program has a relevant dictionary, the correct hyphenation and familiar keyboard layout.

POINTS FOR PERFORMANCE

So how does the new PageStream perform? The manual remains unchanged but as most people will be able to cope with the occasional Americanism it shouldn't be a problem.

The documentation can be found inside a respectable A5 ring binder and has been produced using PageStream which looks quite impressive, although in places the text can be a little vague.

The software is supplied on two floppy disks – one contains the program, the other has the fonts. It is booted by double-clicking on the file PGSTREAM.PRG, which is installed on to a hard disk drive for speedier operation.
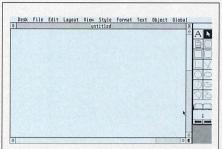
PageStream loads to give a GEM-based

Desktop, which demands the use of the mouse for the pull-down menus. On the right-hand side of the screen is the program's tool-box – represented by several icon boxes – which is used to change between modes and the various drawing instruments.
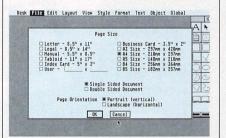
DOWN TO WORK

Opening a document brings up a fairly standard work screen which can be adjusted in size and moved around the monitor. Owners of normal-sized monitors will find that quite often the screen's size limits the amount of the work area which can be seen at one time.

By clicking on bars at the foot and side of the document you can easily bring other parts of the page into view. And text can be gener-

The screen is simple and clear with a GEM-based Desktop. The toolbox is found down the right-hand side of the screen

Documents can be of many sizes, ranging from business cards to broadsheet newspaper pages. To view large pages on a normal-sized ST monitor they have to be moved around the screen as required

A selection of PageStream's fonts and text sizes. Additional disks give more typefaces for users with greater needs

Desktop publishing gives a better look to documents than a word processor and is especially useful for club newsletters

ated in two ways. Either use a word processor to enter the copy and save the file in ASCII format, to be reloaded into PageStream, or type straight into the desktop publishing package.

For large documents the former method will probably be the quickest route to a finished document, but smaller amounts of text can be entered directly without any difficulty at all.

MY MISTAKE

Errors in text are easily corrected using the many features to be found in PageStream. The English version of the spell checker is among the welcome new additions to the package – although it's far from being the best around. Also present are search and replace, and cut, copy and paste options.

Point sizes range from 1/50pt up to 1310pt and leading – the gap between lines of text – goes down to 1/50pt. Hyphenation can be either manual or automatic – when words are hyphenated as they wrap around on to the next line, as on the pages of this magazine.

If text appears too crowded or spaced out the distance between characters can be adjusted to improve the look of the page. This is known as kerning and it can be carried out manually for a single instance or alternatively, batch kerning will automatically respace all instances of certain character pairs.

Depending on the type of document you are producing, different fonts can be used. The package comes with 10 resident fonts including Helvetica. Already two font disks, Font Pack 1 and Plus Pack, are available as extras costing £50 each.

Selecting Rotate from the Object menu gives the ability to rotate, slant or twist any selected graphic or text, in one degree increments. Slant and twist affect only the vertical or horizontal aspects of the image being rotated, while rotate puts the object in its correct form at a new angle.

Business software often has the ability to store frequently used key combinations as macros. In desktop publishing this is known as tagging but it operates in a much more powerful way to produce style sheets.

Text attributes such as font, size, style and formatting can be stored as a tag, which is applied to text to give formatting uniformity.
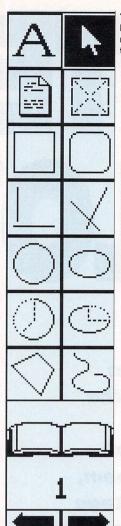
There are two distinct types of graphic images – bit-mapped and object-oriented drawings – and they can be positioned anywhere on the page. Bit-mapped pictures originate from paint programs or scanners and are imported into PageStream, whereas object-oriented drawings are created from within the DTP program using the drawing tools.

The drawing mode is selected when you choose one of the drawing tools from the tool-box – which is highlighted to show when it's in use. The available tools provide the ability to create boxes, round-cornered boxes, lines, circles, ellipses, circular and elliptical arcs, polygons and freehand drawing. Text can be flowed around pictures of any shape.

PRINTING POWER

PageStream can handle 282 trillion colours – give or take a few – although the ST is only capable of displaying four colours from its palette of 512, or 4,096 on the STE. Items requiring printing can be sent directly to a colour printer, and the program can generate colour separations on mono printers for use with a professional printer.

A printer is essential for desktop publishing work. PageStream supports laser, dot matrix

The drawing mode is highlighted on the menu when a drawing tool is chosen

and ink jet printers and is able to print to PostScript-compatible machines or save text to disk in a PostScript file. This enables it to be printed on a PostScript printer elsewhere.

At this affordable price, PageStream is set to make its mark in the ST desktop publishing marketplace. It could, however, be let down by the continuing problem of being a little slow, especially for those users without a hard disk or a second floppy drive.

Product: PageStream
Supplier: Silica Systems
Price: £149.95
Tel: 081 309 1111
Configuration: All STs, TT, 1Mb RAM

THE BOTTOM LINE

FEATURES: English spell checker, kerning, rotation of text, 10 resident fonts, outline fonts, tagging, output colour separations, PostScript, dot matrix and laser printer output.

EASE OF USE: A little slow and flickery, GEM-based, respectable manual, UK office which is due to open shortly will offer support for the package.

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

INTERACTIVE

RESCUE

Computer cracking up? Disks doing back flips? Printer out of puff? 'USER's very own Silicon Service Supremo is at your disposal.

CAD WORKSTATION

Q I am planning to run the AutoCad PC-based CAD program on my Mega 2 ST. I am told that besides the emulator, I would require a maths co-processor and a hard disk to obtain the necessary speed of operation.

Could you advise me on this and also which one of the emulators would be better for the AutoCad program?

I also have another problem in that I have an HP DeskJet printer which will not print the graphics from First Word Plus. Can you help in any way?

P E Bruce, Billericay, Essex.

A AutoCad huh? Instead of going to all the trouble and expense of buying an emulator, maths co-processor and, of course, a copy of AutoCad (a shopping list which won't leave you with much change from a thou), why not simply run one of the better ST CAD packages available?

The best aren't cheap, but then neither is AutoCad, and at least you know the set-up will work perfectly. Even the best emulators are apt to fail occasionally – sometimes just when you need them most!

What's available ST-wise? At the cheaper end of the market there's the excellent GFA Draft Plus 3 which sells for £149.95 (GFA Data Media 0734 844 335).

Comprehensive, yet simple to use, Draft Plus 3 has a menu and icon user interface and works with half meg STs – although that, of course, is no concern of yours...

Somewhat more expensive is DynaCADD, which has a hefty price tag of £650! Don't let that put you off however. DynaCADD has no equal in the world of ST CAD.

The program is fast, comprehensive and all-powerful, it supports A3 monitors and can generate as well as accept files in industry-standard formats – maybe you won't have to use a PC CAD package after all!

Prospective users of DynaCADD need to have STs equipped with at least 1Mb of RAM but again, that's not a problem for you. DynaCADD is distributed by Expressworks (0252 726255).

Still not convinced? Maybe you really do need PC emulation and AutoCad's power. There are two very good '286 PC AT emulators available at the moment, the ATonce from Silica Systems and the AT-Speed from Compo UK. You'll need '286 emulation in order to gain a decent turn of speed.

The ATonce board supports ST RAM quotients up to 4Mb and can use all I/O ports, hard drives and the Atari Laser printer – very important if you want quality reproduction of drawings.

The device works fine on half meg machines and sports a Norton speed index of 6.7. Silica's Atonce costs £199.99.

Compo UK's AT Speed offers full support for the ST's I/O ports and hard drives and provides a comprehensive range of PC screen display modes, including CGA and Hercules.

One very nice feature is that you can run the device as a desk accessory with machines of 2Mb or more. The AT Speed costs £199.

Which you choose most probably depends upon the toss of a coin. Either emulator should provide enough speed to cope with AutoCad without any additional hardware although, you will need a hard drive.

The HP DeskJet printer is not being used with the correct printer driver in order to reproduce graphics from First Word Plus nor, I suspect, any of your other programs. The solution is simple, beg, steal or borrow the correct driver.

In the case of the DeskJet when used with an ST, this usually means getting the printer to run in an Epson emulation mode such as FX80, then running an FX80 printer driver – available from the public domain, see our PD pages for any suitable suppliers – on the ST. This should have you printing satisfactorily.

If it doesn't, and you can't find a DeskJet driver – the public domain really is the best place to look after Hewlett itself – then it's probably down to creating your own driver by tapping the relevant codes from the DeskJet's manual into an ASCII file created with First Word. Examine existing drivers first for format. Happy tapping!

OOPS?

Q First of all, I would like to say that I've been reading your magazine now for three years and really enjoy it. And now to my problem. The thing is, I am working for a programming company in Sweden and we have started to develop our programs and systems in C++, an object-oriented language, with UNIX as an operating system on Sun SPARC stations.

I've been looking around in your magazine for an article or an advertisement for a C++ implementation on the Atari ST but have never seen any. So my question is, does any exist? Public domain or commercial it doesn't matter. Any other object-oriented language

...anything can happen in the next half hour...

would also be interesting, but I've never seen anything about that either.

I find it strange that no object-oriented language exists for the ST due to the fact that you are always saying that the machine is so popular in wide circles and object orientation is such a hot subject nowadays.

There are several benefits with C++ and it's really good programming in C++ rather than just ordinary old standard C!

I think it would be a good idea for the magazine to have an article about C++ and object-orientated programming because in the PC and the UNIX worlds these things are quite common.

Anders Askerup, Partille, Sweden.

A Just one more example of the really serious stuff not being available in the UK I guess. I can point you to a half dozen C compilers, dozens of other languages and many, many utilities but no object-oriented stuff.

A feature on OOPs? Maybe, but then, as there isn't an OOPs-based language available, the subject has limited appeal. If anyone else wants to see OOPs on the pages, write to the editor and maybe she'll relent.

FM VS. ST

Q I bought my first copy of *Atari ST User* (issue 58 December 1990) about a month ago and was rather impressed by its format. However, I won't subscribe yet until I have actually purchased an ST. But firstly, could you please throw some light on the following?

● Apart from price, what are the essential differences between an Atari 520STFM and an Atari 520STE?

● What are boot and work disks?

● How are autofolders created?

● Can a colour TV set serve exactly the same purpose as a colour monitor.

● Do the Atari Discovery Packs come with monitors?

● Finally, how can I get a start-up disk without having to by a whole ST as well?

Ugochuku Okonkwo, Essex.

A There are a number of differences between the STFM and the STE, not least of which are the latter's superior hardware specifications. The STE offers a whole lot more in the way of sound and colour while remaining – almost – compatible with existing STs.

If you have the choice, buy the STE. It's a far better machine for your money. Although initially there were problems with software compatibility – some programmers had used undocumented features of the FM in order to provide better specs, these led to a downfall when STE owners attempted to use the programs. This has now been set right, in that all software houses provide versions of their software for both machines.

Boot disks and work disks are exactly the same with the exception that the former may contain some small utility programs, such as a replacement file selector, or memory checker, which are loaded when the ST is switched on with that disk in

its drive. Work disks are those which you use to copy and save files, store text and so on.

The two disks are entirely interchangeable, in that the ST's operating system is stored on ROM and the machine does not require a disk in order to boot – although the process will take a lot longer without a disk in the drive.

Auto folders are created simply by selecting the New Folder... option from the File menu on the menu bar then, when you're asked to name the new folder, calling it 'Auto'. The ST then creates an auto folder on the current disk.

By dropping a program you want to run into the auto folder, it will start-up automatically if you boot the machine with that disk.

A domestic colour television can be used in place of a colour monitor and will serve exactly the same purpose whether in low or medium res.

Colour monitors however, display a signal received directly from the ST whereas colour televisions need to demodulate a modulated ST signal before producing a display. Consequently, the quality of the display is far better on a monitor.

Discovery Packs do not come with monitors and nor, as far as I'm aware, does any other pack or bundle. You may be able to find an Atari supplier who is either offering a deal or who will put one together for you. Or why not check out the small ads in *Atari ST User*?

Why on earth do you want a boot disk without a computer? They are of no use whatsoever unless you have machine you want to boot! And anyway, a boot disk – as you know because you've just read the description of one – is not needed before the ST will boot.

SINCLAIR ST?

Q Having read your wonderful magazine for the last couple of years and eventually taking out a subscription, I noted that you mention there is a QL emulator for the ST. I have 'phoned most of the public domain libraries to be told that yes, they think

there is one but don't have it. Would you know where I could obtain one?

C R Wilton, Wallington, Surrey.

A To be perfectly honest, no, I don't know where you can get the QL emulator. It was around a few years ago and although everyone is still aware of it, no one seems to know where it can be obtained.

If anyone out there knows of a suitable supplier, let us know (or send it to us...) and we'll publish the details.

MORE DOSSING!

Q I have just completed a business course on the Amstrad PC 2086 computer (IBM compatible) with a 30Mb hard drive and instead of forking out £1,300 for something similar, I thought I might be able to upgrade (er, downgrade? – SSS) my ST to do the same job.

I own a 520STFM with a half megabyte of memory and a one megabyte double-sided disk drive. Is there a PC emulator that will allow me to run programs written for the Amstrad and the operating system MSDOS, programs like Word Perfect 5, dBASE 3 Plus, Supercalc and so on?

If I bought a hard drive for my ST, would it be advisable to upgrade my internal RAM to use with a 20 or 30Mb hard drive? What would be the best, 1Mb, 2.5Mb or 4Mb?

Finally, would all my existing software work with all this upgrading?

P J Ellis, Swindon, Wilts.

A Sure, you can 'upgrade' so that your ST runs software intended for machines sporting DOS. You don't need to upgrade a half meg ST in order to use the machine with a hard drive, but you will need to upgrade RAM to use some of the PC software you mentioned.

For a suitable PC emulator take a look at the reply to P E Bruce's letter in this month's Interactive Rescue.

Buy as much RAM as you can is the bottom line, although 1Mb will enable you to run most software. Likewise, the bigger hard drives are better – you can get more into 'em! – but a 20Mb device will get you up and running with the desired PC software.

Far from making your machine incompatible with existing software, extra memory and a hard drive will enhance the operation of your computer and programs.

NEW TOS?

T As an avid reader of your magazine I was interested in your recent article on the TT's Desktop and your question at the end referring to when ST owners will benefit from it. Well the good news is that I have had a copy since October for my ST and it is readily available in Europe. It is TOS 2 from Atari and contains all the icons and single keystroke combinations you were referring to.

This program is around 150K and so 1Mb of memory is preferable. The program runs from an AUTO folder. It also provides those people without TOS 1.4 – most UK owners I know – with the improved file selector. The new control panel is very Mac-like and you can set up the STE's sound using it.

J H F Watson, Maastricht, BFPO 18.

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
Atari Mega ST1	£589.99
Atari Mega ST2	£934.99
Atari Mega ST4	£1,279.99
Stacy 2Mb	£1,724.99
Stacy 4Mb	£2,069.99

MONITORS

Atari SC1224	£299.99
Atari SM124	£149.99
Philips CM8833	£310.49

FLOPPY DRIVES

Actionsoft 1Mb 5.25in	£134.95
Atari SF354 single sided	£119.99
Atari SF314 double sided	£149.99
Cumana 1Mb 3.5in	£79.99

HARD DRIVES

Atari Megafile 30Mb hard disk drive	£499.99
Atari Megafile 60Mb hard disk drive	£689.99
Supra 30Mb hard disk drive	£499.95

OTHER HARDWARE

Atari SLM804 laser printer & interface	£1,379
Atari Mouse	£24.99
Casio MT240 MIDI keyboard	£89.95
Epson LX850 printer	£320.85
EuroLink modem (inc software)	£299.95
Linnet modem	£182.85
Linnet 1200 modem	£286.35
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, spreadsheet packages:

K-Spread, Kuma £24.95
Bottom of the K-Spread range
K-Spread 4, Kuma £129.95
Most professional in the range
Masterplan, Ditek.................£79.95
GEM-based, Lotus 1-2-3 style
Mini Office S/S, Database ...£24.95
Simple but workable package
Power Plan, Abacus £69.95
GEM-based with graphics

DIARY DATES

UK EVENTS

14 to 16 April 1991
European Computer Trade Show
Organiser: Blenheim Database
(081 868 4466)
Venue: Business Design Centre, London

10 to 12 May 1991
Computer Shopper Show
Organiser: Blenheim Database
(081 868 4466)
Venue: Wembley Conference Centre

12 to 14 July 1991
4th International 16-Bit Computer Show
Organiser: Westminster Exhibitions
(081-549 3444)
Venue: Novotel Hotel, Hammersmith

OVERSEAS EVENTS

23 to 25 August 1990
Atari Messe
Organiser: Atari Germany
Venue: Dusseldorf Fairground

● **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.**

REPAIRS

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

Analogic Computers (UK)
152 Latchmere Road
Kingston Upon Thames, Surrey KT2 5TU.
Tel: 081 546 9575

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

Ladbroke Computing
33 Ormskirk Road, Preston, Lancs, 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

WTS Electronics
Chaul End Lane, Luton,
Bedfordshire LU4 8EZ.
Tel: 0582 491949

ADDRESS BOOK

Arnor
611 Lincoln Road, Peterborough
PE1 3HA.
Tel: 0733 68909
Fax: 0772 561071

Atari UK
Atari House, Railway Terrace,
Slough, Berkshire SL2 5B2.
Tel: 0753 33344
Fax: 0753 822914

CIX
Suite 2, The Sanctuary,
Oakhill Grove, Surbition,
Surrey KT6 6DU.
Tel: 081 390 8446

Digita International
Black Horse House,
Exmouth, Devon
EX8 1JL.
Tel: 0395 2700273
Fax: 0395 268893

Gremlin Graphics Software
Alpha House,
10 Carver Street,
Sheffield S1 4FS.
Tel: 0742 753423

Frontier Software
PO Box 113,
Harrogate, N Yorks
HG2 0BE.
Tel: 0423 567140

Interactive Publishing
Europa House, Adlington Park,
Macclesfield
SK10 4NP.
Tel: 0625 878888
Fax: 0625 879966

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

EuroLink
Europa House, Adlington Park,
Macclesfield SK10 4NP.
Tel: 0625 878888
Fax: 0625 879966

Millennium
Chancery House,
107 St Pauls Road,
London N1 2NA.
Tel: 071 548 9897

Power Computing
Power House, 44A Stanley Street,
Bedford MK41 7RW.
Tel: 023 427 3000

Prestel
Dialcom UK, Dialcom House,
Brindley Way, Hemel
Hempstead, Hertfordshire
HP3 9RR.
Service Tel: 0442 237777
Sales Tel: 0800 200700

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

Third Coast Technologies
Unit 8 Bradley Hall Ind Est,
Standish WN6 0XQ.
Tel: 0257 472444

US Gold
Units 2-3 Holford Way,
Holford, Birmingham
B6 7AX.
Tel: 021 625 3388

YOUR WORDS' WORTH

Create a classic using your word processor. Simon Lawson shows you how to hit the right keys

This month Masterclass leads you through the complexities of word processors, helping you to achieve a better standard of writing and design. Every day thousands of word processors are used to produce documents of every sort.

Whether it's for creating a simple letter to a friend or a dedicated fanzine for your favourite computer, the benefits of a word processor are obvious.

Modern programs range from Calligrapher Professional with its sophisticated layout and font controls to the simple ST Writer, which provides the minimum of features. No matter what is offered by your particular program, they all share the same basic ideas.

The easy entry and editing of text is the primary concern of any word processor. In response to users' demands, many programs now include added features – all designed to make life easier. Spell checkers, graphics tools and the rest have all earned a place in the modern word processor.

Many people think writing is easy. But regardless of the kind of word processor you have, a lot of care and thought is necessary to produce good writing. A word processor won't turn you into the next Shakespeare – it will just make it easier to put the words onto the paper.

ON THE RIGHT PATH

The creation of any document, be it a letter or a masterpiece should follow more or less the same path. Before you begin, take some time to think about what you want to say.

If your program has an outliner feature, make use of it. A document outline helps to keep your thoughts on track. It also ensures that you don't leave out any important points.

Even if your program doesn't have a dedicated outliner, you should still create an out-line on paper. This is a list of the ideas and important points which you want to include in the document.

The main advantage of a word processor over a typewriter, or even a handwritten document, is the ability to make changes as often as you like. If you do find that something has been left out you can insert it in the right place with relative ease.

Investigate the cut and paste system on your program. Most allow text to be cut out and moved around a document. Some even allow blocks of text to be be saved to disk for future use. This is useful for saving pieces of text which are used frequently, such as your own name and address.

CHECK IT OUT

When you're reasonably happy with your document, check it carefully. Spelling mistakes in any document are embarrassing, especially if it's a letter to the bank manager.

The facility to check spelling is invaluable in any word processor. A spell checker has a large dictionary – typically about one hundred thousand words. When the spell checker is called up every word in your document is checked for errors against the words stored in that dictionary.

Some programs can check every word as you type it in, but this usually slows down the program. If you're not a very accurate typist, spell checking as you type cuts down the number of mistakes to be corrected later.

Remember that a spell checker will not spot errors in context or grammar. 'Which' and 'Witch' are both correctly spelled words, but they have totally different meanings. A spell checker won't tell you if you've used the wrong word.

When the document is complete, print out a sample copy. It's far easier to proofread a document for mistakes from a printed copy than on-screen. And if possible, ask someone else to read your document – they're sure to find mistakes that you've missed.
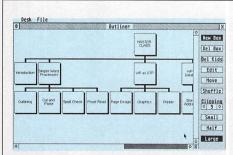
If you're sending letters to people, it is much better to use a printed label on the envelope. A handwritten address can spoil the effect of a printed letter.

WP AS DTP

With the recent arrival of programs like Calligrapher and WordFlair, the line between a word processor and a desktop publishing package has become blurred.

Now that picture imports, multiple fonts per document and improved print quality are possible, word processors are being used for more complex tasks.
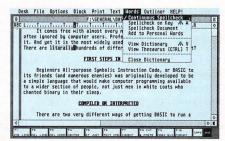
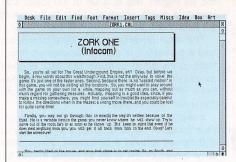Manufacturers have coined the phrase 'document processors' to describe these

Calligrapher Professional's outline is an invaluable aid. It helps you to organise your thoughts before you begin to write

The marked block is cut from the document and stored in memory. It can then be moved to another section
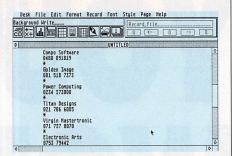
Continuous spell checking helps to reduce the number of mistakes in the document. It may however, slow you down

In this layout the eye is drawn to the heading. Only two fonts have been used which keeps the document clear and easy to read

The above page will look good no matter what type of printer is used. The graphic is used to draw attention to the page

This database is used to store telephone numbers. It can easily include the full address of a person or company

more sophisticated programs. When the basic document is ready, you can use programs like these to improve its design. Adding text effects while you're actually writing can be confusing, and it is likely to slow you down.

If you intend to use a program like Calligrapher for page design, there are several important things to remember. Indeed, these apply equally to a true DTP program.

Creating a document well is an art. A skillfully designed page is eye-catching and makes people want to read it. Poor design detracts from the information on the page, making it more difficult to absorb.

The most important thing to bear in mind is simplicity. Just because your program offers 50 different fonts, don't feel you have to use them all. Two or three on a page are usually enough to make the point.

If you intend to use graphics, make sure they're relevant to the text. Don't just use a picture because it happens to look nice.

PRINTER POINTS

You need to take into account the capabilities of your printer when designing a page. A 9-pin dot matrix printer will have trouble with a very complex page, and the finished output won't look very good. A laser printer has few restrictions on the type of page it can print.

Finally, make sure that the design of pages is consistent. The same fonts should be used throughout a document, and the same basic page style and layout should be retained.

Almost anyone who uses a word processor needs somewhere to store names and addresses. Some WPs, like WordFlair, have a built-in database for storing this kind of information, but not all programs are so friendly.

What few people realise is that any word processor with a text search function can be used as a simple database.

KEEPING TRACK

To set up a database of names, simply type in the information as you want it to appear when printed. Always remember to separate records with a blank line, or a line of characters, such as asterisks.

When you want to find an address, select Search and type in the name of the person. The program will find and display the name, and lo and behold, the address as well.

You can take this a stage further. If you can open multiple documents, simply use the cut and paste function to copy the address to a new document. From there print out a professional looking address.

Word processors and document processors make text easy to write and present in

an attractive manner. So it's worth taking time to get to know your particular package.

The best way to find out what you're capable of doing is to experiment. Trial and error costs nothing and well presented correspondence always creates a good impression.

The new generation of document processors bring DTP-like features within the reach of the average user. Small clubs and user groups can create professional-looking publications quickly and easily, and for very little cost. All that's needed is time to experiment and a willingness to learn from your mistakes. Happy writing!

BUILT-IN OR TAKE AWAY?

Word processors are now more than mere programs for inputting text. A whole range of extra features has been added, and if your program doesn't have the particular features you want some can be introduced separately.

One feature which is slowly becoming more common in word processors is a thesaurus. Based on Roget's famous writing aid, a thesaurus enables you to look up words which have similar meanings.

It can be an invaluable aid to writing – using a variety of words makes a document more interesting. But don't overdo it, and make sure that you are using the word in the correct context!

If your word processor doesn't have a built in thesaurus, it is possible to buy one separately which works as a Desk Accessory. As a DA, it can be used in any program that uses GEM, not just your word processor.

It's also possible for you to buy separate spell checker programs for those word processors which don't have one built in.

A spell checker, no matter how it works, is really essential for serious work on a word pro-
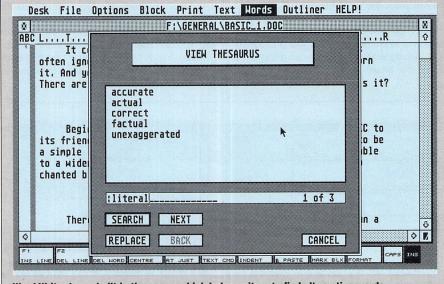
cessor. Several are available, both commercially and in the public domain.

A word processor with a mail merge function can be useful if you need to send lots of similar letters to different people. A mail merge takes a standard letter and inserts different information in each copy.

This enables individually addressed letters to be created. Mail merge is often used by companies to send out personalised letters to customers. It's seldom useful to home users, although it can come in handy if you run something like a small club or user group from home.

Mail merging often calls upon a large number of names and addresses. This information is best stored on a database, although it can be done with a word processor. WordFlair has a built-in database, which makes it ideal for mail merging.

Some companies, such as Timeworks, make databases which are designed to integrate with word processors. This approach means that you can add to the database when necessary, and it also has the advantage of giving you a professional standard database.

Word Writer has a built-in thesaurus which helps writers to find alternative words

FLAIR FOR WORDS

Tap your hidden talents with the new document processor from HiSoft. Simon Lawson moves into creative mode and the words begin to flow...

Word processors seem to be two a penny at the moment, so any newcomer needs something special to stand a chance in the market. WordFlair is the latest offering, a new, integrated document processor from HiSoft.

The program originated in the US where it has been very successful. Goldleaf Publishing created WordFlair, and HiSoft has now released the UK version. It's supplied as three disks – one for the program itself, and two for the GDOS fonts and printer drivers.

STARTING OUT

Before even starting to use WordFlair, the GDOS system must be installed onto your machine. HiSoft doesn't supply a customised installation routine, just the normal GDOS installation program.

The only detailed instructions for setting up GDOS are on the main disk as a READ_ME file, which must be printed out to be of any use. The standard Atari GDOS manual is included, but this isn't very helpful.

The WordFlair package includes a special version of G+Plus, the program from CodeHead Software which replaces GDOS. G+Flair is used instead of GDOS, but all the same problems with installation still apply.

Copying fonts and drivers by hand then recopying and renaming the correct ASSIGN file shouldn't be necessary with a program like this. And the ASSIGN.SYS file must be edited by hand to set the correct path for the fonts and printer driver.

If WordFlair is to print to an Atari Laser printer, the fonts and driver supplied with the printer must be used because HiSoft doesn't include these features.

This is fine if you have the printer, but less than ideal if you plan to use a friend's printer and don't have the right fonts. GDOS fonts aren't public domain, so copying them from anyone is illegal.

Although it's possible to use your existing GDOS set-up – if you have one – WordFlair expects to be able to use Swiss as its default font and complains if it can't find it. Installing GDOS to work with WordFlair is essential to the smooth operation of the program.

FIRST IMPRESSIONS

If you have a hard disk, the best option is to install WordFlair on to it. The program creates quite large files when it's working, and the speed of a hard disk will speed up the loading of GDOS fonts.

On starting up, the first thing you'll notice is that the work area is smaller than that on most other word processors. The top part of the screen has a bar of 10 icons and a set of video recorder-like controls for the database, which take up space.

WordFlair differs from most other word processors in the way it operates. When a new document is created with this document processor, a background page is formed using the default font and style settings.

The background region also holds the document rulers which allow line spacing, margins and tab stops to be set. Once this particular region is in place, the main body of text can be entered.

After this text has been added new regions are created over the top of the background, and the main text re-flows to accommodate them. There are three main types of region, each one to hold different type of information.

REGIONAL INFORMATION

Text regions are just like the main background, and offer all the normal word processor functions such as styling text, and cut and paste. These regions are often used to make items of text such as tables stand out from the main body of words.

A calc region is used for performing mathematical operations. Numbers can be added, subtracted, divided or multiplied. WordFlair can perform some quite sophisticated operations and apply complex formulae to calc regions.

Additional information such as positioning pound signs and the number of decimal places for calculations can also be set for each calc region.

A graph region is used to create graphs. Titles are entered in a special dialog box together with horizontal and vertical axes. When all the data has been entered, WordFlair converts the information into a graph.

Line and bar graphs can be drawn, as well as pie charts. WordFlair also creates the legend which identifies the individual items in the graph.

Every region on a page remains independent, although each one follows the main ruler set on the background. Even if there are two calc regions or two graph regions on the same page, they can be set up to look completely different from each other.

IMPORTED GOODS

If all this business of regions sounds a bit too complex, don't worry. On the simplest level, WordFlair works like a normal word processor. Just use the background region to type in

William Mitchell, as the secretary of a small angling club, needs a program able to write letters to club members and keep a list of addresses. He also needs something on which he can produce an annual report including pictures and graphs.

WordFlair, as a word processor with a good integrated database fills the role very well. Individual letters can be written easily and quickly, and address labels can be created from the database.

Form letters can be stored and the database is also capable of sophisticated mail merges – it can send personalized letters to all members, or just a selection of members. WordFlair's ability to create documents with pictures, charts and tables also makes it the ideal package for creating the annual report for the club's shareholders.

Without the complexity of a full blown DTP program, it's much easier to get to grips with. No special training is needed to use the program to produce the annual report, just a little skill at page design. WordFlair may not offer the range of features of a dedicated Desktop Publishing program but it's simple to use and doesn't have lots of confusing options which might never be called upon.

text. If you don't want or need overlaid regions, then you can ignore them.

WordFlair also allows pictures to be imported. Both the IMG file format for bitmapped pictures and the GEM format for structured graphics are supported.

WordFlair doesn't have any direct support for Degas PI3 pictures files, so they must be converted to IMG before being used.

Even if you only use the background region for your work, all the normal facilities are present. Cut and paste, and search and replace are available, along with text styles like bold, italic and underlined.

If GDOS is installed, WordFlair can make use of the fonts on-screen to give a true WYSIWYG display of the finished page.

WordFlair is a good program to use, despite the sketchy information on actually installing GDOS. However, it has one glaring omission – there's no spell checker. This is an inexplicable omission which may work against it in the word processing market.

WordFlair will run quite happily without GDOS being installed, but it is necessary for printing out work. The print quality is high, although it can be a little slow.

DATE A BASE

WordFlair is one of the few word processors that have been designed right from the very start with mail merging in mind. WordFlair has its very own built-in database for holding names and addresses. All database operations are handled from a special menu, and using on-screen icons.

Creating a new database is simple. Just create the field name you need, such as first and last name, address, postcode and so on. Database files are simply composed of write and calc regions where data is stored.

There can be as many different items as you like on a record, and the amount of records which are needed in any· one database file.

For operations such as mail merge, WordFlair allows special 'floating' write and calc regions to be created in a document. They are described as floating because they expand and contract, depending upon how much information is taken from the database.

Database record files are very closely associated with their particular documents. Although a particular database can be used by many different letters, a database cannot be opened unless one of its associated documents has already been opened.
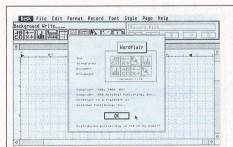
CONCLUSION

The manual accompanying WordFlair is clear and concise, and can be used both as a tutorial for beginners and as a reference for more advanced users.

Plenty of example files are supplied on the WordFlair disks, and the manual leads new users easily through them.
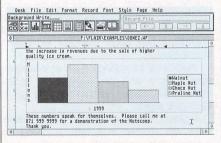
Once the tutorial section of the manual has been completed, the reader should have a good working knowledge of the program.

WordFlair may do well as a document processor because of its more DTP-like features, but as a straightforward writing tool it would benefit from a spell checker.
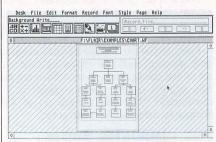
Product: WordFlair
Price: £79.95
Supplier: HiSoft
Telephone: 0525 718181
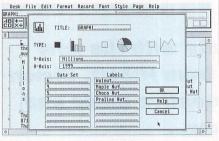**Configuration: All 1Mb STs, mono only**

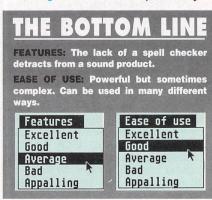**WordFlair makes extensive use of icons to control its main functions. This cuts down the main working area**

This dialog box controls the graphs that WordFlair creates. Once the data is entered, the graph is created automatically

The finished graph. The region can be resized to fit the page, and background text is flowed around it

This document uses only the normal Atari system font and the background region. GDOS has not been loaded

WordFlair provides a WYSIWYG page preview mode so that it's possible to see what the document looks like on the page

The printer and page size can be set up to match your hardware. Any page size is possible, not just the standard sizes

THE BOTTOM LINE

FEATURES: The lack of a spell checker detracts from a sound product.

EASE OF USE: Powerful but sometimes complex. Can be used in many different ways.

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

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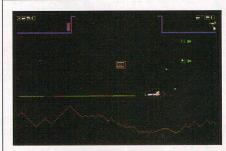
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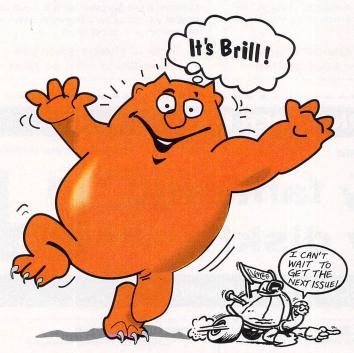
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Atari ST User 91

The Atari SM124 high resolution monitor has an exceptionally good screen, providing a clear, crisp display at a very reasonable price. The facts that the picture display is only 12 inches diagonally and the monitor can only display 640 by 400 pixels at a time are often over-looked because of the display quality.

For those who want more than this relatively small screen area, the answer has always been a monitor with a larger screen, such as those made by Taxan and Eizo.

Buying a large screen, high resolution monitor is a very expensive prospect – typically, they cost about £1,200 and are out of the reach of all but the professional DTP user. Atari's SM194, which is a 19 inch monitor, would set the user back a massive £1,800.

The new Reflex Graphics Card from Titan Designs attempts to solve this expensive problem by increasing the resolution of the standard Atari mono monitor. A plug-in board for the expansion bus of the Mega ST, Reflex provides a new monitor port to which the screen is connected.

A resolution of 1024 by 800 pixels is possible on a normal SM124 or 125 without any modifications. This effectively doubles the normal screen display of an Atari monitor.
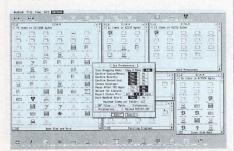
With a special A4 size monitor, 800 by 1024 pixels is possible, so a whole A4 page can be viewed on-screen at one time. Titan can supply a Samsung A4 monochrome monitor for £399.

Any program which is written correctly and follows the guidelines for GEM programmers will run on the Reflex Card. The driver software supplied with the card makes a small patch in the GEM screen width tables, informing programs that the screen is larger than normal. Programs should check these tables and adjust themselves accordingly.

The driver software for the Reflex Card installs in the AUTO folder of the boot disk, and a simple GEM program enables the driver to be configured for various different monitors and screen sizes. This software also includes the ability to grab a screen and save it as an IMG file.

Some of the screen modes need to be scrolled vertically to see the whole screen. But scrolling is smooth and faultless thanks to the advanced design of the Card.
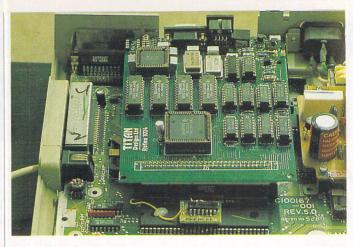
During the Card's test period, surprisingly few problems arose. Most programs tested

The Reflex Graphics Card installed in a Mega ST

REFLEX ACTION

Striving for more screen but can't find the cash? Simon Lawson discovers the answer in the Reflex Graphics Card

NeoDesk3 running on the Reflex Card takes full advantage of the extra screen size. The Card uses dedicated Video RAM which makes screen operations very fast

worked perfectly. Among those without problems are HyperPaint, HyperDraw, MegaPaint, all the HiSoft products, Timeworks DTP and Calligrapher Professional. In all, the Reflex Card proves to be one of the most compatible graphics cards available for the ST.

Some programs, like NeoDesk 3 from GST have been specially written to take advantage of larger screens and to adjust automatically

all of their operations to the new screen size.

Some of these however, when run on the Reflex Card – Calamus included – didn't check the screen width correctly. The result was some minor screen glitches which tended to be annoying although not a major problem.

Calamus was at least usable, although the right-hand scroll bar disappeared off the screen. Titan Designs supplies a desk accessory fixing this problem, and more patches for other programs will be made available.

The only programs which refused to run completely were cleaver programs, like the text editor Tempus which uses custom screen drawing routines and can't cope with strange screen sizes. Turbo ST, the software blitter program from HiSoft also refuses to work because it doesn't recognise the expanded screen size.

At present, the Reflex Card is only available for the Mega ST range of machines. This is because the card plugs directly into the expansion bus, a feature which has not been included on other ST models.

Titan is currently working on an adaptor to enable Reflex to fit over the 68000 chip in normal STs, in the same way that some PC emulator boards are fitted.

Titan is also working on an expansion board for the Reflex Card, so that the ST can

use a special CAD monitor with a resolution of a staggering 2048 by 1536 pixels. That's an A2 display size, which is ideal for applications such as DynaCADD which are at their best on large screen displays.

Product: Reflex Graphics Card
Configuration: Mega STs only, other versions to follow
Price: £228.85
Supplier: Titan Designs Ltd
Telephone: 021 706 6085

THE BOTTOM LINE

FEATURES: Double the screen display size on an SM124 with no hassle. Good support for larger monitors.

EASE OF USE: Just plug in and go. AUTO folder driver software is simple to set up and use.

Features		Features	
Excellent		Excellent	
Good		Good	
Average		Average	
Bad		Bad	
Appalling		Appalling	

ATARI GREY

SIMON LAWSON MOVES INTO THE FAST LANE AND WITH THE AID OF AT SPEED HIS ST BECOMES AN IBM PC

For a long time PC Speed, from Sack Electronics in Germany, has been the market leader in emulating the old PC XT. But times have changed and IBM has moved on from the XT to the AT – as a result the emulator has had to change as well.

IBM introduced a new breed of processor chips with the AT machines – the 80286 chip. This very quickly killed off the 8086 and the NEC V30 used in older machines. A new type of graphics display card, EGA was also introduced with the AT.

All of these new technological developments have been beyond the normal run-of-the-mill PC emulators. But now, to rectify this situation, Sack Electronics has upgraded its emulator, the result being AT Speed.

CHIPS WITH EVERYTHING

Rather than the old V30 chip used in PC Speed, AT Speed uses the newer 80286 chip. This has the advantage of making the board run faster, and it also enables the emulator to run newer programs.

The speed of PC clones is judged by the Norton Utilities Speed Index, named after the program which calculates it. For the older PC Speed the Norton SI rating was 4.0, which was respectable for an XT.

But with the real thing receiving a rating of around 10, PC Speed looked a little slow. AT Speed manages 6.7 on the Norton scale – slower than a real AT, but still an improvement. Hopefully continued development in emulation software will improve this.

The other major advantage of the 286 chip is compatibility. The new chip can do things that the older version can't, and new software often takes advantage of these extra facilities.

A lot of PC software now lists a 286 as a minimum hardware requirement, and AT Speed will run any software that is 'AT only' with no problems.

OPERATING SYSTEMS

Unlike the ST, the PC doesn't have all its operating system stored on ROM chips. The Microsoft Disk Operating System (DOS) is supplied on floppy disks and ideally it should be installed onto a hard disk. As with most emulators, Compo doesn't supply DOS with AT Speed but you can easily pick up a copy for around £50.

One of the most talked about programs during recent months in the PC world is Microsoft's Windows 3. It's a graphical front end for DOS and Microsoft claim to have sold a staggering one million copies since the program was launched in May.

As the name suggests, the program provides users with a windows interface for the PC. It takes its inspiration from both GEM on the ST and Finder on the Apple Macintosh to give the PC some of the user-friendliness of the much-acclaimed Mac. It includes drop-down menus, dialog boxes, windows with slider bars and an icon-driven front-end for file operations.

One of the main advantages of running Windows on a 286 processor, other than the marked speed increase, is the ability to have more than one DOS program running at once.
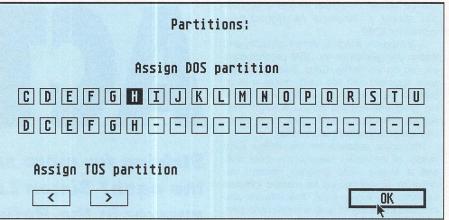
An increasing number of applications are being written to take advantage of the Windows environment, and given enough memory they can multi-task.
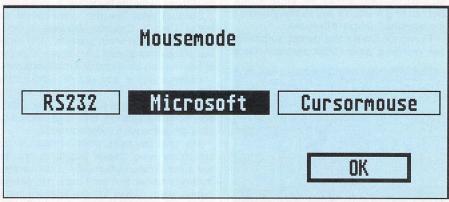
GETTING STARTED

AT Speed is very easy to set up and use. Like its predecessor, PC Speed, AT Speed requires a socket to be soldered onto one of the pins of the 68000 in the ST. This socket is to hold the circuit board.

Many dealers offer a fitting service for any-

Partitions:

Assign DOS partition

C D E F G **H** I J K L M N O P Q R S T U

D C E F G H - - - - - - - - - - - - - -

Assign TOS partition

< >   OK

ST disk drives can be configured with AT Speed so they appear with different drive letters

Mousemode

RS232 | **Microsoft** | Cursormouse

OK

The ST mouse should be set to emulate the Microsoft brand of PC rodent

Video emulation

Hercules | CGA | Olivetti | Hyper-Herc | EGAmono | **VGAmono**

OK

At Speed's installation program allows EGA and VGA graphics to be selected

one who doesn't feel up to attacking their ST with a soldering iron. Plug-in adaptors are available for both the Mega and the STE making fitting easier as no soldering is required.

The AT Speed board must be configured via a software driver program. The ATS_INST program is well thought out and follows the ST GEM rules of buttons, menus and dialogs.

The type of screen display to be emulated is set from this software, as are the disk drive configurations. If a hard drive is used, partitions can be set aside for using as MS-DOS drives and you can even boot from hard disk.

The ST mouse is converted to the PC standard Microsoft mouse, allowing software like Windows 3 to be easily used. When your fake PC is set up as you want it, the changes are saved to the main AT Speed program.

Sadly, AT Speed can't use the new high density 1.44Mb floppy disks which are beginning to appear on the ST, although the 5 inch external floppy disk is supported. The mouse takes up the only available serial port, and so using either serial printers or a modem is impossible.

PRACTICALLY PERFECT

AT Speed is really only practical on a machine with 1Mb of memory or more. Although it will run on a 520, once the emulation software has been loaded there's hardly any memory left for PC programs.

Assuming a 1Mb machine is used, once all the configuration options are set, AT Speed can use 704K of memory under DOS. A real AT can only use 640K due to the way the PC was designed.

Any extra memory on the ST above 1 megabyte can be configured as either extended or expanded memory. The way this memory is set up depends on which programs you intend to run under emulation.

Because of the way the ST deals with memory, your emulated PC will never have more than about three and a half megabytes of memory. This is enough for most applications, but multi-tasking under Windows 3 can quite easily eat up 16 megs or more.
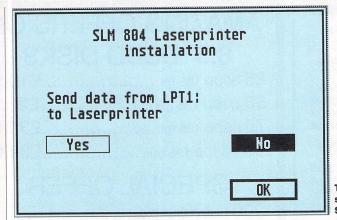
SCREEN MODES

The PC has always suffered from having a multitude of possible screen modes, from the text-only MDA, right up to SuperVGA offering a palette of over 16 million colours. This is likely to cause a number of problems when choosing software.

Before AT Speed was released, emulators could only offer Hercules, a black and white graphics mode, or CGA giving a limited four colours on-screen.

AT Speed breaks the general mould by offering the superior 16 colour EGA mode and monochrome VGA. But running a VGA screen reduces the DOS memory to 640K because the extra RAM is needed to deal with the better screen display.

There can also be a slowing down of some of the screen operations such as scrolling.

SLM 804 Laserprinter installation

Send data from LPT1: to Laserprinter

[Yes]   [No]

[OK]

The Atari laser printer is supported directly by AT Speed, making printing easy

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SET THE STANDARDS

PC screen display standards can be confusing, especially since there are several in common use. As the PC has evolved IBM has put a lot of time into improving its graphics, with the result that display standards proliferated.

PC software often comes with special screen drivers to let it run off different display cards, which can make emulation difficult.

MDA – Monochrome Display Adaptor. This is the original, text only black and white display. Most software supports this mode.

Hercules – This is also a black and white mode which offers some graphics and higher resolution.

CGA – Color Graphics Adaptor. A four-colour low resolution mode. Virtually obsolete on real PC's.

EGA – Enhanced Graphics Array. Sixteen colours on-screen and higher resolution than CGA. The minimum standard for a modern PC AT machine.

VGA – Video Graphics Array. This offers 256 colours on-screen from a palette of 16.7 million at high resolution. It is without doubt the best PC graphics standard and is downwardly compatible with both the CGA and EGA modes.

This is simply because the emulator has considerably more work to do. Like many emulators, AT Speed is at its best on an Atari mono monitor because of the increased vertical and horizontal resolution of the screen.

The colours that would be displayed on a normal PC are mapped to shades of grey on the ST. Although colour would be nice to see, the ST's video hardware just isn't up to it.

Colour users can get the emulator to work in medium resolution, but it's better in mono. AT Speed isn't really usable on a TV.

Because of the difference in resolution between the various screens, some scrolling is needed. The Hercules screen emulation requires scrolling from right to left and a VGA screen must be scrolled vertically.

These scrolling functions are mapped to the bracket keys on the keypad, to be used in conjunction with other key combinations.

Sack Electronics have done a lot of hard work on the PC screen emulations. If you have an ST that's been fitted with the Hyperscreen overscan modification then you can see the whole of a VGA screen at once. Compo are also looking at the possibility of including support for large screen cards like the MGE and Reflex large screen displays.
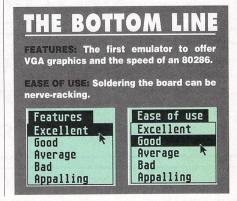
STOP PRESS!

IBM have just launched two new PC machines, with yet another graphics standard.

Marketed under the names of PS/2 models

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90 and 95, they use the Extended Graphics Array – XGA. Claimed to rival the 24-bit colour of the Apple Macintosh, this is the most sophisticated graphics standard which has yet been developed for the IBM PC.

Details are still scarce, but it looks unlikely that any of the popular emulators will offer XGA in the future. The ultra-high resolution display requires not only special monitors but also graphics driver cards to work – both of which remain way beyond the scope of any of the current emulators on the market.

Product: AT Speed
Price: £179 – £199
Supplier: Compo UK
Telephone: 0480 891819

THE BOTTOM LINE

FEATURES: The first emulator to offer VGA graphics and the speed of an 80286.

EASE OF USE: Soldering the board can be nerve-racking.

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

Perhaps the most powerful feature of the Atari ST is its ability to suspend the operation of one program in order to allow access to a set of utilities known as Desktop accessories – for reasons which will become clear as you read on...

Imagine you're sitting at your real-world desk calculating the yearly accounts for your rodent import/export business. Working out a VAT return on the sale of 27 million rats to Iraq is more than even your analytical brain can cope with, so what's the solution?

YOU'RE SUSPENDED

You don't abandon the process but suspend work on it while you open a drawer, pull out a calculator then carry on with the calculation. Minutes later, you have a result and you're then ready to carry on. Simple, right?

Desktop accessories are directly analogous to the calculators, rulers, rubbers and so on of the real world. You may, for instance, be working with your favourite word processor, discover the pressing need to include some useful figures with your text... But horror! There isn't a calculator to hand and your mathematics ability only extends to counting in single figures. What are you going to do?
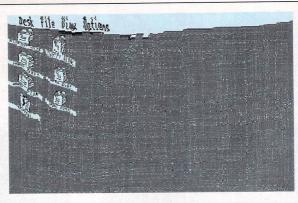
Simple. Move the mouse pointer over to the Desk menu – remember that one? It's at the far left of the menu bar. Drop the menu down and you have instant access to a calculator installed during the boot-up process.

The word processor you were using remains in the memory, but its operation is suspended for the moment while you use the calculator Desktop accessory – or 'DA' as they're known – to calculate your figures.

When you've finished, a simple click of the calculator's close box returns it to silicon

Right: Pretty funky, hey? Harmless though – the screen's only melting

Below: The calender is one of the most useful DAs

oblivion and enables you to resume word processing. You'll find that once you quit the calculator, nothing has changed and you'll be back at the exact place in the word processor from which you left. It's that easy!

STANDARD DAs

You're not restricted to using calculator Desktop accessories of course. The point of the DA is that you have access to useful little utility programs whenever you need them – including when you're already using other programs. But DAs that might be helpful for

one user, such as a comms program, might be totally useless to another.

You'll find that there are as many different Desktop accessories as there are programmers to create them. There's an Aladdin's cave of natty little utilities to help you out of tight spots, or just to while away the time.

The ST is accompanied by several standard Desktop accessories including a VT52 terminal emulator, an RS232 configuration control panel and a printer installer to get the most from your printer.

The VT52 emulator is just that – a straight hack of a VT52 terminal which enables you to connect up to a variety of hosts which support VT52 via either a null modem cable or the telephone lines.

It isn't very sophisticated – basically, it's a blank screen with a copyright message and instructions to return to the Desktop, or configure the baud rate and other settings of the

This month, a move to the far left of the menu bar to discover the exciting world of Desktop accessories

ABSOLUTE BEGINNERS

terminal. But it's simple to use and configure, and immensely valuable if – and this is true of all DAs – it's just what you require at that particular time.

If your computing requirements are for communications via telephone lines and a modem, then the RS232 configuration DA is a must.

Although most comms programs have their own configuration option, many are swamped by unnecessary functions. This DA version however, is incredibly simple to use and fully self-explanatory.

PERFECTION IN PRINT

The Install Printer Desktop accessory enables you to configure the ST to suit your printer and provides options for printer type, print quality, selecting a port to drive the printer, choosing paper type and so on.

Dozens of other DAs exist covering every aspect of computing and the best place to look for them is the public domain.

The Goodman Enterprises public domain catalogue for instance, has many Desktop accessories including a text editor/mini word processor, XUtilities, a multi-function utility program, slide shows, games including Reversi and many, many more.

Each Desktop Accessory disk contains dozens of DAs and for a pound or two, you'll have plenty to explore. Take a look at our public domain pages for the addresses and telephone numbers of suitable suppliers.

Installing Desktop accessories is a breeze. DAs have the name extension .ACC and to install them, make sure those you want are present on the disk you use to boot the ST.

If they aren't, simply copy them to the root directory. The next time you boot up the ST, just drop down the Desk menu and there will be your DAs, ready for use.

Here's a tip. If you get fed up with certain DAs, or decide that you temporarily need the RAM they would otherwise occupy, don't trash them from the disk or bother to copy them elsewhere. There's a better way.

DISAPPEARING ACCESSORIES

Simply pull down the File menu after clicking on a Desktop accessory you no longer need and select the Show Info... option. Click in the Disk Label field and flip the last C of the .ACC extender to an X. Click OK when you're finished. The DA will be renamed to .ACX.
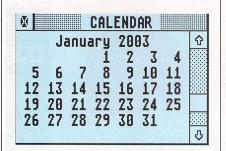
Now reboot the ST with the same disk. This time however, after booting, you'll see that the renamed Desktop accessory is no longer available under the Desk menu. This is because the ST recognises DAs by their .ACC filename extender.
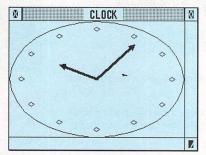
All those the machine finds on a boot-up disk with this name will be loaded into memory and become available – a maximum of six. By renaming the accessory to .ACX, the ST can't recognise it and so it won't be loaded.
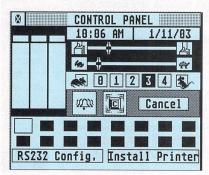
When you want to start using the DA again, rename it back to .ACC. Reboot the machine and the DA is available under the Desk menu. Simple, huh?

At any one time, you're limited to having six installed DAs. This is because the code for Desktop accessories is held in memory from the moment you boot-up the ST, rather than being brought from disk when needed – which would have been a much more elegant solution.
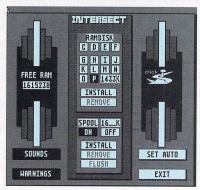
Ah well, you can't have everything but this does ensure that the DA is quick to appear when you want it. There is a problem, how-

ever, in that with large DAs a lot of valuable RAM memory is used up.
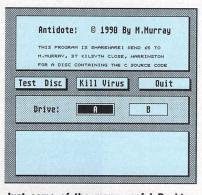
Six DAs installed and one more you're itching to use? Don't sweat it! There are several programs available which enable you to use more than six Desktop accessories at a time.

There's a program in the public domain – available from Goodman Enterprises among others – which allows you to choose which set of six DAs to load on boot up.

This means that you can have several sets prepared for different situations. You might, for example, need one set when you're using a modem, another for use with business applications, or a set of games and puzzles to pass a few quiet moments.

After booting, you're presented with the available choices and installing a set is a simple matter of selecting it.

A FEW OF THE BEST...

MultiDesk by Charles F Johnson from Code-Head software, is one of the 'multi-accessory install' programs outlined above, and after using it you'll never want to go back to a limit of six again.

The utility installs just like a normal DA. But select it from the Desk menu, and you're presented with a simple dialog. By clicking the relevant buttons, you can create accessory 'set-ups' and store them on disk.

Now whenever you want a particular DA or set of DAs, pull down the MultiDesk accessory from the Desk menu and click Load Setup. The accessories contained within that setup appear on MultiDesk's file selector list. To use an accessory, click on it.

When you've finished using the DA, quit it and you'll be returned to the MultiDesk dialog. You can then load more setups, chose another accessory or quit altogether and return to the Desktop or an application.

Included with MultiDesk are several Desktop Accessories which are pretty good in their own right. A useful calendar and an excellent analogue clock are two of the first in the example setup which is shown at left.

MELT DOWN!

There's also the brilliant Melt! – an ingenious fragment of code which does nothing more than make your ST's screen melt into a liquid goo and slide down the screen!

Don't worry though, because its effects are not permanent. A click of the mouse button at any will return your display to its usually rigid self. Melt! is one of those bits of code which are entirely useless, but which you'll get a lot of fun from watching and showing to friends time and time again.

Next on the list is TI59, a breathtakingly comprehensive scientific calculator for the propeller heads among you whose chief enjoyment is working out complex integral calculus – although it's perfectly employed figuring out the odds on Mayflower in the 2.30 at Haydock Park as well!

Functions covering every possible aspect of difficult sums are somewhere to be found on TI's fully-featured keyboard.

All of these Desktop accessories are available from the public domain as well as with MultiDesk so you don't have to buy the latter in order to avail yourself of the former, but you'd be hard pressed to find something better to spend a few quid on.

● *Next month, we'll explore the ST's system of disk drives, both floppy and hard, but until then, have fun with those DAs!*

Just some of the many useful Desktop accessories available for the ST

JUST FOR FUN!

Win a copy of the superb new DTP package PageStream. We're giving away five copies, and all you have to do is complete this easy-peasy word grid...
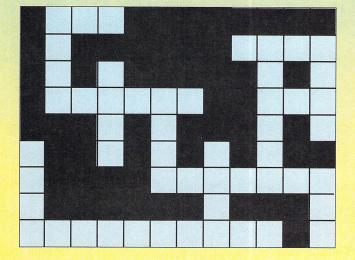
PageStream is one of the latest desktop publishing packages from the States. And to celebrate its arrival in the UK, Soft-Logik Publishing is giving *Atari ST User* readers the chance to win one of its Pagestream packages – each is worth £150.

To stand a chance of being one of five lucky winners you have to fit the words listed below into the grid at the bottom of the page and send the entry to: *PageStream Competition, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP.*

Fit the following words into the grid: **GEM, JAM, CLIP, RAM, CROP, FONT, GDOS, PAGE, SIZE, TYME, OBJECT, SEARCH, PRINTER, PAGESTREAM.**

And now, prepare yourself for a publishing first,

ASPECTS
OF THE

as Atari ST User brings you seven special pages

devoted to your very own favourite ST subjects.

ATARI ST

There's something for everyone – every month.

MIDI and music from the Rock, Cubase V2 — yes it's even better than before! Also compact disc copy cats...

The Drumbeat 8 program which is available with both the Replay VIII and Pro samplers

Replay VIII Main Edit screen. The editor in this program is very similar to that in Pro

The ST has by far the best selection of MIDI music programs available for it, and is almost invariably the professional's choice of music computer.
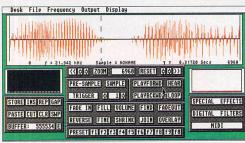
It's also widely used for sampling by general users. One such user is Stuart Santos of Gibraltar who has written to ask about the various Replay samplers.

ST Replay was one of the first samplers to appear. It was designed by the boys at AVR and distributed by Microdeal. The sampler has undergone several enhancements and updates since its first release.

The current state of Replay samplers is this: the latest version is Replay VIII – even though the program hasn't been through eight versions – with a RRP of £79.95. It's similar to the previous version, Replay IV, but has updated software.

The editor is close to the one in Replay Professional – RRP £114.95 – with the exception of some digital filter functions. Both work with 8-bit samples.

PLAY IT AGAIN

Replay VIII has a two-voice drum editor which means two drum samples can be played at the same time.

Pro has a 12-bit DAC – Digital-to-Analogue Converter –

although only 8-bit samples are outputted. It can however, play four at once. The drum editor therefore, can play four sounds at the same time.

Some reviewers have this wrong and think that because it has a 12-bit DAC it handles 12-bit samples – it doesn't!

Replay Pro also contains a MIDIPlay program which lets you trigger four samples from a MIDI keyboard.
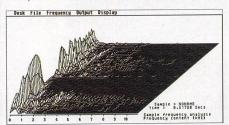
MasterSound 2 has actually been available for a while from another distributor, but it has been updated and is now handled by Microdeal.

It's the budget-priced member
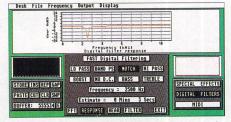
of the family at £39.95 and is the only one supporting the STE's sound sockets – although the others run perfectly well on the STE. This is just as well because the sampling cartridge doesn't have an audio-out socket.

Pro is the most sophisticated sampler and the one to go for if you can afford it. But if you don't want to play more than two samples at once you'll get by very well with VIII.

If you have an STE and/or are on a budget then why not check out MasterSound 2. More info from: Microdeal, PO Box 68, St Austell, Cornwall PL25 4YB. Tel: 0726 68020.

FFT (Fast Fourier Transform) – 3D – display of sample in Replay VIII and Pro

The digital response of the notch filter in Replay VIII and Replay Professional

The MIDI Play program which is available with the Replay Pro sampler

COMPACT DISC COPY CAT?

Rumour has it that both Sony and Matsushita – the company behind Technics and Panasonic equipment – are planning to include MIDI data in the sub codes of their CDs.

This would allow users to play the music, or at least part of it, on their own equipment!

Quite why you might want to do this isn't exactly clear – suggestions to me at the editorial address, please.

But if the data accurately reflected the contents of the disc, then backing tracks, identical in notes at least, to the original could be created. It's not something record companies would encourage.

NEWS ROUND-UP

● Do you have a Roland D5, D10, D110 or D20? If so, how would you like to swap some sounds? Yes, I thought so. Tony Eve is the new secretary of the Swapping Club (sounds only, not partners I'm afraid!).

Show him yours and he'll show you his. Send a disk or card containing sounds of your own plus an sae to: Tony Eve, 130 Wingfield, Orton, Goldhay, Peterborough PE2 0TJ.

● If you possess one of Roland's amazing E-series instruments – the all singin', all dancin' keyboards with umpteen-piece orchestral rhythmic accompaniments – you may already know about the range of Quasi-MIDI add-ons for them.

New is the QM-E-20 retrofit kit (£179.99) which can be fitted in about half an hour by a qualified technician. ST users, however, also receive a free program which gives access to all the voice parameters and saves edits to disk. More from BCK on 04024 48799.

● A metronome you can't hear? It's not as daft as it sounds.

The MIDI Metro is a digital metronome using flashing lights to keep the beat. It's housed in a 1U high rack and the lights sweep from one end of the unit to the other so you can anticipate the beat.

Uses? Ideal for anyone, drummers in particular, who would normally follow a click track. It's MIDI-compatible too, so it can follow a sequencer. It costs £275 from Q-Logic, East Haugh, Pitlochry, Perthshire, Scotland PH16 5JS. Tel: 0796 20001.

● MIDIGrid, which is the alternative sequencer program developed by a group at York University and reviewed in 'USER way back when you were just a bairn (that's York talk for kiddie), has been developed further.

It's on sale for the princely sum of £299 through Dawsons Music, 65 Sankey Street, Warrington WA1 1SU. Tel: 0925 32591.

NAME CHANGE FOR BMF

The BMF – British Music Fair – has changed its name to the International Music Show to reflect its broader product range and new direction.
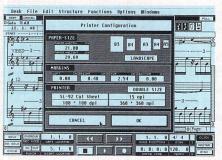
It now embraces any product or service which is related to music from anywhere in the world.

The 1991 International Music Show will take place at Olympia in London from 10-14 July. Friday 12 July is 'Education Schools and Orchestras Day' and will welcome teachers, pupils and parents.

The following two days will feature lots of live entertainment and competitions.

A report from the 1990 show claimed that the number of visitors using computer software had doubled since the 1989 show. More from Westland Associates Ltd., 23a Kings Road, London SW3 4RP. Tel: 071 730 7852.

The order in which the parts in the Score Editor are displayed can be changed

The setting of the printer configuration in Cubase Version 2

One major, and valuable, addition to Cubase V2 is the ability to print the score

CUBASE V2 - THE UPDATE

Cubase, the father of Cubeat – which was reviewed in the January issue of 'USER – has been upgraded to Version 2. Ten changes are listed, along with a few bug fixes.

The main ones are: the ability to make a track transmit a Program Change number and MIDI Volume message from the Track List instead of the Parts Info box, and the Analytic Quantise function has also been improved.

Modules such as the Score Editor and the Dynamic MIDI Manager can be discarded to gain more memory for music; the order in which the parts are displayed in the Score Editor can be changed; enharmonic shifts can be made; and finally rests can be deleted.

But the two major additions are the ability to print a score, and the IPS – Interactive Phrase Synthesiser.

There are also 60 pages to add to your manual. These include new contents pages but the index hasn't been updated.

IPSO FACTO

The IPS is a sort of algorithmic composition assistance routine (still with me?). The IPS screen may seem complex but it consists of several modules which interlink. It uses for its raw material the contents of one of Cubase's tracks.

This is combined with input from a MIDI keyboard to modify the phrase. The exact nature of the output depends on the settings in the IPS modules.

To take a simple example, the note played on the keyboard can be used to transpose the phrase.

The result is then fed into other modules to change the dynamics, pitch and rhythm using LFO settings such as Ramp, Triangle, Mirror and Random. These basically determine the order in which the events in the phrase will be played.

MAJOR MINOR

One function lets you play the music in one of 20 scales – major, minor, blues, oriental and so on. This can radically transform the character of a piece and makes for fascinating listening on its own.

Although most of the results are transformations of existing material – as opposed to random event generation – a couple of Modulators can be used to add a degree of randomness to the procedure. The results produced by the IPS can be saved back into a Cubase track.

Although the IPS may not be to everyone's taste I enjoyed using it immensely. It probably won't turn out any hit tunes, but make no mistake, musical results are quite possible. Remember though, that extreme setting will tend to produce, er well, rather extreme music.

PRINTING

The Score Editor now has a Page Mode in which the staves are truncated and appear exactly as they would on the printed page. Music symbols include crescendos, diminuendos, slurs, coda, accent, pedal and dynamic markings.

Text can be entered in different sizes and several fonts are supplied on disk, although you only seem to be able to use two for text.

The frequency in which the bar numbers are be printed can be stipulated and the page number of the the first page can be set, allowing a score to be printed from several files.

There are 16 printer drivers which cater for eight types of printer. You can select paper sizes ranging from A5 to B3, and have a choice of landscape or portrait orientation.

Two print speeds are possible. The result is clear, even on a humble 9-pin dot matrix printer, although I would have preferred the scale to be just a little larger.

The updates to the Score Editor are welcome, but this is still the weakest area – compared, for example, to the score writing facilities of C-Lab's Notator.
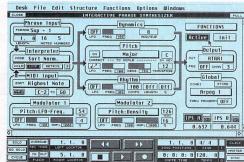
The IPS however, is a fascinating option, well worth exploring and capable of producing some genuinely musical results.

Cubase's user interface, allows the creation of songs by dragging sections of music around the screen – an absolutely brilliant way to work. This is one of the state-of-the-art music programs for the ST.

The Cubase Version 2 upgrade is free to registered users. The complete program costs £550. From: SDL (UK) Ltd, Unit 10 Ruxley Ind. Estate, Edgington Way, Sidcup, Kent DA14 5SS. Tel: 01 300 3399.
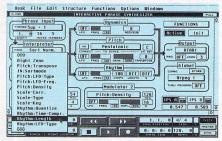
The Score Editor in Cubase V2 can be discarded in order to obtain more memory if required
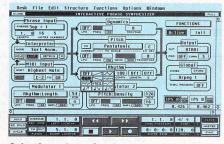
The IPS – Interactive Phrase Synthesiser – is the second major addition to the program

Selecting a scale in the updated Interactive Phase Synthesiser

Selecting an Interpreter function in the IPS in Cubase V2

Selecting a 'waveform' to control the rhythm in the IPS in the updated version

Try puzzling over these educational packages...

Mention educational software to kids and the reaction will probably be: "Boring – I want to play games!". But educational software can be just as much fun if it's presented in the right way, which is exactly what SoftStuff (0732 351234) have done with their Puzzle Book series. Both of the Puzzle Book packages are reasonably priced at £19.95.

PUZZLE BOOK 1

Puzzle Book 1 consists of six different games designed to teach, test or develop a particular skill. The difference between these and other educational games is that the learning element is hidden away behind the gameplay.

This approach is a refreshing change from the animated textbook style of so many other offerings – and the kids certainly appreciate it.

The star game in Puzzle Book 1 has to be the maze which puts you in a Dungeon Master-style screen and sets the task of finding your way out. To help, there is an on-screen direction indicator and a map which can be called up for help.

Converting the 2D route to 3D is quite an effort for those who are unsure of compass directions. At higher skill levels the compass and map are unavailable. This game proved challenging for all ages, ranging from six to adult, and proved very popular all round.

SQUISHY ROBOTS

Another game which challenges adults just as much as children is Robot Nim. Here the idea is to squish the last of three rows of robots. As a logic problem it had me tearing my hair out – the computer consistently beat me even on the easier levels.

The maths offering is Magic Squares, 3 x 3 and 4 x 4. The computer places some of the values in the square and leaves you to fill in the rest from a set of numbers. The total in each direction must make 15 (34 in the larger square).

On lower levels the calculations needed are well within the capabilities of late infant and early junior children, while higher levels will tax even the most mathematically-minded adult.

WORDS WORK

English is covered in Wordhunt in which the idea is simply to make as many new words as possible from the letters of another.

On the lower levels the computer tells you how many words it has found – from a 30,000 word dictionary – together with a running total of the number of attempts made and successful words.

Entry is by either keyboard or mouse, the latter option giving only the available letters and not allowing them to be used more than once.

The other two games, Clock Patience and Reaction Timer didn't go down so well. Everyone felt they were there more to fill space than anything else and a couple of attempts at each was enough to prompt the call for something else.
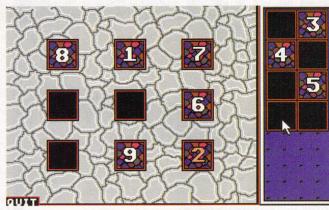
PUZZLE BOOK 2

Puzzle Book 2 also consists of six games with a variety of themes. The most popular among the children was Balloons which is a type of hangman game in which a caterpillar (I think) blows up balloons each time the wrong letter is chosen.
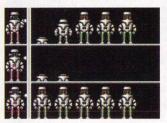
These then float gently across the screen until there is no more room. If the word has not been guessed, all the balloons pop one after the other and the word pop appears inside the exploding balloon.

One drawback with this game was that watching the balloons pop seemed more popular than trying to finish the word.

The second favourite was Blow Up Buddy which features the same character as before, this time holding a bomb to which is attached a long winding fuse. At intervals along the

fuse the burning is stopped by multiplication questions which range through the levels from 1 x 1 to 99 x 99.
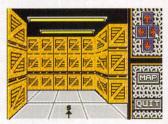
There is a time limit for answering – either running out of time or getting the question wrong loses a life. Reach the end of the fuse and Buddy is pathetically blown up.

ANAGRAM MAGIC

Numeric Anagrams shows a sum which contains some blank spaces. Above this are the numbers and symbols to be inserted. I found this quite difficult until I realised the selection could be shuffled around – and that minus numbers are also covered.

Pentominoes is for jigsaw fanatics. Various shapes, each made of five squares, must be juggled and flipped around to fill a larger shape. This orientation puzzle is used in many schools and is very easy to play while difficult to win.

Pipeline is based on the game of Mastermind, but while animation was good, I found it confusing to play and not up to the user-friendly standard of the rest of the games. Again, a card

game has been included – this time straight patience – which doesn't really seem to fit the theme of the package.

PLAY THE GAME
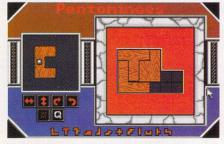
The standard of packaging is good and the manuals brief but clear. I'm still a little unsure about some of the spelling in the manuals – such as 'national coriculum' – but this doesn't seem to have carried over into any of the games.

Both packages cater for the whole family – the age range is advertised as 4 – 90. But I feel that younger children will find most games too difficult, even with parental help.

I'd suggest that the youngest children should be allowed to try it first, but if older members of the family want a go, the younger ones will enjoy watching the imaginative animation and listening to the simple but effective sampled sound.

ADDRESS

SoftStuff Software
19 Quarry Hill Road
Tonbridge
Kent
TN9 2RN

Magic Squares. Teaches and improves mathematical skills

Robot Nim will challenge adults and children alike

The maze is the most appealing game in Puzzle Book 1

Pentominoes is an orientation game – perfect for those who like jigsaw puzzles

The object in Numeric Anagrams is to insert numbers and symbols to complete a sum

Pipeline, which is based on Mastermind, is not as friendly as the other games

HOT COMPRESSION

Shave pounds off every online session with this month's money-saving special...

Probably the most difficult thing to learn when getting to grips with computer communications, is how to avoid paying enormous telephone charges.

We've all read of the near-fatal shocks some comms enthusiasts (or their unsuspecting parents...) get when BT delivers its quarterly horror story.

You know the stuff, "...Mr and Mrs Blenkinsop thought there must be some mistake when British Telecom sent them a bill for £785.58. The only mistake of course, was to have bought their computer-mad son Johnny a modem for his birthday..."

Do you simply have to live with the fact that you're hooked on a hobby that requires you to dig deep into your pockets once every three months, or is there something you can do to avoid the massive charges?

Well, there is something you can do, several things in fact, which will significantly cut back the amount you have to spend in order to contact your favourite bulletin board.

SPEED FREAK

The most obvious is to buy the fastest modem meagre funds will allow when you're in the marketplace for a modem.

It may seem like a good economy buying the silicon equivalent of two tin cans and a bit of string, but in the long run you'll pay a lot more.

If you can stretch to it, buy a modem that provides V22bis (2400/2400 baud). Try a V22bis modem after watching some

1 A comprehensive selection of options provides access to efficient archiving and unarchiving from LHARC and ensures easy access for novice users


```
a D:\TEST.ARC D:\RETOUCH2.PI3

Creating new archive: D:\TEST.ARC
Adding file:   RETOUCH2.PI3   analyzing,
```

2 Archiving in action. Fast and reliable and with the minimum of fuss. Simple on-screen messages keep you abreast of progress

little acoustic coupler plotting 300 bits per second across your ST's screen, and you'll think the former is flying!

OK, I admit that maybe an acoustic coupler is stretching it a bit, but you'd be surprised what's still out there being hooked up to the PSTN.

A 2400/2400 modem needn't cost you the Earth, either. One

really good buy is Amstrad's excellent MC2400. This quad speed, Hayes-compatible baby is available at well under £200 and is one of the best 'cheap' modems around.

You'll find that practically every bulletin board in existence provides 2400 as a working speed so make use of it whenever you can.

A file compression utility is an absolute must if you're going to use a BB. Archiving utilities became popular on the IBM PC where the grandaddy of them all, ARC, received extensive use.

There are many excellent compression programs for the ST, most compatible with ARC and with a friendly front-end so that you don't have to remember complex command strings for a TOS-takes-parameters dialog in order to use them.

One of the best is LHARC – see Figures 1 and 2 – which is fast yet simple to use. The program has a sensible operations screen with a variety of buttons to cover every eventuality.

WHAT'S NEXT?

You should always download any help files that are available on the BBs you like to use. Sure, you want to get at the free software or the messaging areas, but read through the help files and you'll probably find a wealth of shortcuts to whizz you around the board and cut your online times by half.

Most boards have an 'expert' mode which switches off verbose online messages and menus and enables you to hack in single letter commands.

In a similar vein, always prepare mail offline on your word processor then upload it when you have access. And remember to download mail so that you can read at your leisure instead of ticking away those precious online minutes.

PILLOW TALKER

Perhaps the best bit of advice is never to contact any bulletin board or public information service during the day.

Might sound obvious, but many enthusiasts simply can't resist the desire to get online, and are calling up from early in the morning to last thing at night.

The majority of big 'public' services have significantly increased access rates during the day in order to relieve business users of even more cash. The unwary home punter however, can easily be

caught up in this web of extra and unnecessary expense.

Restrict your access times to after six o' clock in the evening. At that time, British Telecom lowers its charges for local access – a bulletin board across town perhaps – and you might pay less than 60p for an hour's worth of online antics!

If you live in any of the bigger towns or cities, you're sure to find a good board within the local call charge band.

You might even make new friends this way, because it's pretty

difficult to meet those with whom you 'chat' nightly, but live several hundred miles away from.

Even long distance calls are heavily reduced compared with daytime charges – mainly because the business user is offline in the evening. So Glaswegians longing to call London can do so safe in the knowledge that a 10 minute call won't break the bank. And if they follow the suggestions outlined above, they'll be able to cram an awful lot of activity into those few short minutes...

A neat trick with the Macintosh clipboard, plus a health warning about Spectre GCR in colour...

Switching regularly, often daily, between the ST and Mac Desktops, I have no doubt about which feature in Apple's Finder I miss most sorely upon returning to GEM – the clipboard.

It's hidden in the Edit menu of virtually every true Macintosh application, and takes the shape of the Cut, Copy and Paste commands found there.

Select any text or graphics from your current file, cut or copy it to the clipboard – Copy leaves the file intact, while Cut removes the selected item from it. You then have the ability to paste it back into the same file or into any other Mac program as often as you like.

COMMONPLACE

On the ST, by contrast, the same can only be accomplished if you can find a common file format supported by both the source and the target program. This is not always an easy task, given the proliferation of graphics formats in particular.

The omission of this vital feature by Atari is surprising, especially when you consider that its implementation would have required little more than a few hours of programming – the operating system already provides for clipboard functions.

Owners of Spectre GCR however, should be aware of some of the uses for the Mac clipboard. Take graphics, for example. The Mac is nothing if not a graphics computer and many ST users will have decided to

buy Spectre simply to gain access to the excellent illustration packages which are available on the Mac, such as Adobe Illustrator and Aldus Freehand.

There is nothing, as yet, to match the power and elegance of these programs on the ST, but transferring any pieces of artwork created with Illustrator or Freehand to the ST environment is far from easy because they produce PostScript files.

MAC TRANSFERS

The only ST program I know of which can import PS files is Fleet Street Publisher, but even FSP can't actually display, let alone edit them. The obvious answer is to transfer the Illustrator or Freehand files to a Mac application which is capable of writing one of the Macintosh bit-image file formats supported by a number of ST programs, such as MacPaint or TIFF.

The simplest way of achieving this is by a neat, and not very well known, trick: when copying selected items from an Illustrator or Freehand image to the clipboard, holding down the Option – Alternate on the ST – key will convert the clipboard image to the PICT format, which just about every bit-image paint program will read.

Load such a paint program, open a new file, paste the clipboard into it, and save the whole thing as MacPaint or TIFF. You are then ready to transvert it to the ST environment.

COLOUR SPECTRE

Much as I enjoy the voluminous mailbag addressed to the Emulation page via Interactive Towers at Macclesfield, I must stress that I can't, unfortunately, undertake to reply personally to every letter.

Life is just too short to spend it entirely in front of the keyboard, and although I do make the odd exception in idle moments, a reply on this page is all you are likely to get – if you're lucky.

I do my best, but please be patient and do not bother to enclose SAEs or bribes. Well, certainly no SAEs. But as for the latter…

Now that's off my chest, and staying with Macintosh emulation, here is my considered response to Maurice Pearson from Caithness, a General Medical Practitioner running an HP Vectra with 80 megabyte hard disk multi-tasking under Unix.

He's not content with such a limited set-up and so also invested in a 1040ST. Maurice would like to know if Spectre will run on a colour monitor and Triangle hard disk.

The answer is yes, it does work in colour, but only very poorly: you either get half a screen only, or the full screen barely readable – a true optician's delight. It's also quite

slow and far from smooth, so it's best to invest in a mono monitor if you intend to use Mac emulation seriously.

The monochrome picture is truly excellent – if you wondered, for example, why the Mac screenshots on this page appear truncated, it's because the Mac screenshot utility can only cope with ordinary Mac-Plus screens and the ST's mono display is much larger!

As to the Triangle hard disk, I can see no reason why it shouldn't work. In fact, I seem to remember having tried out one of these beasts myself with Spectre and not having any problems. It's probably safest to first check with the manufacturers or distributors.

Finally, Maurice asks about software bundled with Spectre: "I read about System and Finder files. Are they in ROM?" Well, you get a disk full of useful Mac PD utilities, and the Transverter program to copy Mac files to ST disks, but no System or Finder?

Some of the operating system is indeed in ROM – which can be bought ready installed in the Spectre cartridge – but for the System and Finder files you will have to 'milk' a friendly Mac in the neighbourhood, or perhaps sweet-talk an Apple dealer.

After exiting from Freehand, you can check from the Desktop – using the Show Clipboard function – that our fishy friend is still there. Powering down the computer will lose the image, of course. To guard against such incidents, use SmartScrap or a similar utility

The trout in Aldus Freehand attempting to leap from the Mac to the ST, but it's unable to cross the PostScript barrier. Alternate-Control-C will copy the picture to the clipboard as a PICT file, though. The same trick also works in Adobe Illustrator

Having pasted the trout into SuperPaint it was saved as a MacPaint file. The picture was then transverted to a TOS disk and converted using TouchUp on the ST to .IMG format. The image ends up gracing a Fleet Street Publisher page

MIDI AND MUSIC ○ EDUCATION ○ COMMUNICATIONS ○ EMULATION ○ ADVENTURES ○ DTP ○

The crazed adventurer with one eye casts a baleful glance at the Adventure scene

I'm back, and to prove it I'm here. You know that I'm a great believer in 'breaking' rather than 'creating', (drink, violence and rock & roll have always worked for me!) but for those budding game creators among you who have purchased the **Talespin Adventure Writer** program I have some news.

An ex-comic book artist has produced a disk crammed with fantasy graphics which are very easily incorporated into your own creations. Talespin was pretty easy to use, but if you couldn't draw 'diddly-squat' the results were always naff.

Sending £6.99 to Deltronics PO Box 175, Carlshalton, Surrey SM5 2WA will get you a disk containing 4 megabytes of compressed ghouls, heroes and backdrops to mess around with.

The company is also in the process of creating an add-on for Talespin which will permit the use of numeric variables (numbers to you!) in the control of RPGs (statistics, hit points and more).

Anyway, if those Teenage Ninja Dipsticks can make a fortune, then there might still be hope for your brilliant creation.

Two of the evil enemies which can be created with Talespin

This is the kind of graphic which is complete fantasy!

WE HAVE THE POWER

Powermonger, the game from Electronic Arts is a lot like its previous game Populous, and no doubt it too will win lots of awards. Little people run around at your bidding, snow falls, winds blow and there are hundreds of game control icons – all of which defy you to understand what the hell is going on!

The game is sold as a thinking man's (or woman's) game, and I think that's a pretty accurate description. After spending hours with it for a few minutes, I too began to think; I thought that I should put it back in the box and go and find something interesting to play instead – that should get a few million reviewers

Powermonger fails to live up to Cyclops' expectations

howling loudly for my blood!

I'll grant you that it looks impressive and seems to have great depth. But like Populous, I found that the fun of kicking little guys only lasts for a short while before you drift off to find other worlds to conquer.

CROWNED PRINCE

Domark is a funny software house run by even 'funnier' people. Whilst I'd rather watch paint dry than play one of their James Bond games, I've got to admit that the combined arcade/adventure puzzler – **Prince of Persia** – is a bit of a gem.

Granted it's not strictly an adventure, but it has got puzzles – and you do get to kill people – so I have been giving it a good thrashing. The animation is as smooth as silk and the controls are easy and responsive.
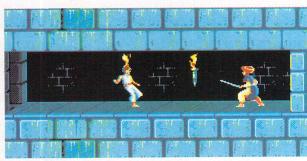
At first glance it doesn't look as flash as some games, but included is the secret ingredient which 99% of games don't have – playability. There's a bit of sword-fighting, and although the controls are pretty simplistic, chopping the bad guys is still very satisfying. Not too demanding on the grey cells, but lots of fun.

I have also received **Omnicron Conspiracy** from Mirrorsoft. On the box is the symbol identifying it as an Image-Works product. Whenever I see this symbol I automatically think of quality. This is the mark which is also found on great games such as Speedball, Xenon, Cadaver and so on.

Closer examination of the box however, reveals that the game is in fact a product of a company called **First Star Software**. Brief examination of the contents of the box reveals a dog!

So my question is this: whoever or whatever ImageWorks is, why are they throwing away their hard-won seal of quality by putting it on such games? Remember the early days when anything bearing the Virgin logo put a question on the quality? I think there is a moral in there somewhere.

That's it. I came, I saw, I kicked ass. Before I leave you and because I'm so nice, if you're still thirsting for more hints on Captive then turn to Trade Secrets in the games section where Nick will satisfy your desires. OK, I'm outa here.

Prince of Persia scores higher for playability than most others

SET YOURSELF FREE

I know for a fact that a few of you are in deep trouble with *Captive*. To help you all here are some of the answers:

The first is for those who can't get into the first star-base. Having opened the door you'll be faced with a wall on rollers, push the wall by clicking on the forward arrow with the 'right' mouse button.

The second concerns the powerzapper device. You are quite right, apart from zapping your own men, it doesn't have any use! The third concerns the fifth starbase. There's a hole in the roof of one of the corridors which doesn't have a ladder to help you get up through it.

Find the hole with the mapper device – it's two moves from a shop and next to a hole which has a ladder. Then use the anti-grav device to get there. Repairing armour in a shop which sells it is cheaper than in the one which doesn't.

Finally for those superheroes who have made it to Mission 2 Level 2 and cannot find clipboard number 15099, I have slaved over a hot art package and drawn the solution. Never say that I don't look after you ungrateful lot.

It should also be noted that

CLIPBOARD 15099

Direct from Cyclops is the clipboard you've been craving

I spotted Captive as a potential world beater before it won both 'Game of the Year' and 'RPG of the Year' in the recent British Software Industry Awards, not to mention a Tilt Do'r award from the French.

In recognition of being one of the 4 million gameplayers who know a good game when they see one, Mindscape has invited me to a private viewing of the next offering by Captive's creator. Fear not, as soon as I know, you'll know!

What do you think of Captive? I can't understand the addictive power it wields. There isn't the mystery and sophistication of Dungeon Master, it makes my eye and brain ache, but I'm damned if I'll quit until the final space station is smashed.

More on the missing letters saga. The type shows its true face and more clip-art

The choice of typeface is never easy, but the right one can make a dramatic difference to the look of a printed text and its acceptance by a reader.

While many readers won't know why, they will prefer one printed sample to another, even when the text is the same.

In most cases the best-liked document is the one with the better typeface. Font selection can also make a dramatic difference to the amount of text which can be placed on a page.

Various studies have shown that text is scan-read and that most information is picked up from the tops of the characters, not the bottoms.

See this for yourself by covering the bottom half of a line of text and trying to read it with only the top showing. Try the same exercise with the bottom half of a line and you should see how much less readable it is.

NEVER FORGET A FACE

Anything that can be done to improve the readability of letters will be most worthwhile at the top ends, and to a lesser degree the descenders below the line.

One way of making these extremities more visible is by accentuating them with blobs on their ends – serifs.

A body of a serif font such as Times Roman is readable partly because of its use of serifs. Variations between thick and thin strokes also make it easier for the eye to scan-read.

Notices, headlines and any text where clarity at a distance is essential will benefit from the use of a sans serif font – one without the added blobs – such as Helvetica. It's no coincidence that road signs, rail notices and airport directions are all printed in sans serif faces.

While rules are there for breaking generally it's best to reserve sans serif faces for small pieces of text, where legibility is important. Serif fonts are easier on the eye page after page.

The other factor which may not be immediately obvious is that some faces take up a lot less space than others. Changing from Helvetica to Times may save up to 10 per cent of the

NO PRINTS – TAKE TWO

Following on from Anna Dayton's letter on missing images from her DTP files, Chris Phelps wrote to express doubt over GST's suggested cause for this.

The idea that it might be shortage of memory is discredited by Chris' system, a 1040STFM with 2.5Mb of memory. Chris runs a Star LC10, while Anna uses an Amstrad DMP, so it wouldn't appear to be a printer problem, either.

GST's latest thoughts are that there are certain GEM problems with printing images smaller their original size. If this is the case, altering the aspect ratio or the size of the frame just slightly may correct the problem. Has anyone already solved this one?

Above: Select 'Preserve Aspect Ratio' and one of the whole pixel scaling options to reproduce a clip at scanned size. If you scale to a smaller size, as in the right-hand picture, you may have trouble printing it

WORDS AND IMAGES

Clip-art is still dribbling in – send a sample now and it's almost bound to get a mention in this column. The latest supplier is John Weller from Word and Images. He sent in two disks crammed with .IMG clips and a handy viewer to flick through them.
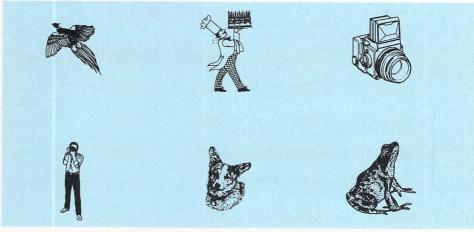
The images are all scanned by John from copyright-free sources. Disk one contains botanical engravings, frontispieces, medieval-style figures and the odd goat.

Disk two is rather more contemporary, with pictures of cameras, photographers, food, cartoons and a royal corgi. There are over 120 images in total on the double-sided disks and they have all been scanned at 200 or 400 dpi.

If you would like copies, send 22p for one disk or 33p for both, plus one or two blank disks respectively.

John asks if you could send more clips on the disks you supply, which would benefit all users of his service. He also has 35 disks of PD clips, details of which are available on request.

Words and Images are at 49 Haylett Gardens, Surbiton Crescent, Kingston, Surrey KT1 2ER.
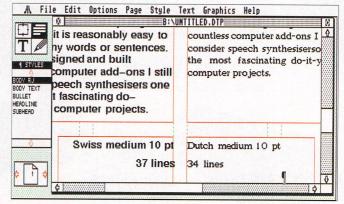
A wide variety of images are available from Words and Images for no more than a handling charge

space which is used for a given piece of text.

Times characters are far less rounded than Helvetica, so even at the same point size the text will take less room. If you are having difficulty fitting text in a given space, a font change may well be the answer.

I know of one company which published an English translation of a French book entirely on an ST. The page count was kept the same in both versions, even though French is a more verbose language. The savings were made purely by changing to a more 'economical' font.

Two identical pieces of text in Swiss and Dutch fonts. The Dutch piece is a full 8 per cent shorter

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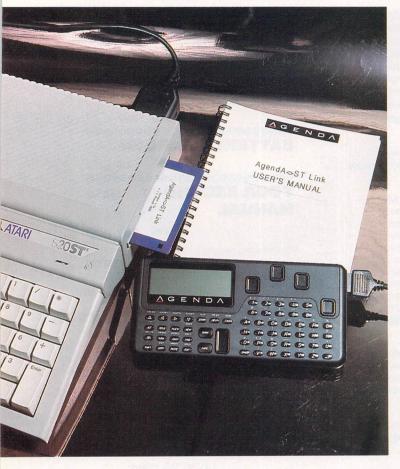
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CHOCKS AWAY CHAPS

With reference to S Dalby's letter on Their Finest Hour, I myself bought this excellent flight sim and encountered the same problems. The Mission builder program and the combat flights worked OK, but the campaign missions bombed out every time I shot an aircraft down.

So I sent off for the four single-sided disks and now I have no problems at all with the game bombing out. I suggest he/she tries the same…Tally Ho old boy, and watch your six!

Steve Pass, Stockton-On -Tees, Cleveland.

Well, you've heard the man. so S Dalby if you're still having the same problems you know what to do. Good luck with those missions of yours.

BROWNIE POINTS

I just thought I'd write to tell you about the particularly good service I received from a public domain library in my area.

I was surprised that there even was one, but I saw an advert in my local computer shop, and thought I'd give it a try.

I phoned for a free disk catalogue and promptly ordered some demo disks and a utility disk which seemed particularly good value. Imagine my delight when the very next day I received the specified disks. That was less than 24 hours!

Apart from the prompt service, the disks were unusually good quality and the contents were exactly what I had hoped for, and as a regular buyer of PD, I can tell you that's unusual

Apparently, this PD library is trying to promote PD in the Highlands and I reckon they've got off to a good start.

Anyway my point is that the disks I bought only cost me £1.75 each and the service was exemplary, so why can't I get that sort of service from other libraries?

Sometimes it's about a week before I receive anything from the larger ones. Is it because this one is new or because it only deals in ST PD?

Whatever, I recommend it to your readers, and if you want to give it a plug on me, go ahead. The name is Caledonia PDL, 250 Oldtown Road, Inverness. Tel: 0463 225736.

Davy Cameron, Killen, Ross-Shire.

We can't answer that question! We suppose it's the same as in any other industry – some are 'exemplary' and some are far from it. But we're pleased to hear that Caledonia PDL is doing such a good job.

WHAT'S IT FOR?

I've owned my 520ST for six months now, and use it mostly for playing games. I've tried to reboot it between games by pressing the reset button but it often doesn't work.

Can you explain why? Isn't that what the reset button is for?

J Davenport, Stockport, Cheshire.

Normally, this letter would be answered on the Interactive Rescue pages, but in this case we thought it was worth answering here, in particular because this month's CoverDisk illustrates the point perfectly.

If you try to boot up the demo Jupiter's Masterdrive by pressing

reset, it won't work. You have to turn the machine off and leave it for up to 15 seconds and then turn it back on again.

The brief explanation for this is that there is some kind of residual current within the machine which enables data to remain in the memory for a short time, even if the machine is switched off at its side.

And if the reset button is pressed, the memory is not cleared and the information interferes with the next program. This is particularly the case with games and demos.

ST SPOTTING

I thought you might be interested to know that Atari STs are currently gainfully employed within an automatic, self-service business stationery machine I've seen at Guildford Railway Station.

Lurking behind a conventional waist-high box with a colour monitor flush-fitted to the top surface I witnessed an unbadged 520/1040 ST, stood vertically on its front keyboard edge. The various peripheral boxes were not identifiable to me unfortunately.

Have any of your many readers come across similar 'workhorse' configurations of this so-called home computer? Anyway keep

up the good work; maybe a corner for computer programmers would once again be very welcome.

Robert Banbury, Liss, Hampshire.

Well? Anyone else care to add a 'sighting'? And for the more unusual uses for an ST, watch Closebox closely…

OVER AND OUT

Thanks for producing such a great magazine for my ST but I do have one complaint: the bogus software companies that are around and advertise in mags such as yours.

I have responded to a Softsellers advert over a month ago but still have not received what I ordered. I even rang up their company but got no answer. I very much doubt I shall see my money again.

Perhaps you could check out all the adverts before you print them to save readers being disappointed? Apart from that, keep up the good work.

Peter Cotton, Oxted, Surrey.

Unfortunately, we don't have good news for you. Softsellers has been placed in the hands of receivers. Our news story on Page 10 has the details about who you should con-

ADVERTISERS' INDEX

tact for more information.

As for checking out advertisers before placing ads, we do try to ensure that the company is reputable. But there's no way we can predict that a company is about to go into liquidation – much as we would like to warn you.

And we can't print anything which might unfairly prejudice readers against a company. We have to be very sure of the facts before we go to print.

What we can do though is keep a record of complaints received against certain companies. These go to our advertising department who do their best to check them out.

It might not be what you want to hear, but it's the best we can do.

DOWN UNDER

Just a brief grizzle about a practice that crept into 'USER a while back. It may be quite convenient for home-grown readers to just 'phone the software suppliers your magazine mentions but for us 'down here' it is not so. Our clocks are 'wrong' and it is very expensive.

Your practice of only giving phone numbers and not addresses is not helpful for us when we want to track down some software. I have given up trying to get Molgraph through regular channels here.

Please publish a contact address for 'ST Club' who produce this item.

I still think the magazine is great but I – and I am sure most of your other upside-downers – would appreciate some consideration for your wider audience.

Geoffrey A Pearson, Blenheim, New Zealand.

Point taken. Sorry if we've caused you lot a few problems. Not only do you have to wait longer for your magazines, but we tend to forget about your little problems as well. From now on, we'll include an address when we review a product.

The address of the ST Club is as follows:

**49 Stoney Street
Nottingham
NG1 1LX
England
(Tel: 0602 410241 – just in case!)**

GLASNOST RULES

First of all I must beg your pardon for my bad English. I live in the Soviet Union in the town of Sverdlovsk. So, as you understand I am not a subscriber to Atari ST User. But I have read some numbers of your magazine.

I must say that in this country we don't have something like it. And if you will take into account that we don't have any literature on Atari ST you can understand that your magazine seemed to me a real treasure (to tell the truth we have Polish magazine Computer and it is not bad).

To my deep regret I don't have possibility to subscribe to your magazine (I don't have pounds, dollars or any other real money). But I should like to have a penfriend among your readers.

A few words about myself. I am 23 years old and I am a 4th year student of Urals Politechnical Institute (it is like your high technical school). I am very fond of computers.

Some month ago I have left rows of IBM users for Atari ST. Among all programming languages I prefer Pascal and C most of all.

I hope that some of your readers would like to write to me.

My address: 624051 USSR, Sverdlovskaja OBL., Beloyarsky R-N, Zarechny, Komsomolskaya 2-3.

Sergei Levin, Sverdlovsk, USSR.

Thanks for writing, and we're sure that someone will reply. We're sorry you can't manage to subscribe, but we're sending you a copy of this magazine – so if you're reading this, you've probably already received it!

TRAINING WHEELS

A short time ago my brand new Atari 1040STE was delivered by a very obliging local retailer who introduced me into the mysteries of its operation.

The Atari was chosen after weeks of research which included scanning the columns of newspapers and magazines, and also of getting the opinions of 'experts' good bad and indifferent.

Why did an old wrinkly like me want a computer? Well, something to keep the old brain-box ticking over. It can't be hard to learn because we see toddlers in shops doing all sorts of clever things with them. If they can compute, so can I…

What a mistake, what a gigantic blunder! I think all instruction books are, at present, written by 12-year-old whizz kids with degrees in computer science who have not yet learned English as she is spoken.

Manuals, I'm sure, are written in code then translated into Double Dutch and (cunning ploy this) printed backwards. My obliging retailer did say "If you have any difficulty give me a ring". I'll bet he rues that remark. I'm sure I must have telephoned him 572 times.

So far I have managed to destroy my favourite floppy disk Canvas, my first attempts at word processing resulted in 18 draft copies, and as for saving and running a program – that is pure gobbledygook in the manuals I have read.

I am progressing slowly but can you please tell me of any instruction book or disk which doesn't cost the earth, to help me?I know of others in the same age group who have had the same problem. Evening classes are no good because they are business and IBM oriented. Help!

G Powell, Belmont, Hereford.

Oh dear! You do need help. First suggestion is to look at our Beginners Series. Which began in our December issue. If you require back copies, we can supply them.

Second is to take a look at Your Second Manual by Andreas Ramos, £3.95 from the ST Club (see address in letter reply to DOWN UNDER on this page.) That might help.

Apart from that, we can only wish you good luck. Perhaps you could ask one of those nice kiddies from down the street...

BARGAIN BUSINESS

I read in your July 1990 issue that you are prepared to assist readers who are experiencing difficulty with any of the mail order companies who advertise in your magazine.

I enclose a letter and enclosures that I have sent to Bargain Software which is self-explanatory, and would appreciate any assistance that you may be able to give to resolve the situation.

I appreciate that you may think I am bringing you in at an early stage, but as you will see from my letter I have experienced difficulties before and I cannot see anything at this moment to indicate that matters will be heading to a satisfactory conclusion.

The reason for my concern is that companies like Bargain Software advertise games which are largely aimed at young people, who probably use their meagre resources, ie pocket money, to make their purchases. It is galling to think that these customers are ignored/treated with contempt when something goes wrong.

C F Hughes, Pocklington, York.

The enclosed letters reveal that something is definitely amiss. However, 'USER has tried to contact the company's representative without any success, and would like to point out that Bargain Software is no longer placing advertisements in our magazine.

We can say no more on the subject at this stage, being not fully conversant with the facts. If Bargain Software would care to contact us, we will publish further information on these pages next month.

CLOSE BOX

AGENDA COMPETITION

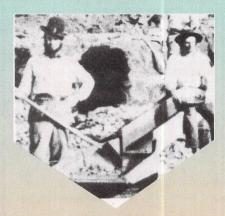Only one lucky person out of the multitude could win that much-desired AgendA. And the winner is…

Ross Chester from Weston, Dorset.

Some people have all the luck! Ross will be hearing from us very soon.

WALLY OF THE MONTH

Yep, the person who sent in that strangely lacking Band in A Box competition entry has identified himself – and suggested he should have won the Wally of the Month Competition. Well, we usually like to reserve that title for someone on the team, but this time…

To protect him from the derision of the general public, we won't give you his name. But to console him in his embarrassment, we've sent him a little something in the post.

ONE FOR THE FAITHFUL…

If you've been reading 'USER every month this is the competition for you. All you have to do is identify the picture below and then tell us which month it appeared in the magazine. Easy, right?

The lucky winner will receive a marvellous prize as well as an honourable mention in the mag. What more could you ask for? To enter just send a postcard with the answer and your name and address – this is important even though some of our readers may not think so! Now where did you put those back issues…?
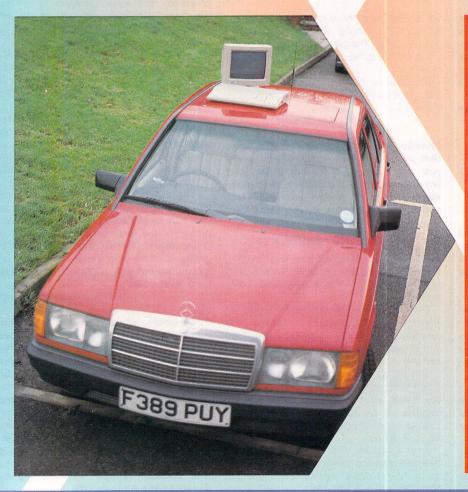
NEXT MONTH IN 'USER

First, there's our stonking PD special. A comprehensive review of the PD scene, the companies, the people and the programs – what's in, what's out, what's next.

Then we investigate the various kinds of computer crime – from theft to hacking and piracy. There's a lot more to it than meets the eye!

Of course, we'll be continuing our great new 3D graphics series, we'll have the usual extensive news coverage, and 18 pages of games reviews. Then there's the Beginners series, another illuminating Masterclass, the latest hardware and software reviews, and more…

GUESS WHO?

That little fiend in the sun visor was John Butters, the boy wonder. The photo was actually taken some time ago and he's considerably older and wiser now – he won't pose indiscriminately for the camera in kinky gear now – not at work anyway!

WHERE IN THE WORLD…?

Taking your ST on holiday with you this year? Planning a little R & R cruising the Caribbean, ST in tow? Or perhaps climbing Kilimanjaro with the ST thrown into the backpack for ballast? How about canoeing down the River Clyde with only an ST for company?

Here's the real challenge. Send us a picture of your ST in the most unusual, exotic or exciting location you can. Failing a far off location, try a far out method of transportation.

But let it be known now that Interactive Publishing will NOT be held responsible for any claims concerning machines which have come to grief in the quest for the perfect pic. In other words, be careful! And no compromising pics that we can't publish this time, OK?

By the way that sleek Merc does NOT belong to the Editor although she wishes it did. And it doesn't belong to John Butters either, and NO he can't have one for a company car…

HiSoft News

Write with Flair

The Document Processor

We are pleased to announce the immediate availability of the UK version of Wordflair, the integrated document processor.
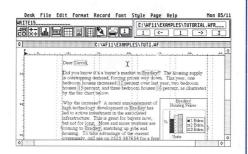
With its powerful combination of text, graphics and calculation regions together with its integrated database, Wordflair is ideal for newsletters, product brochures, form letters, mail shots etc.

Wordflair provides all of the features you need for efficient word processing … and much more. With its easy-to-use page layout tools, Wordflair lets you combine text, graphics, and images. In addition, you can dynamically link calculations and data throughout your document.

With Wordflair, you can create effective, eye~catching documents without moving from program to program.

Wordflair creates compound documents by layering text, graph. calculation and imported object regions onto a background writing tablet.

These regions are simple to create and edit, using the friendly, easy-to-understand icons along the top of the Wordflair window.

HiSoft is the exclusive distributor of the UK version of Wordflair which has full support for the UK keyboards, currency etc. and comes with a complete set of anglicised examples for you to use and study. The RRP of Wordflair is £79.95 inclusive.

HighSpeed Pascal

We have recently discovered a brand-new, and rather exciting, version of the popular Pascal language for the Atari ST/TT.

HighSpeed Pascal comes from Denmark, is extremely fast and friendly to use and is very closely compatible to the immensely popular and successful Turbo Pascal on the PC.

ProFlight Takes Off

ProFlight, our Tornado flight simulator, looks set to create a new standard of accuracy and flyability in

Software that matches the Hardware

the simulator market. Already we have had many enthusiastic comments from ecstatic users and now we have released version 1.2 of ProFlight with improved colour graphics and many additional features. RRP £39.95. Upgrade from 1.1 is £2.50.

Compilation speed is roughly 20,000 lines per minute with excellent code generation for the ST and the new TT.

HiSoft has been appointed the exclusive distributor of HighSpeed Pascal in the UK, USA, France, Australia and New Zealand. RRP £89.95.

HiSoft software is available from good computer shops. In case of difficulty, you can order directly from HiSoft. For export terms or further details on any of our products, please call or write to us. All prices include VAT and P&P within the UK.
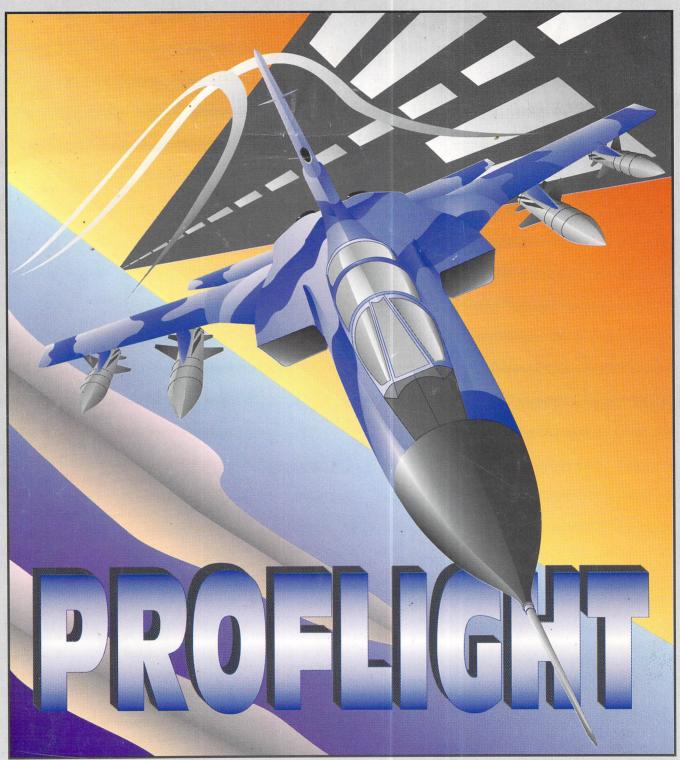
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