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ATARI ST USER

October 1992 • Issue 80

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- MultiTOS – the ST's new multitasking operating system

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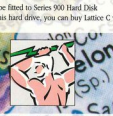

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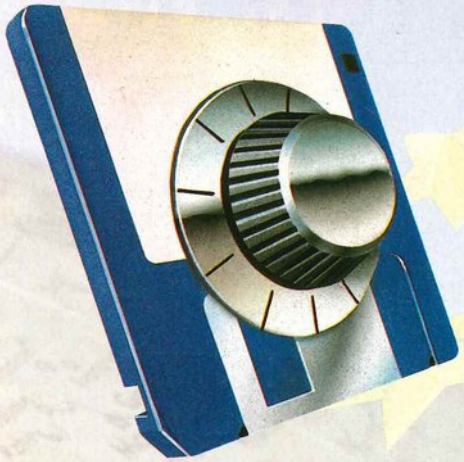

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For over six years *Atari ST User* has been the leading magazine for ST enthusiasts. As a key member of the Europress magazine group, *Atari ST User* promises to inform, educate and entertain its readers each month with the most dedicated coverage of the ST available.

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Dear Reader,

Thank you for choosing Britain's most informative magazine for ST enthusiasts at the most exciting time for Atari and owners of their computers since the launch of the ST back in '85.

Atari used their annual Düsseldorf show for Falcon's world launch. We were there and have been able to cram a full report into this issue.

Flight simulation is a superb way for ST users to relax after a hard day's work. But which is the package for you?

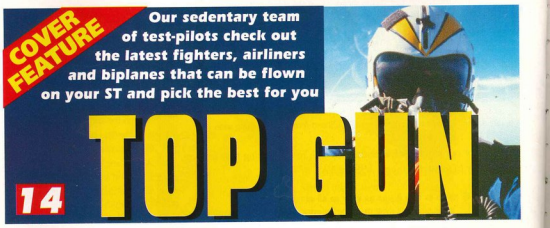
This month's cover feature looks at the programs and our experts zero in on the pick of the bunch.

But if you don't have time to take a break, we've got plenty to keep your ST working: a full guide to graphics, the ST's new multi-tasking operating system revealed, reviews of the latest products and all our regulars.

And on the CoverDisk we have our usual well-chosen selection of programs – leisure and serious – to ensure your ST's using the latest software.

So enjoy your magazine and if you have any comments about it or anything else related to the ST please drop me a line at the usual editorial address.

John Butters
Editor



COVER FEATURE

Our sedentary team of test-pilots check out the latest fighters, airliners and biplanes that can be flown on your ST and pick the best for you

14 TOP GUN

Aspects of the Atari ST

Midi and music..101
No serious ST musician can afford to ignore the best music pages in the business

Emulation 103
The column that explains the ST's chameleon-like tendencies to the full

Communications.... 105
The world of modems and bulletin boards – mass communication for the 90s

DTP 107
Producing top-quality newsletters and posters is easy with your ST and this column

Business.....109
Improve the efficiency of your business by using software to its full potential

GAMER

LOTUS III – THE FINAL CHALLENGE

Page 77

Masses of game reviews, news and cheats

Don't miss our GREAT offers for subscribers on page 98

specials

11 Düsseldorf Show
A full report from this huge Atari show, with details of new ST and Falcon products on their way to Britain

20 Picturing a story
We take the mystery out of graphics in a complete guide to the formats, packages and their use

30 Multitasking TOS
An exclusive look at the development and PD roots of MultiTOS and the benefits it will bring

53 Falcon's hidden talent
We explain why Motorola's Digital Signal Processor is so important to the success of Falcon

68 Moving on up
Improve your ST at the lowest prices through our special upgrade service

75 MidiStudio tutorial
You've had chance to practise with last month's free CoverDisk program – now get the best from the software

reviews

34 Family Roots
Floppyshop's new genealogy program is tried and compared to its competition

41 Silhouette
A multi-functional art package offering bitmap art, vector format and an autotracing facility is found useful for desktop publishers

45 Music DTP
The ST's music and DTP strengths are linked in a new package for computer musicians wanting to publish orchestral scores

64 Replay 16
Microdeal's first true 16-bit sampler for the ST is put through its paces. Is it as good as it sounds?

regulars

9 News
The latest news from the ST world, including Falcon's launch and ST price falls confirmed

37 Write Now
An opportunity for you to praise, complain or debate the state of the ST industry

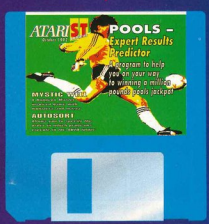
50 Public Sector
New programs from the public domain and shareware reviewed plus a translation table to help you use German PD

57 Assembler
Our tutorial on programming the 68000 continues with a look at data tables and how to move a ball around the screen

61 Advice Service
Your latest ST problems are cured by our resident agony uncle who this month looks at bombs and viruses

100 Competition
You've read the cover feature, now win hundreds of pounds worth of Microprose simulation software

The CoverDisk



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- **NESS Benchmark utility for checking the performance of your ST**

The DISK starts on page 26

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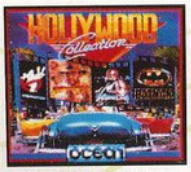

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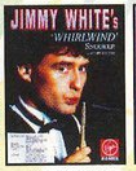

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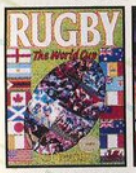

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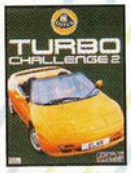

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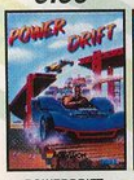

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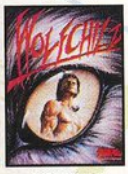

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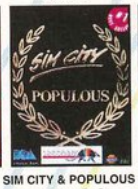

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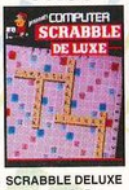

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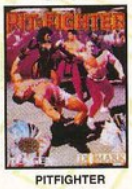

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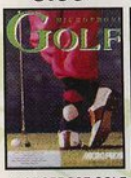

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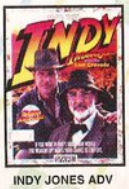

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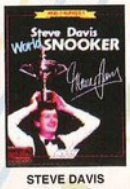

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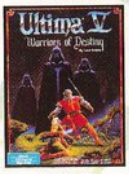

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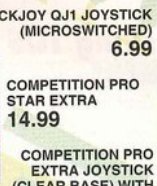

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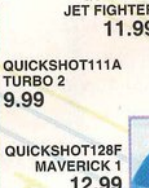

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ATARI ST NEWS

By John Butters

Falcon flies at the fair

ATARI used their sixth fair in Düsseldorf, Germany recently for the world launch of their new 32-bit home computer, Falcon030, and confirmed the price of the 1Mb version as £499.

But another model with 4Mb of memory and a 65Mb hard drive will cost £899, and there are still plans for 68040-based machine next year.

Housed in a 1040STE case, Falcon's keys are a dark grey – as used for cases of developer's machines. Atari say it might be redesigned next year.

Several firms previewed Falcon software including HiSoft, Mirage and Matrix, and Atari said the machine will be bundled with some simple applications.

Said Atari president Sam Tramiel: "It's really a very exciting machine, which we've been working on for quite a while.

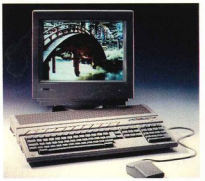
"It will bring back a lot of excitement into the personal computing market, and is the first new and exciting machine for a long time.

"The production lines are now in operation. I was personally in Taiwan recently and I saw machines being produced - it's really happening."

Tramiel said Germany, Benelux, France and the UK will receive first machines and that it will be shipping in the United States from mid-October.

"We feel this machine will put Atari back in the forefront of technology. It's a very, very exciting machine," he added.

For readers who missed our preview last month, Falcon's main features are a 68030 processor, Motorola Digital Signal Processor, multitasking TOS, 262,144-colour palette with up to 65,536 colours on-screen and up to 14Mb of RAM.



Atari give Falcon an ST look

At the time of going to press, Falcon's UK launch was planned for the European Computer Trade Show to be held in London during September.

● An exclusive interview with Sam Tramiel appears on page 10.

ST price fall confirmed

AN ATARI insider has told *Atari ST User* that new ST bundles and price cuts will be announced within the next few weeks.

The cost of 1040STEs will drop to £299, and the 520STE is expected to cost £249 – the firm say it is not possible to price the entry-level machine at £199.

The giant are expected to use the European Computer Trade Show to be held in London during September for the annoucement.

Library closes during probe

A LEADING ST public domain outlet, the South West Software Library, has closed and its master disks have been transferred to Kent-based 16/32 Systems.

The move follows the seizure of sampled sound and commercial product demonstration disks from the library in February by Dorset Trading Standards Department.

The disks were taken to assist an investigation into alleged copyright infringement, which at the time of going to press had not been concluded.

"My wife and I ran the library as a hobby, and a hobby should be fun. Unfortunately, this is no longer true," said SWSL's proprietor Martyn Dryden.

"We thank our customers, friends and associates in the PD world for their messages of support, and we're sorry to disappoint them."

The Federation Against Software Theft (FAST) say the fact that music is reproduced on floppy disks is irrelevant. They say if the contents of a disk breach copyright then the music watchdog BPI should act on behalf of their members.

16/32 Systems can be contacted at 35 Northcote Road, Strood, Kent ME2 2DH.

Retouche for the masses

IMAGE manipulation software Retouche has had its price slashed from £199 to £99, making room for a colour version soon, UK distributor CGS ComputerBild (081-686 8121) have announced.

The software enables scanned or drawn images to be retouched and rastered for use in applications such as desktop publishing and computer-aided design.

"We've been fighting with the Germans to make it a realistic price for the UK market," said CGS boss Ray Cross.

He expected the package to be bought by many home users using graphical wordprocessors, and added that Colour Retouche will fill the £200 gap within four months.

Scanner zooms in from Naksha

ANOTHER budget-priced hand scanner is being aimed at ST users, this time from Naksha, the company best known for their replacement mouse.

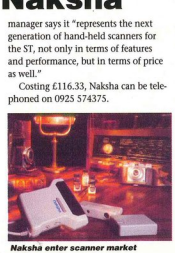
Supplied with Migraph Touch-Up software, the scanner has a resolution of between 200 and 400 dots per inch and has four zoom modes.

Dithered scanned images are converted to greyscale, it supports a variety of screen resolutions and has editing features for painting, drawing, special effects and scalable fonts.

Images can be previewed and inverted or made transparent. There are 36 fill patterns in 75, 150 and 300dpi, and a tool for cleaning stray white or black dots from the scan.

Keten Bhatt, Naksha UK's general manager says it "represents the next generation of hand-held scanners for the ST, not only in terms of features and performance, but in terms of price as well."

Costing £116.33, Naksha can be telephoned on 0925 574375.



Naksha enter scanner market

Tramiel quizzed on Falcon

ATARI have developed a machine that has the capability to dominate the British home computer market.

But its future rests largely in Atari's hands with their marketing, pricing and support. To find out their plans, we went to the top to ask Sam Tramiel, president of the firm.

STU: What price will Falcon come in at and when are we going see it?

ST: You'll be seeing them in the UK in September – probably early to mid-September – and the price of the 1Mb machine is £499, and the 4Mb machine with a 65Mb hard disk drive is £899.

STU: How important do you see the price, because you are still up against the Amiga?

ST: The Falcon030 is not up against the Amiga – this is a far superior machine.

STU: Do you know how fast the hard disk is?

ST: Nineteen milliseconds, I think.

STU: How compatible is Falcon with the ST?

ST. Extremely compatible. Nothing can be 100 per cent, but it's very, very close. The things that might break will be games that were written right for the hardware on the STE, which will then not be compatible on the Falcon. Things will be very, very compatible – we don't want to abandon users – if they want to upgrade to a Falcon they can use their software on the Falcon.

STU: Some people think that if it is ST compatible, software houses will write ST programs for Falcon to take advantage of both markets, and it will be a long time before Falcon-specific software comes along.

ST: Well we're making sure that it will happen because we're doing it ourselves and they will be forced to do it because the games will just be phenomenal.

STU: Where do you see Falcon fitting into the UK market?

ST: Our aim is the mass market, that is our target for this machine.

STU: Are there plans to bundle applications with it?

ST: There are applications bundled with the machine. There's a calendar and appointments book, a calculator, there's a game called Landmine and a game called Breakout.

STU: Why did you use the same case as the STE?

ST: For two simple reasons, speed and cost. It's there, it's a good case and it cost nothing to do it.

STU: Do you not think that it will have an adverse affect on the perception of the product?

ST: I don't think so, we've made the colours a little bit different and you can tell when one is a Falcon and when it is not.

STU. Thank you.

Authorised for repairs

ANALOGIC, a London-based dealer, have become an authorised Atari repair centre and have just started a while-you-wait repair and fitting service for ST users.

"Atari have seen our service and work and didn't find any complaints with the service we provided," said an Analogic spokesman.

They can be telephoned on 081-546 9575.

Speedy copies from Solo

THE first ST product from new firm Shottifsham Designs (0394 410459) is Solo, a disk copier that does not need to be used with a computer.

Designed as a high speed copier, it can be fitted between two disk drives or plugged between the computer's internal and external drive.

The company claim it to be better than similar devices because of it offers the convenience of not needing to use a computer. Price: £34.95.

Swifter move from Citizen

QUIETER, easier and faster are the claims from printer giant Citizen on their new range of 24-pin dot matrix models.

The Swift 2 series consists of three machines – the Swift 200, Swift 240 and the colour Swift 240C. Each has an expandable 8k buffer and between six and nine letter-quality fonts.

All offer a minimal noise level of 44.5dB, a Command Vue Control Panel to make use easier and faster, a facility to allow four pages of text to be produced on the same A4 page and an auto-setup feature.

"The Swift 2 series offers all the benefits previously limited to non-impact technology," claimed Citizen's Julie Haswell.

"It has quiet printing, scalable fonts and in addition offers good quality colour output. We aim to continue building on the success of the Swift brand.

Citizen improve 24-pin range

Goodman see black and white

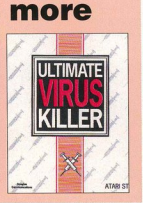
MONULATOR, the software which enables users of colour monitors to emulate a hi-res mono screen, has been signed over to Goodman Enterprise. The public domain library intends to sell the program for £14.95 and can be contacted on 0782 335650.

UVK kills more

BRITISH distributor for the Ultimate Virus Killer, Douglas Communications, have just announced a new version of the software containing many improved features.

Version 5.5 detects and kills 66 strains of boot-sector viruses and five strains of link viruses and recognises extra anti-viruses, boot-sectors, applications and harmless file types.

Registered owners can upgrade for £5 and the cost for new users is £9.99. Douglas Communication can be telephoned on 061-456 9587.



Channel 5 interference minimal says Mellor

THE Government and independent experts have quelled fears that millions of Brits would need to have their home computers and games consoles adjusted by engineers if plans for a new television station go ahead.

Some reports say the proposed Channel 5 would transmit on frequencies close to the one used by computers and that people using television sets for their display could expect interference.

But according to computer and television experts few homes will be affected. They say signals from Channel 5 would be lost or become very weak once the aerial is unplugged from the TV set to enable the computer to be connected.

The Government admits there could be some problems. Minister for Fun David Mellor, says: "Tests indicate that few will suffer interference provided they are not tuned significantly towards the local Channel 5 channel or situated very close to a Channel 5 transmitter."

Fun of the fair

Excitement has returned into the Atari market with the Falcon's arrival. Darren Evans visited the Düsseldorf fair to find out about new products on their way

FALCON030 was the main feature at this year's massive 1992 Atari Messe, held in two giant halls at the Düsseldorf Messegalande on August 21 to 23.

Its arrival has brought enthusiasm back into the ST market, with the show organisers claiming 166 firms exhibited at this year's show, an increase, they say, of 18 per cent over last year.

Both Sam and Leonard Tramiel were present, along with the man behind the development of the Falcon, Richard Miller.

Like most German shows, everything was well organised, with a collection of forums and seated demonstrations of new software by various companies.

The centre attraction was a large demonstration area featuring a large screen display showing the graphical abilities of the Falcon as well as a PA system for its audio features.

Throughout the demonstration, visitors were also able to get hands-on experience of the Falcon and its new multitasking operating system, with a number of Falcon machines dotted around the the demonstration area.

This was where most visitors seemed to be concentrated, indicating an extreme interest in the machine.

Advantages

Software houses demonstrated products under development which will take advantage of the new abilities and features of the Falcon.

A visit to the HiSoft stand revealed the talented John Gymer, author of the art program Canvas. John was showing a new graphics package called True Paint, a program that will take full advantage of the Falcon's capabilities, providing true colour displays with a staggering 65,000 colours on screen.

Dedicated

Another Falcon software package dedicated to graphics, is under development by Digital Arts and will be distributed by CGS ComputerBild in Britain.

Featuring some of the technology used in Didot, the high-end graphics package, DA Vector is aimed at the consumer level, offering powerful vector-based animation facilities.

As opposed to bitmap animation packages which centre around bit images, vector animation uses a collection of 'points' to define the image.

Other features include a powerful Bezier surface distortion – a highly mathematical process – a calculator for inputting formulae to transform images, and the ability to use PostScript Calamus fonts.

Although DA Vector is mainly a vector drawing package, it is also possible to fill an area of a vector with a bitmap image. All graphics produced can be overlaid to video and there is an anti-aliasing process to smooth out images.

Working in all resolutions and with true colour capability, it will be aimed at users who wish for a graphics presentation and animation tool.

But for the time being you all own STs, and there were a few new bits and pieces to be found around the halls. Datalight 2.0 and 1st Card came from Logilex and it is hoped they will be available in the UK this side of Christmas.

Capacity

Datalight is a TSR-type program that runs from the auto folder and effectively doubles disk capacity by compressing data as it is written to disk.

1st Card is a flexible database program which enables users to create their own interface for accessing the data. It has an option to place buttons and icons on the screen, which can then be used to access the information.

Other features include sound and music support and the ability to attach graphics to data cards.

The centre of attraction was the Falcon030 audio/visual demonstration which drew large crowds

Falcon games

Two games were also being shown on the Falcon. Llama Zap, comes from Jeff Minter and Space Junk is a space adventure commissioned by Atari Corp from Mirage Technologies.

Llama Zap is the Falcon version of the ST game Attack Of The Mutant Camels and was very popular with visitors.

Space Junk also looked impressive with features such as animated digitised images of the game's 100 characters.

Apparantly, Mirage used custom designed, life size latex puppets and digitised stop-frame animation to produce the images and the process is referred to as Imagimation.

Essentially, Space Junk is a vast adventure set in a huge universe and has a rather open-ended plot which allows the player freedom of action. Sub-games within Space Junk allow characters to be challenged.

Interesting hardware nears

On the hardware side, there were some interesting new products on show. ICD, the US-based company best known for their SCSI connectivity products, had a new host adaptor called The Link.

A convenient way to connect an Atari ST to standard SCSI devices, it allows the connection of peripherals such as SCSI hard drives, floptical drives, Magneto-Optical drives and CD-ROM drives, which were originally designed for computers such as Apple Macintosh, Amiga, IBM PC and NeXt.

The Link supports the full SCSI-2 command set inlcuding group 0 through 7 commands and is extremely compact with dimensions of 63 x 76 x19mm.

The rather ominously named product, BlackMail, from Digital-Optical-Anologue (010 1 713 488 2134), is a Falcon voice mail system which allows incomming and outgoing messages to be stored as digtal sound files on your computer.

Other features of the BlackMail include remote and secure acces to voice messages, single or multi-user system capability, selectable audio compression rates (1:5-3:1) and easy to use interfaces. BlackMail is due early this winter.

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Simulation

John Butters and Darren Evans take the chocks away for a round up of the best packages to get your ST flying

Inside the real thing: A complete cockpit where anything can happen

Flight has always been popular with home computer users, with simulators enabling them to either experience the thrills of flying the latest fighters in combat or guiding civilian planes from one runway to another.

Almost since the ST's birth there has been a rich supply of programs rolling out of various software houses and as time has passed they've become more and more realistic.

In the real aviation world, multi-million pound simulators give airlines the opportunity to train their new – and experienced – pilots safely and relatively cheaply.

If during a simulation a crew put their DC-10 down short of Boston's runway, they might lose their pride but they'll walk away to tell the tale and the airline will still be able to fly its airliner.

There are versions for almost every type of aircraft flying today. Inside they have their instrument layouts reproduced exactly, and in flight they handle differently depending on the size of the plane and number of engines. Today's simulators are so realistic that some pilots can convert from one aircraft type to a similar sized plane on the ground and then take their new plane into the air full of fare-paying passengers without any further training.

Anything pilots are faced with in the air can be simulated on the ground, such as technical problems and bad weather. As part of their year's minimum 16 hours simulator time, pilots have to carry out four procedures which includes an engine failure during take-off.

But how can you practice your flying a home?

Flight Simulator II

One of the first packages released for the ST was SubLogic's flight aircraft simulator, Flight Simulator II. It features two types of plane – a light Cessna 182 or an old model of the Gates Learjet.

Newcomers should practice their flying on the Cessna. It's much slower than the executive jet and will enables various procedures to be perfected.

The start has the plane lined up ready for take-off at Oakland Airport and once airborne beacons are used to navigate the aircraft to another airfield.

Airports are represented accurately and pilots need to carry out the actions of real flyers during the flight, right down to turning the heater on to prevent icing at high altitude and lights during night-time flights. It's supplied with a well-written and comprehensive manual which needs to be read if you intend to stay in the air.

A few years ago FSII was the best but slow screen updates compared to other software mean its age is now showing.

Its main advantage over other programs is a wide selection of scenery disks to allow you to fly practically anywhere in the world.

Among them is Hawaiian Odyssey, an adventure which tests flying skills as you attempt to pick up enough clues to allow you to find the hidden jewel of the goddess Pele.

A320 Airbus

By far the most realistic civil simulator comes from Thalion Software, a German firm that has only just moved into the simulation arena.

A320 Airbus puts you in the captain's seat of the modern fly-by-wire jetliner of the same name, flying from one European destination to another.

Written by a Luftwaffe pilot, it

starts as any real flight would – in the briefing room. A simple flight plan is filled with details of the route, number of passengers (Pax), fuel weight and freight.

The height of the cloud base can be set manually or randomly by the computer. The lower cloud bases – perhaps 100 feet or so – demand great care with the navigation equipment, especially the instrument landing system (ILS).

During flight the weather can deteriorate and the odd emergency means that you need to have a diversion airfield planned. This happens mainly at the higher levels of the simulation.

The view is only of the left-hand side of the control panel and windows, although pressing certain function keys switches the outside display to the left or right of the plane.

There isn't an option to look diagonally across to the first officer's side of the plane which seems a little strange, and, of course, because it's an airliner there's no need for a rear view.

Control is split between the keyboard and mouse or joystick.

The mouse seemed to give the best results but it's probably one of those things that's down to an individual's choice. Keyboard commands are easy to remember and well placed.

Each of the plane's two engines has to be started separately, and once the power is idling at 17 per cent they can be increased together to get the aircraft rolling forward.

Threshold

The simulation starts with the A320 sitting just short of the runway threshold, so it's simply a case of turning on to the strip, straightening up on the centre and banging the power up for take off. Once the speed has reached about 150 knots you should be able to get airborne. Lift the gear and you're on your way. It's as simple as that – nearly.

Finding the destination requires the use of genuine Jeppesen navigation charts, which are supplied with the software. Beacon radio frequencies must be entered into the navigation system so that the correct headings for your route can be obtained.

Views to the left and right help visual landings

With no instruction from air traffic control, they are a necessity unless the plane is to be flown around in circuits at one airfield – which isn't such a bad idea until you get the hang of things.

They say what goes up must come down, so once you're over the airport you have to prepare to get the A320 safely on to the ground. The ILS is your best friend for this part of the flight.

Used for guiding aircraft towards the runway they transmit on certain frequencies, like beacons. These can be found in a separate book which gives approach details for airfields that can accept the plane throughout Europe.

There are two bars on a dial on the right-hand side of the instrument panel. A perfect approach has these crossing at their centre and if they are not central, they'll indicate which direction to head in to get on course.

Speed

All the normal landing procedures have to be carried out. Control the speed using throttle, brakes and flaps and don't forget to lower the landing gear.

If the undercarriage has been lowered, three red lights on the instrument panel turn green – if they don't you'd better start praying.

As the runway nears, a little light in the cockpit flashes and there's a loud beeping noise to show that you've overflown the outer marker – a beacon four miles from touch-down. Closer still you pass the inner marker.

Once the plane's touched down successfully, the engines are put into reverse thrust to help cut the plane's

Real approach maps are supplied with A320 Airbus

Approaching Frankfurt Airport in A320 Airbus

stunners

speed, and the jet should be taxied off the runway.

If it all gets a bit too much, help is available through the autopilot. The aircraft will be flown automatically at the right height, power and direction and it can even land itself – especially useful if the airport is covered in low cloud or fog.

None of the program's features appears to have been bunged in as an afterthought. Even the clouds have been carefully programmed, flickering between different shades of grey before the plane pops out on the other side.

There are few niggles with the program, though. It would have been nice to see VASI lights for visual approaches and complete runway lights.

Deutsche Airbus, manufacturer of the real plane, and Lufthansa, Germany's national airline and operator of the A320, have endorsed the program. Pilots' wings are given to ST flyers who rise to the level of Captain.

Graphically, A320 Airbus is superb but it falls down on sound which at slow engine speed resembles a lawnmower more than an airliner.

At the end of the day, Thalion have produced the most realistic sim for the ST, although it isn't ideal for anyone looking for fast action.

Besides the civil field of flight simulation, there are plenty of military programs, made popular by films such as Top Gun and the seemingly glamorous lifestyle of a fighter pilot.

ProFlight

HiSoft, famous for their high quality utilities and programming packages, are not exactly known for producing entertainment software.

In fact, ProFlight is their only contribution to this area, and what a contribution! ProFlight is the most thorough and realistic military aircraft simulator. It is to military simulations what A320 Airbus is in the civil field.

It concentrates as much as possible on the accurate representation of both aircraft performance and the physical effects upon the aircraft, such as gravity, air drag and atmospheric conditions. The aircraft simulated in ProFlight is the Panavia Tornado, a multi-role combat swing wing aircraft hailed as the fastest aircraft at low level.

One of the most annoying aspects of simulators for the ST is the way the aircraft controls are emulated. Most offer joystick or mouse support and ProFlight is no exception.

However, the choice of mouse control in nearly all simulators usually means you are in for a hard time trying to control the aircraft and requires an immediate switch to joystick mode.

ProFlight is an exception. It has the best mouse control of any simulator on the ST. The movements are extremely smooth and make for a very realistic sense of motion.

The graphics in ProFlight are not as aesthetic as most others, especially the cockpit representation, but this is the price of realism and speed.

The equations used to achieve this ratism need to be calculated many times a second and too much time spent on drawing pretty pictures will mean slow or jerky movement.

This is not to say that ProFlight's visuals are rubbish. The cockpit view may be very basic, but the terrain and enemy aircraft all move with exceptional smoothness and speed. Sound too is not as good as other simulators but is adequate enough.

Gameplay in ProFlight is quite accurate, with mission planning playing a large part of the process.

Into account

Full consideration of terrain, enemy installations and even awkward wind shear problems have to be taken into account for a mission to be successful.

Once a course is set and targets specified, the player can use the Tornado's very versatile autopilot modes to aid navigation to waypoints or targets.

Unlike other simulators, ProFlight can be configured through a comprehensive menu system accessed through the function keys.

From the main menu you can select and alter parameters of the simulation, visuals, autopilot and navigation modes, training modes, weather, head up display and also access the mission planning stage mentioned previously.

The graphics may not be brilliant, but the playability is

Plan your route to the target via the mission planning screen

Outside simulators bear no resemblance to aircraft but in fact this MD-11 simulator from Rediffusion is one of the world's most hi-tech models

Each of the items has a sub-menu – for example, the visuals selection brings up another menu allowing day, dusk or night flying and allows you to specify whether certain objects in the game are to be shaded or unshaded, thereby increasing display update speeds.

Also in the visuals menu is the option to have an accurate display of stars for January 1, at latitude 51.5 degrees north, from which it is possible to navigate.

The manual which accompanies ProFlight is of HiSoft's usual high standard and is extremely well written and organised. Supplied in a ring binder, titled separators divide each of the main chapters to allow quick and easy access to them.

If you are looking for accuracy and realism with fast and smooth graphics, you will find them in ProFlight.

F-19 Stealth Fighter

Microprose are certainly the most famous when it come to simulation software. They are responsible for some of the best selling simulators not only on the ST but on other formats too. Also, with the recent marketing and distribution deal in which Microprose will translate, distribute and promote a range of games from Spectrum Holobyte, developers of Falcon and Falcon 3.0, they seem set to strengthen their success.

This simulator is based on that most elusive and mysterious of aircraft – the Stealth Fighter.

Unlike HiSoft's ProFlight, F-19 does not pretend to be the most realistic simulator, rather the emphasis is on making it exciting to play and watch, yet maintaining some degree of realism.

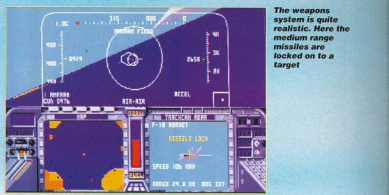
Situations

F-19's appeal is in the number of missions available and the development of your alter ego's rank and stature. The missions involve air and ground target strikes during different war "situations".

In Cold War, missions are clandestine and you may only attack targets specified in your mission orders while avoiding detection,

With Limited War, in addition to targets specified in your orders, you may also engage enemy installations and aircraft which pose a threat with active weaponry. Finally there's Conventional War, in which you may attack any targets in enemy territory, including civilian.

The graphics in F-19 are quite good, as is the sound. There is lots of detail both in ground and air objects. When flying over the sea, you can also see the odd supertanker carrying fuel.



The weapons system is quite realistic. Here the medium range missiles are locked on to a target

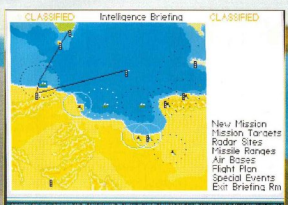
F-19 does not have the same speed and smoothness of movement as ProFlight but it is still quite impressive considering the amount of detail in the display.

Control is by joystick or mouse, the mouse option not being recommended.

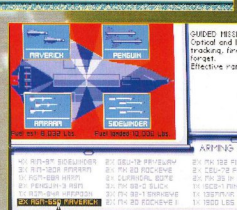
The mission planning in F-19 is somewhat more involved than in ProFlight, with static pictures representing briefing and de-briefing rooms in which you select your missions and receive mission reports, and hopefully promotion, on completion. To aid mission planning, four maps are supplied with the game. They allow you to carefully plan your route to avoid radar installations or approach them at specific angles to keep the F-19's radar visibility low and also to take advantage of the terrain.

There is also a wide range of targets and missions from air and ground strikes to photo reconnaissance missions where you must photograph your target.

Such varying targets requires a large number of weapons to be available and in F-19 you have quite an array to choose from such as short ➤



Careful planning is required to avoid radar detection and to make use of the terrain



There's quite a comprehensive array of weapons to choose from for your mission

A world at your fingertips

As well as discovering a selection of extra games, an ST hooked up to a modem can be used for other flight-related tasks.

CompuServe is ideal for finding details of commercial flight schedules, seat availability and even gives the option to book yourself on a journey through your account.

It uses the Official Airline Guide and allows users to give preferences such as departure or arrival times and routes.

Pilots need to know detailed weather reports for their flights, which are normally picked up at the airport flight briefing room or by calling the local weather centre.

But private pilots might want to know if the weather's sufficient for flying before they set out from home. If they need a few reports, a call to the Met Office is likely to be time consuming.

Both Prestel and CompuServe offer a weather service for aviation, but at the moment the latter is restricted to North American airfields.

And, finally, CiX and CompuServe have conferences for people to talk about flying. There are various topics, from general chat about passengers' experiences to crews talking among themselves.

CompuServe 0272 255111
Prestel.....0800 200700
CiX 081-390 8446

and medium range air-to-air missiles as well as a number of air-to-ground missiles.

One of the most exciting parts of F-19 is when you have to land on a carrier. Landing an aircraft in any simulation is quite an achievement, but landing one on a moving carrier, which requires pin point accuracy to ensure you hit the arresting cables, is something else.

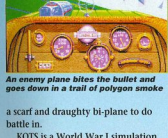
Microprose simulation manuals are invariably something along the lines of War and Peace. Within the 192 pages there is a mass of information on flying techniques.

If you enjoy blasting lots of enemy aircraft and ground installations, with a spot of tactics thrown in for good measure, then F-19 has plenty to offer.

Knights of the Sky

This is a departure in terms of airborne military simulators. Gone are the medium range missiles for shooting your enemy from beyond visual range and the sophisticated head up displays.

Knights of the Sky – KOTS from here on – just gives you a leather jacket and headgear, a pair of goggles,



An enemy plane bites the bullet and goes down in a trail of polygon smoke

a scarf and draughty bi-plane to do battle in.

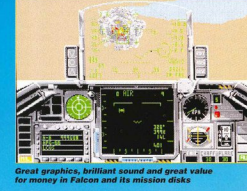
KOTS is a World War I simulation of aerial combat between biplanes and there are 20 aircraft with varying performances to choose from.

During the game you are given various missions to complete such as escorting a bomber on a mission to protect it from attack, and balloon busting, where you have to shoot down observation and barrage balloons.

While playing, you will also receive the odd reports of enemy pilots who are becoming famous due to successful dog fights, where they were last seen and a description of their planes.

If you wish, you can hunt for these "Ace" pilots and down them in order to become famous yourself. The graphics are very good, right down to the grained woodwork of the cockpit.

F15 graphics are very similar to F19's. The object on the fround is a SAM sight



Great graphics, brilliant sound and great value for money in Falcon and its mission disks

The actual speed and smoothness of movement is quite good, the sound effects are sparse but adequate.

The dog fighting section of KOTS is brilliant. You have to get really close to the enemy to shoot him down and with the inherent difficulty in the control of biplanes making things a little tricky, there's a great sense of achievement when you blast a enemy plane and see it plummet to the ground.

F-15 Strike Eagle II

Way back in the days of the old 8-bit Atari computers, F-15 Strike Eagle was released and became the best selling flight simulator on all computer formats. So, with a string of best selling flight simulators under their belt over the past years, Microprose decided to bring F-15 Strike Eagle up to date with new 3D graphics technology that was learned along the way.

F-15 Strike Eagle II is the result and certainly retains the shoot-'em-up feel of the original. F-15 bears a strong resemblance to F-19 Stealth Fighter, especially in its graphics, which are very similar.

There are enhancements such as director mode which allows you to view movie-like sequences of surface to air missiles being launched against you.

All in all it is generally the same as F-19 except the battle areas include the Middle East and Persian Gulf as well as the North Cape and Central European theatres.

Falcon

Considering Falcon was written back in 1987, it is remarkable indeed that there is no flight simulator which offers an equal level of realism and gameplay.

Now with Falcon and the Falcon mission disks available on budget labels (Falcon £14.95, Mission Disks £9.99), from Action Sixteen it is incredible value for money.

Graphically, Falcon is excellent, particularly the cockpit instrumentation display. The speed and smoothness of movement is nearly as good as ProFlight's and although mouse control is not very easy, it has very good joystick response.

Sound effects are outstanding too with digitised effects such as the Gatling gun and missile launches, and audible threat warnings including digitised speech right down to the ricocheting of bullets off the canopy as an enemy fighter sprays you.

There are 12 increasingly difficult missions to attempt which can be played at varying levels of difficulty from First Lieutenant to Colonel.

If you successfully complete a mission, you will receive medals depending on how well you did. There is also a black box feature for 1Mb STs that records your manoeuvres, similar to that shown in the film Top Gun where pilots' performances were shown on computer.

Varying

This allows you to see how well you did in a dog fight and displays lines showing your flight path from varying views.

If 12 missions aren't enough for you, there are two other mission disks available, offering a total of 24 new missions, along with enhanced weaponry and beyond-visual-range missiles as well as more intelligent enemies and new terrain detail.

However, you have not experienced Falcon until you have gone head to head with another player using a modem cable to hook up to another machine. This is the ultimate in game-playing and is ignored too much in the simulation software field.

With its new price and excellent gameplay, along with the mission disks, Falcon should be on the top of your simulation list.

And the future...

To our knowledge there aren't any totally new packages due for the ST in the next few months.

While SubLogic appear to have divorced themselves from the ST, Thalion promise they will continue improving A320 Airbus, with a version based in North America due before Christmas.

And with the Falcon computer on the way with superior sound and graphics, flight simulation on home computers could really take off.

Thalion say that providing it sells well, they will convert A320 and work on new projects for the machine.

● Pictures courtesy of Rediffusion Simulation

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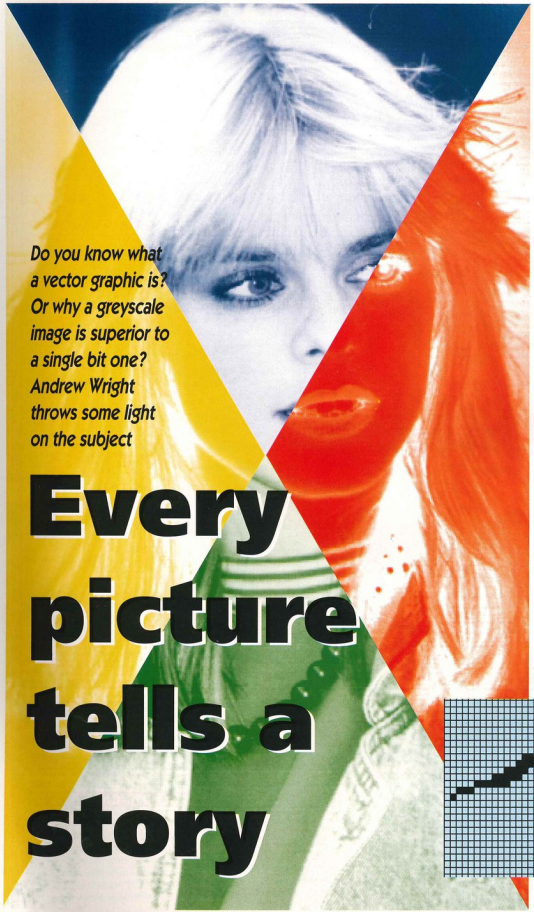


Do you know what a vector graphic is? Or why a greyscale image is superior to a single bit one? Andrew Wright throws some light on the subject

Every picture tells a story

Virtually every ST owner in the country has dabbled in graphics at some time or another – there are plenty of painting and drawing packages for the ST and many new machines come bundled with one of the all-time favourites such as Degas Elite or Hyperpaint.

But there's much more to graphics than doodling pretty pictures. In fact most of the graphics packages appearing on the market today assume a much higher knowledge of the subject, with some pretty powerful tools for those with a basic understanding of how to use them.

Graphics packages can be divided into four main types. There are paint packages such as Neochrome for creating colour pictures, art packages such as Megapaint II for working in mono, drawing packages such as Hyperdraw and Didot Lineart for vector drawing, and image processing packages such as Reprostudio for manipulating scanned images.

Of course, many programs can do several jobs – Megapaint Professional can work in both vector and bitmap modes while Reprostudio can handle greyscale images as well as standard mono bitmaps.

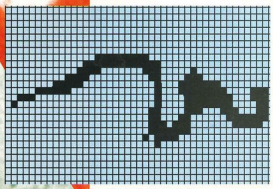
Bitmap versus vector

Most people have only a vague idea of the difference between bitmap images and vector drawings. Imagine the ST's mono screen as a grid with 640 squares along and 400 down.

The only way to represent anything on the screen is to fill in one of the blank grid squares. In mono you have a choice of black, black or black – a bit like the early Model T Ford. With a o or med-res screen you're a little better off.

You can turn each square a different colour (you have a choice of 16 colours in lo and four in med-res) but the downside is that there are less of them (320 by 200 in lo and 640 by 200 in med-res).

Naturally, paint packages are designed to make the process of colour-



This rather unartistic squiggle illustrates the nature of bitmap graphics

ing in the grid squares a little easier than it would be manually – they have various tools that behave in a similar way to paintbrushes or spray cans.

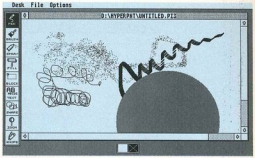
These make it easier to fill in several pixels (for this is what each grid square is) at a time. There are also handy tools such as erasers and pre-defined shapes to make life easier.

Vector graphics, on the other hand, are constructed in a totally different way. Instead of drawing a line by filling in several adjoining pixels, all you do is dictate the start and end point of the line and the program works out the rest. Quite complex shapes like polygons and circles – and even Bezier curves in some programs – can be defined in this way.

Not only is the storage space required much less than the equivalent bitmap, but the drawing can be printed out at the highest possible resolution of the output device.

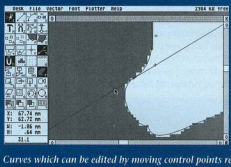
All this doesn't make vector graphics ➤

Hyperpaint – a good colour/mono paint package



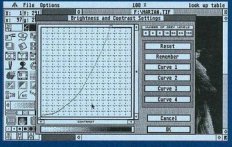
Graphics glossary

Editing Bezier curves in Avant Vector



Bezier curves *Curves which can be edited by moving control points representing tangents to the curve itself. These are much easier than trying repeated freehand curves. Any good vector package – and a few bitmap ones too – will have Bezier functionality.*

Playing with contrast in Reprostudio

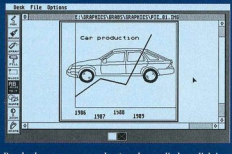


Brightness and contrast *Two image attributes which greyscale editors can alter at will to obtain special effects or simply improve an image's quality.*

Buffer *A very useful facility allowing work to be copied into a temporary storage area. Any subsequent mistakes or changes of mind don't matter – the buffer can then be copied back into the main work area.*

Get into the habit of saving graphics at frequent intervals under different filenames. Early stages can then be returned to at will.

Try using clip art in charts and graphs to liven them up a bit



Clip art *Ready-drawn or scanned artwork supplied on disk in one of the popular file formats can be included in DTP documents.*

Dither *A clever process by which colour or greyscale images can be converted into attractive black-and-white versions for reproduction on a mono screen or a printer.*

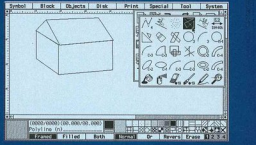
Mask *A facility mainly found in top-end packages, particularly greyscale editors. Areas which have been masked can be protected from any other drawing or erasing functions.*

Drawing mode *The normal drawing mode is Replace – everything underneath is completely hidden by a new object placed over it. The opposite, Transparent mode, lets you see what is behind the new object, provided it is darker in tone.*

Reverse transparent mode reverses the tones of the new object and areas which are not fully black are made transparent. With XOR, or inverse, the tones of the two objects are subtracted from each other so that similar tones become white and different ones are averaged.

Transparent mode is very useful but the last two need to be fully understood before you can make them work for you!

Using Megapaint II's polyline function to create a shape quickly



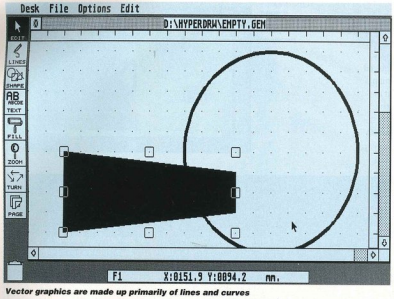
Polyline *A series of lines linked end to end. Good for drawing non-uniform straight edged shapes quickly.*

Raster *Another word for bitmap.*

Smudge or smear *Blends together two or more colours or greyscales. Often used when one image, say a face, has been superimposed on another such as a landscape. The edges can be softened using the smudge facility. It has similar uses in line art drawing.*

Stamp *Used primarily in greyscale editing, the stamp lets you "pick up" brush shaped areas of the image and place them elsewhere. Useful for removing skin blemishes from faces or blotting out eyesores from landscapes!*

Tint *Shade produced by filling a shape with tiny dots. A 50 per cent tint consists of half dots and half background and will appear as a medium grey. Be very wary of tints if you plan on resizing your graphic – they will distort horribly.*



Vector graphics are made up primarily of lines and curves

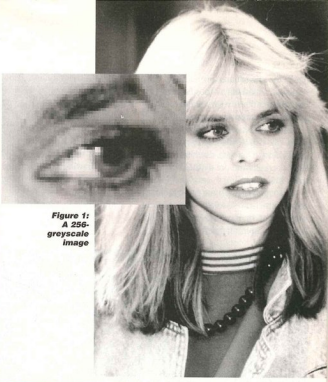
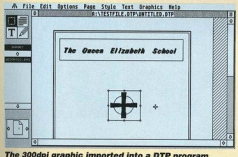


Figure 1: A 256-greyscale image

The trouble with bitmaps

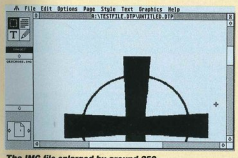
The main problem with bitmaps is the difficulty in resizing them. By way of an example, the image below was scanned at 300dpi, tidied up in Hyperpaint and imported into Timeworks as an IMG file.



The 300dpi graphic imported into a DTP program

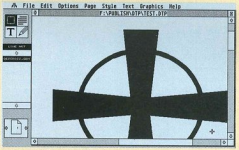
Unfortunately it's a bit too small for the front cover of this school diary and it needs enlarging. Doubling its size exactly is easy enough, but the effective resolution of the image drops to 150dpi.

If we need to increase it by an odd percentage as we so often do in DTP, the jagged edges are exaggerated to the point where the graphic definitely loses its appeal.



The IMG file enlarged by around 250 per cent – note the jagged edges

The answer – especially in this case where it was actually easier to draw the graphic with Hyperdraw than scan the image! – is to use vector graphics. PageStream will let you create your own within the program or you can import them into Timeworks from packages such as Hyperdraw or Easydraw. Calamus users can use Avant Vector, Outline Art or Didot Professional.

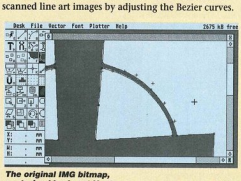


The original IMG bitmap, vectorised by Avant Vector

Actually, there's another solution – convert the bitmap into a vector graphic using a special auto-tracing program such as Avant Vector.

These programs tend to be expensive but the results are well worth it, especially if you do a lot of DTP work and need to use the same image at several different sizes.

It is sometimes a lot easier to "tweak" vectorised, scanned line art images by adjusting the Bezier curves.



The original IMG bitmap, vectorised by Avant Vector

superior to bitmaps. Obviously some types of graphic are best drawn as vectors – company logos which involve lines or circles and technical illustrations such as diagrams and charts are a good example.

For more fanciful, creative graphics such as animals and faces, bitmapped images should be the first choice.

Greyscales are increasing in popularity with cheap hand scanners such as the Power scanner reviewed last month, and some very capable software, notably Reprostudio and Retouche.

A standard bitmap image contains pixels which are either black or white which is perfectly acceptable for line art. A photograph, on the other hand, is a continuous tone image made up of an almost infinite range of shades of grey, from pure white to completely black.

Poor reproduction

It can't accurately be represented in terms of just black or white. If it is, the resulting image is a poor reproduction of the original. Those of you who have tried to photocopy a photograph will have noticed the difficulty – after all, a photocopier is basically a scanner with its own printer.

The answer is to have each pixel represent the level of grey beneath the cell, rather than whether it is just black or white. The drawback is the amount of memory required, both in terms of RAM and in terms of hard disk storage.

A mono bitmap image scanned at 300 dots per inch, only three inches by three inches in size, might take up about 100k.

A 256 greyscale image (an 8-bit image, as eight bits are needed to represent the grey value of each pixel) will take up eight times as much space –

about 800k – making it virtually impossible to load into an ST with less than 2Mb of RAM.

For those set on the technology, however, the results can be well worthwhile. Greyscale images can be resized much more easily without losing their definition and the quality of output is stunning. Figure I shows a 256 greyscale image printed at 2,540dpi while the inset shows how it would look close up on a greyscale monitor.

Dithering

Unfortunately the normal ST monitors such as the SM124 and new SM144 cannot show greyscales on-screen. They use special dithering techniques to represent the greys as accurately as possible given the limitations of the screen which can only show black or white pixels much as a mono bitmap image can.

Figure II shows the same greyscale being edited in Reprostudio – not too impressive when looking at the overall image but when working close up, the

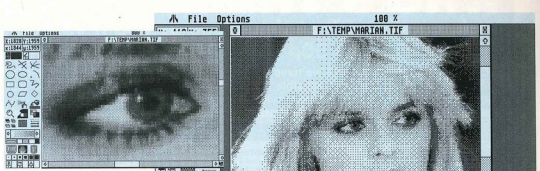


Figure II: Reprostudio represents greyscales as best it can on a standard monitor

greyscales are more readily represented. Using colour on the ST can produce some pretty pictures.

There isn't much that can be done with them however, unless you happen to own a colour printer. Most graphics are created for another purpose entirely – inclusion in desktop published documents of one sort or another. Mono is the order of the day here simply because the cost of full colour printing is still very high. Newsletters, reports, leaflets and posters are largely produced in black and white to keep the cost down so the so-called "serious" art packages often work only mono.

The tools found in modern graphics programs are considerably more sophisticated than simple brushes and pencils. They make light work of illustrations, line art drawings, charts and diagrams using a powerful array of tools.

In the glossary I have included an explanation of some of the more widely used tools as well as examples of them in action. A few other bits of graphics jargon have also been included.

Graphics file formats

Some of the commonly used graphics formats are listed below with the maximum number of bits of colour – or greyscale – the bitmap formats will support.

You can work out the number of colours this represents as two to the power of the number of bits. Hence, an 8-bit file has two to the power eight possible colours, which is 256.

Twenty-four bit files have an almost infinite number of colours (actually it's 16.7 million, but who's arguing?).

Bitmap formats

PI1,2 or 3 – Degas format 4-bits

Degas (Elite) was one of the earliest ST paint programs and its file format has become something of a standard.

It represents the ST's screen at whatever resolution is being used (1 = low resolution, 2 = medium and 3 = high) and thus can't be any larger than around 32k in size with a maximum resolution the same as the ST's screen. As a result, it isn't really suitable for serious DTP work.

PC? (1,2 or 3) files are compressed Degas files, often used to save disk space. The NEO (Neochrome) and Tiny (TNY, TN1, 2 or 3) formats are very similar.

IMG – GEM IMG format (8-bit)

There are actually quite a few variations as the format can handle mono, grey and even full colour images, though most ST software is only capable of using mono IMG files.

It is probably the most popular ST bitmap image format as it can handle high resolution scans and artwork at 300dpi or more.

PCX – PC Paintbrush (24-bit)

There are several variants in the PCX format from mono up to full colour. PC public domain libraries have extensive collections of clip art in PCX format, and both Timeworks and PageStream can import them directly.

MAC – MacPaint files (1-bit only)

Some good clip art is available in MacPaint's 576 by 720 pixel mono-only format. Programs such as Pixwitch will happily convert across to an ST format.

GIF – Compuserve Interchange Format (8-bit)

GIF files can contain multiple images up to any size. They can often be found on bulletin boards and online networks and are highly compressed.

An increasing number of ST utilities exist for manipulating and converting them, including the excellent GEMview.

TIFF – Tagged Image File Format (8-bit)

TIFF is probably the world's most widely used bitmap image format – most applications on the Mac and PC support it and the ST isn't too far behind, with top end packages such as Didot Professional, Retouche and Reprostudio all supporting it. Unfortunately there are scores of variations and it is often difficult to persuade ST applications to read PC-created TIFF files.

Other ST bitmap formats

PAC – from the STAD art/drawing package
ART – from the Art Director paint package
DOO – from the Doodle paint package
SC0,1,2 – These are large format colour or mono format files from NVision's Paintworks package, dependent upon screen resolution.
SPC/SPU – from the Spectrum 512 paint package

IFF/LBM – Amiga Interchange/Deluxe Paint format (8-bits)

Not widely used on the ST but there are conversion utilities available.

Vector file formats

EPS – Encapsulated PostScript

The EPS format is actually a type of PostScript file that can contain both bitmapped and vector graphics. It can also contain a "preview" which is a small black-and-white TIFF image which will give you a rough idea of what the EPS file will look like. Avant Vector can create EPS files.

GEM – GEM metafile format

The standard ST vector format is GEM but there are several versions from v1.0 through to v3. Earlier versions as used in Hyperdraw and Easydraw 2 cannot handle Bezier curves but the latest GEM/3 standard can store Beziers and full colour.

Programs such as Avant Vector and Didot Linear can load and save GEM/3 files.

CVG – Calamus vector graphics format

DMC's Calamus uses its own vector graphics format – the big advantage over GEM files is that outline fonts and hence text can be included.

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Characters between asterisks show special requirements:
M = Mono Ss *C* = Colour Ss
D = Double Sided Disk *V* = 1 Meg Ram
S = Not STE or Rainbow TOS

DESK ACCESSORIES & UTILITIES

301 Dir printer, RAMdisks, ACC loader etc.
302 Clock, calculator,free Ram checker, Breakout .ACCs
328 Calendar, clock, Disk Manager .ACCs
303 Fast copier. Hex Dump. Degas to Neo, Koala to Degas & Neo to Degas. Seved disk editor.
337 Utils for Hard Disks
339 Printer drivers for IST Word, Degas & Gemfont.
385 68000 assembler, an Address,/ Mailing list.
824 PSCSWITCH + Changes all graphic on. Hi-Res/Colour emulators. BBOOT, drive, SWITCHER, 2 progs in memory.
517 STE BOOTup!, med res bootup.
886 DIY DEMO, Make scrolling demos featuring a title screen & scrolling message.
836 ARC file compiler. BICLOCK to set time/date. KEYEDIT reconfigure the keyboard to print any characters. MONOEMU v5.0.
881 100% IBM compatible transformer. ARC SHELL v1.91, DC-dock. STARGEM. VIRUS DISTRUCTION UTILITY V2.1.
854 The DATABASE CONSTRUCTION SET. Spellchecker. DISPEL
378 GULAM CLI shell/Command Line interpreter.
303 DIFLOPY1, a disk sector editor.
303 Various progs for printing all kinds of labels.*M*
883 CHK 2.5 Everything you need to know about a disk. DCOPY+ 63. Desktop Manager v2.1.
585 ANTIDOTE, Superb Virus killer.
857 DISKMECH is a powerful disk analyser/ archiver/ editor/ CHECKER, vastly improved control panel.
561 GENESIS is a Fractal landscape generator. FORMAT 10. VIKILLER. PCOMMAND. XUTILES.
884 AMC GOOL GDOS replacement. ARC SHELL v1.98. DISK TOOLS v2.05.
397 BOOTGEN, maintain disk sectors Boot.
504 MOUSE TRICKS, a ACC extensive control over mouse movement & menu style.
863 MX-2 v2.5 a multi-tasking & multi-user environment.*D*
834 DOUBLE CLICK format v3.05 9/10 sectors, 80/82 tracks.
842 DIC-edit done, Disk engineer v3.01.
382 Archive utilities, including ARC, ESSQUZ, SQUEEZE, STPACK, STSQ etc.
324 ADDRESS CAL, limited address book & label printer, Disk catalogger.
644 WPTOOLS, written for IST word, inc, alarm clock, Printer selection, Wordcount, Relabel(Disk volume), Format, Undelete file.
747 TURTLE, a RMD disk backup utility.
728 HEADSTART V1.1, excellent program that allows you to autoboot programs, inc. GEM from an Autofolder. +
733 GEMINI Desktop replacement. All English version of a replacement Desktop similar to NEODesk. *SD*
384 On this disk is a prog called LABEL EXPERT good label maker. Preset formats for floppy disks, video, & cassette tapes. *M*
843 AUTOGEM autoboots any Gem program when booting. XFORMAT2 extended formatter & VC Spreadsheet.
373 STAR LC-10 UTILITIES. PRINTER config utils for 1st WORD & 1st WORD PLUS. TRANSPOST 96 download alternative character sets. STARACC.ACC control the usual functions of the Star LC-10 multi-font printer.
740 SUPER VKILLER detects 5 different viruses,recognises 7 anti-viruses & 13 other types of boot sector.
757 Files to assist in graphic print-outs for 24 pin Dot Matrix printers.
757 GEM FIX. This is a great variant of Neodesk.
760 RECOVER is a file recovery utility.
438 REAL TIME MULTI-TASKING OPERATING SYSTEM. *D*
439 GEMDOS USERS GUIDE.
737 GEM PLUS. This is a great variant of Neodesk. Alter desktop icons, design your own, and do the same with progs.
383 diMAN tutorial. Visicalc style spreadsheet. Disk formatter. Multi-purpose file print util. Mnumdisk. acc. +
732 CHK 2.5 - Disk checker. Desktop Manager v2.1. IBM MODIFIER alters DS 4tari disks so that an IBM can read them.+
885 PROMOUSE self-adjusting mouse accelerator. RATTRAP locks out menus. TURBODOS MAXIDISK reset proof RamDisk.
333 Printer drivers for use in progs such as IST Word, Degas & Gemfont.
444 XCONTROL: ATARI's latest TT control panel accessory for all STs.
448 CYPHER: Encodes pics so that they cannot be loaded into normal art packages. LITTLE GREEN SELECTOR.
454 MEMFILE 2.0. Memory & powerful disk editor.
457 HD SCAN 1.6: Comprehensive shareware hard drive manager.
481 STDCAT V4.0. disk catalogger
623 SUPEROOT V7.0

GRAPHIC, FONT AND ART/DRAWING DISKS

323 Great digitised pictures. 3 from Raiders of the Lost Arc & 12 from Ghostbusters.
375 FONTEDIT v3.0, Editor & loaders for fonts & downloaded fonts. *C*
577 PALART. art program with full docs.*C*
361 E-PLAN CAD, stock list facility.*M*
361 COLUMBIA, drawing prog and 3D. Studio (*M*) menu driven drawing package. Both German.
360 DOODLE, art package, Mono & Colour version.
357 ST GRAPH. comprehensive graph program
376 FONTSS, Screen & desktop fonts. Columbo, Devil, Kennedy, Sahara, Superba, Thames & Universal Roman.
376 DELUXE FONTMASTER v2.0 *MD*
757 CANVAS, a great art package, fully supports STE.
379 PALETTE MASTER, art package, great features, up to 512 colours. *C*
388 Pics, Mona Lisa, Moon, ST keyboard, Planet, Yoshoo, Sun and more.
833 Amiga & Macguidt pic files plus PICSWITCH which can read Neo, Degas, etc.
888 FRACKTAL a fractal drawing program from Germany. Fractal landscape prog.
888 DRAWMATE an excellent German program. *D*+
880 COLOURBURST 3000 v0.2, add different colours to pictures from graphics progs.*C*+
881 ANSI-ST, HIGHLY PROFESSIONAL quality animation system.
386 MASTERPAINT, drawing package, Mon & Col. LITTLE PAINTER.
374 PICTURE, great utility for enlarging, reformatting & manipulating pics.*M*
889 AMI v3.21, An image processing package.*D*+
901 PALART. Excellent An excellent German art package.*M*
902 FONTS. 20 cartoons with display prog.*C*
777 PALART. Excellent art program with full docs on disk. Excellent features. *C*
393 ST CAD v2.1, mod/high res CAD package.
393 THE ARTIST, drawing package.*M*
393 JILLCAD, a good shareware CAD package. Lots of features.(2D)Add-ons available. *SD*
771 FONTS, Calamus PS fonts from USA. Advert, Babyteh, Barnum, Carolina, Casual, Celtic, Chancery Bold, Chancery + others.*S*
775 TOME CONSTRUCTOR: animate objects & text. FACE ANIMATOR.*M*
775 FULL SCREEN CONSTRUCTION KIT V1.9.*DX*

CLIP ART

521 Various human figures, different cartoons, Titles & scenes.
522 Sports figures of high quality, July 4th logos.
523 Children's whimsical & elaborate fonts & Christmas cartoons.
534 Food images, Atari ST & Fuji logo etc. Disks, Computers, Robots & other Sci-fi.
525 Faces & Eyes, concentrating upon expressions, Horses, Building plan symbols & some different Christmas cartoons.
526 American trademarks from the 1920's & 1930's. Some humorous cartoons.
527 Various borders, tints etc. High arty & cartoons - Picasso to small Bully animals.
528 Buildings, IMG/IFF show progs.Various fruit, over 20 arrows & Acorn symbol.
533 Occasional Clips, Various Characters etc.
534 Loads more fruit, Vegetables.
535 Herbs & Kitchen parts.
536 More Arrows, Artdeco, Breakfast, cups/glasses & more kitchen parts.
537 Humorous clips plus the individual letters A-Z.
737 Babies, Boys & girls.
739 More Girls, Scrolls & Occasional clips.
740 More Artdeco, More Boy & Girl
741 More Varied Humorous clips.

WORDPROCESSING & DESKTOP PUBLISHING

727A-F TEX, 6 DISK PACK. Includes TEX the document processor & typesetting system.*DM*
855 1ST WORD Word'processor. Fully GEM based professional wordprocessor.
811 SSS/HUGO: EASY TEXT v1.2 Fully working Desk Top Publishing demo.
862 ST WRITER ELITE,4.1. Latest version. additional utils on disk 363.
758 STFAGE is a super fast editor. It produces pure ASCII files for writing programs.
850 REVENGE V2.01: Super intelligent document displayer.
877 ST FOLDING EDITOR v0.9A Shareware 'folding' text editor which allows sections, sub-sections & paragraphs to be made invisible so the structure of the document can be clear.

GAMES DISKS

All games are in colour unless otherwise stated.
343 SHIELDCK, A chaotic game Sherlock. II Bozo City. Sci-Fi text adventure. Around The World In 80 Days, collect 17 souvenirs in order to succeed.* M *
317 Battleships, Checkers, Maze, Megarabi (Mono), Pool.
547 ADDICTION, card game patience, graphics *S*.
363 SLEUTH, A DETEKTIVE adventure shareware. LOCATION CRISSLEPRIDGE.
891 SUPERBREAKOUT, 40 brick types.*M*
894 DEEPLAIR, 2 player underwater shoot' em up.
554 NAPOLEON, conquerer Europe.*M*
553 Eamon is an Adventure game writing write your own games. Comes with 5 games.
356 CHESSMATE, as a 3D chess game. SPOOKS is a great PACMAN clone. BELLUM INTERNEICINUM, Galaxian clone. *S*
781 MAKLA BREAK, a great Trivia game leaning heavily towards Snooker rules.
761 EMPIRE BUILDER property development, LOST TREASURE JUMPSTER.
762 RUSH, move bricks to create a way out for the ball.*S*
763 MAPPERJACK superb platform game.*S*
764 YAHTZY. *S*
765 UPCHAT shoot the chemics *S*.
765 COMPANION shoot'em up in outer space.
548 ENGLAND TEAM MANAGER, Football team management. MILEGAME.
566 DIE ALIEN BLOB, shoot the coloured balls & avoid the laser cannons.
344 Ballet, arcade-castle & cannons game graphic adv.*M*
349 ADVENTURE WRITING SYSTEM.
348 ATAXTOLLA, Defeat the terrorists.*S*
768 ROBOTZ, highly addictive & very playable game. 40 levels.
847 FRUIT MACHINE,fruit machine simulator.
545 SLIDER, good quality puzzle game with 3 levels.*S*
507 SKULDUGGERY, note in Mono & Colour. 100 levels.
538 ATOMS is a mentally challenging game for 2-4 players. KILLER.CHESS. AMMOTRACK race & blast'em game.*S*
545 SKIDPAN, motor racing game.*S*
729 STOCKMARKET, Wheel & deal. GALACTIC WARRIORS, a good shoot'em-up.
546 ADVENTURE Colossal Cave type adventure.
855 EXPLODE outwit an opponent on a Chessboard type layout. BALLZONE an Arcanoid clone. JITTERBUG, try & rescue aliens.
528 FLOYD THE DROID, an ultra fast shoot'em-up.
529 CAVARIOR, a Flight Simulator.
531 COMPUTER PINBALL. DEVASTATOR & a DARTS game.
576 TALESPIN. The wolf and the 7 kids.
513 FUZZBALL a great platform game
514 WIZZARD'S LAIR complete text & graphic adventure.
760 UNDER BERKWOOD massive graphic adventure
762 NAVAL BATTLE A good version of the good old Battleships
576 HARRIS WENT SKING, *S*
783 CHESS,MONOPOLY, BACKGAMMON, LASER CHESS
709 CORE WARD, You have to write rival programs.
710 VIRUS, a game with great graphics and sound.*S*
711 FLOYDS, a bombing run game
404 GLOB, you collect cherry cakes while avoiding pursuers.

405 ROBBING CHAMP.*S*
406 TRACKER, drive your tracker through enemy.
407 OVERLANDER fly in & destroy the enemy base.
408 CHANCE, destroy the Archons
409 ESCAPE FORM THE TOMB OF RA, collect jewels to prolong your life, find the secret passages.
410 MUTANT, A reactor goes out of control. Workers mutate. You must get to the end cavern and destroy it.
411 KEY TO ATLANTIS, excellent scrolling shoot'em up.
412 GRAND PRIX, good fast racing game.*S*
413 MARS MAZE, good platform game.*S*
414 STEEL, blast everything in sight.
415 BATTLE COMMAND, Missile Command clone.
416 WHEEL OF FORTUNE, good quiz base on TV program.
417 HEIGHBOG; FROGGER clone.*S*
418 THE NAME GAME, based upon the Sun puzzle.
419 CHESS, a very good implementation.
421 COMPANY, business simulation.
422 MOTORBIKE, drive your bike around the track.
423 TARP, great text adventure.D & D type.
467 BATTLE FOR THE THRONE, a role playing adv.
468 LLAMATRON, A great Shareware game.
469 VIDEO POKER, Las Vegas poker playing machine.
452 DERRICK THE DROID: A great mix of platform, Shoot'em up & puzzle game.
772 PORK: I: A parody of the Infocom adventure ZORK I.
784 PORK II: Another send up of the ZORK series.
785 MORIA. A fantasy role playing game.*D*
779 PICTURE CONCENTRATION: Children's recognition & matching game.
788 ROLL N' NUDGE:fruit machine game.
788 DUNGEON: Multi choice fantasy adventure with some humour.
778 C ADVENTURE TOOL KIT.
712 ASYLUM, Text adventure set in an asylum.
713 HACKMAN: 50$ level Pacman clone.
714 OLYMPUS'ATLAS II
716 FROGGY: Frogger arcade clone.
460 NETHACK. THE ADVENTURE, text based adv.
461 STARMACK: Guides your craft around the various levels.
466 A NIGHT ON THE TOWN text graphic adv.
467 TILE GAME, rearrange letters.*S*
469 SOKO, 50 levels.*S*
470 QUIZ. COMPUTER EDUCATION KIT. STOS TRACKER FILESPY 1.1.*D*
597 MEGABOMB, RIPCORD, SPACEWARE, BUGS
491 BATTLE SCAPE game
600 FRUSTRATION & CRISS CROSS. ZPOKER.*M*
601 BACKGAMMON & POKER SQUARES. *M*
605 OZONE arcade game
606 FLY BOMB & SANTAS WORKSHOP
607 PENGUIN, shareware.
608 CROCODILES PASTIMES.
609 AFFAIR OF THE BRITONS: Adv/ Arc game.
620 KOZMIC 2.*STE*
621 REVENGE OF THE MUTANT CAMELS.
622 MR DICE, KLAXTRA
629 SPACE INVADERS
630 BLOCKADE
631 INFILTRATION, game
799 SUM OUT BROTHERS: Compilation disk No.1. MAD MOLE, great version of the Bouldersdash, LASER RACE, defeat enemy laser cars in the arena.. ALIEN DEFENCE, Speed super fast shoot'em-up (ST).
629 DARKNESS IS FOREVER, adventure full graphics in Mono or med res.*M*
554 Diamond Miner is a multi-screen game with a built in games editor. Snails & a cand game called Slug.* M *
555 CYBERNOID, The ship contains rare alien lifeforms which you have to catch.
536 Arcade games including Warzone, Daleks, Haunted House & Monsenews.
547 ADDICTION, a great version of the card game patience, great graphics (not STE).
329 Checkers, The Original Adventure, Pool & a fun Chess game * M *
891 SUPERBREAKOUT, There are over 40 brick types all with special features.*M*
351 HACK 1, a Dungeons & Dragons text adventure with graphic maps.
351 SCANNER 4 checkers game, SPACEWAR, 2 space ships battle it out
707 CENTAUR, a Horizontal scrolling shoot'em up.
786 SIMPLE DRAW V3.4: A great art package that works in medium & high Res. Degas compatible samples included. (Uses foreign)
787 HYPERTEXT: Shareware prog suitable for the production of very professional documents. Similar to a DTP but more flexible, pics & text easily mixed on screen *MD*

SHOWING DISKMAG

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458 TETRIS:Classic 2D tumbling blocks game that's highly addic tive(MONO). PUZZLEMANIA: Multi level mayhem, highly addictive puzzle game wher you have to plan your way around the maze, turn on the generator and trap the deidels.[COL]

PROGRAMMING/LANGUAGE DISKS

574 680 ASSEMBLER.
707 STOS SOUND FX CREATOR.
325 XLISP v1.7, Experimental object orientated language. Includes manuel of docs.
828 STOS FUN, is a utility that enables you to run STOS programs without STOS.
312, 313 & 314, C LANGUAGE DISKS 1, 2 & 3 of Elementary C, 3 disks.
305 CPM EMULATOR, This is a CPM-8 version 2.0.
306 CPM UTILITIES, for 305.
334 C COMPILER, boot up utility, ram disk, & CLI
853 PROGRAMMING EDITORS, CONTEXT v2, PRO-ED & P-EDIT.
839 Nigel Smith's ST 68000 Ref. pop up guide v2.0
887 SOZOBON C, the best PD C compiler with full K & R compiler support.*D*
759 Sprite designer & editor.
440 C TUTORIAL, superb disk manual that provides an excellent intro into C programming.
374 GNU GDB, capable source level debugger. SZ ADB, debugger for SOZOBON C.*D*
475 MERIC, GEM resource construction utility.
476 MODPAS, Pascal Compiler with CLI.*D*
711 6800 M/C course by Mark Van Der Boer.

COMMUNICATIONS DISKS

364 PACK-ET-TERM v3.3A, radio package. YARP split screen RTTY terminal prog.
336 XMODEM, MODEM 7, a multiple file transfer utility, transfer a whole disk in one go. Plenty of docs.
366 UNITERM v2.0a, docs inc. Superb comms packge. Tokugawn transformer prog
792 VANTERM 3.71 & 3.8 PD Communications package. PUDAS START, standard IS232 comms puck.
616 HagTerm Elite V3.3

APPLICATIONS SPREADSHEETS, DATABASES ETC.

826 DATABASE, GEM driven database.
827 ST SHEET spreadsheet.*C*
830 HOME ACCOUNTS v1.0 Pullin. 43 different statements in memory. 100 entries per statement.*C* NOT STE.
755 PERSONAL DTB is a database for storing your names & addresses & creating labels or personalise mail shots.
873 B/STAT v2.01, graphing & statistical analysis program.*D/N*
374 QPUS v2.2, GEM based spreadsheet & charting program.*D/N*
543 WG DATA, no frills high quality database.
337 DOUBLE SENTRY, fully working accounts package, no VAT.
541 INVENTORY PRO V2.0 is a fully featured stock control system.
432 TCOS a great database that allows data to be structured in a tree arrangement.
435 ZAP.CARD, card type database. BANKER, keep track of your bank account.
434 SHEET V2, fully featured spreadsheet.
455 NAMEINFO.An excellent database, Med & High res.

MUSIC

875 COMPOSER, A music creation program.
779 CZ'EXOND, transfer data from CZ101 to ST midi.
720 MUSIC WRITER, create music on screen.
721A-B -SOUNDTRACKER Player & MODULES. ZOWEE, TIMEDMO, SHORT, AUSIDOUT, GRILLED MUSIC1, MUSIC2, DELTA2, ECSTASY, HOWDEEP, BALLJAM, TONOPLAS, IVORY, MADNESS, OPERATE.*D* 2 Disks!!
550 Digital sound demo, Degas & Neo graphics. Quartet demo, 4 channel sequencer.*C*
670 SINGING CAUFORNIAN RAISONS 4 piece group of singing raisons *D/N*.
536 CASIO CZ ROUTINES & EDITOR,2 synthesizer editors/librarian programs.
871 CHANNEL SCOPE, an early version of Midi Monitor.
753 XBIOS Music Construction Kit.
754 PERCUSSAMAN is a 4 track, 16 instrument, digitally synthesised sequencer.
590 SOUNDTRACKER PLAYER & MODULES. D_DREAD1, D_DREAD2, PAT_MIX, RVB_DEMO, SPREAD.
767 MICHAEL JACKSON BAD, digitised song & graphics.
778 TWB DIGI-SYNTH 4/9 MOD files with player.Shadow Warriors Intro, Stress, Show, All, Biomix, Grandmix, Harleymix, Homey, Saexion.*D*
598 MIDI v 2.0 Med/High res Midi monitor. EX800v2 DATA LIBRARIAN, Med/High res. TUNING 2 v2. MIDI editors, AKAI S88 & YAMAHA DX100.
687 Daybreak Step Time Sequencer v.3.
660 GHETTOBLASTER, a simple but enjoyable demo designer. LOW RES.
477 MFF, music design package from Yugoslavia. Comprehensive package in English.*D/N*

EDUCATIONAL

859 REBUS WRITER, This is a superb program, design & print rebuses.
341 BARNYARD the animals from memory.*C*
555 WELCOME TO CHEMISTRY V2.8.*D*
554 CHUNNEL, A French to English game & vice-versa *C*
539 TYPING TUTOR(2) A very good package, full documentation.
557 SPELLING MADE EASY, The computer speaks the word & you then type in the correct spelling.
558 MATHS MADE EASY, great prog with speech prompts.
877 KIDGRAPH, painting prog. which lets children. KIDMUSIC, KIDPIANO, KIDPOTATO.*C*
539 KEYBLISHER, DVT for the young.
424 DOTZDOT, join the dots to make pics. Also create your own. KIDCOLOUR, introduces colours to young children. KIDSHAPE.
436 THE BODY SHOP, introduces the locations of all main bones & joints.
427 SOLAR SYSTEM GEOGRAPHY.
428 GEOGRAPHY TUTOR, a great shareware package. Covers Europe.
429 ZOO MAKER, you are asked questions & the computer tells you your behavioural.
430 ME FIRST, put pics in the correct order. BUTTERFLY IN THE PARK, find the hidden boxes in the park.

GENERAL

855 CONSTELLATIONS. A comprehensive Astronomers disk *M*
701 PLANETARIUM, statistics on various planets/moons.
810 THE PLANETS, slide show around the planets, plenty of pics, facts & figures.*D*
549 POOLS PREDICTION SYSTEM.
462 AUTOROUTE DEMO, covers just the south of England.
432 ST TOUR, guided tour of your ST.
833 YOUR SECOND ATARI MANUAL A 250 kbyte text file of the book.
776 ST TECHNICAL MANUAL: ATARI GEMDOS REFERENCE MANUAL, ENGINEERING HARDWARE SPECIFICATION OF THE ATARI ST, A HITCH-HIKERS GUIDE TO THE BIOS and PROFESSIONAL GEM.
437 BUSINESS LETTERS, 100 business style letters in ASCII code.
717 ASSISTANT CHEF 1: 42 great recipes.
478 ASTRO 22: a professional Astrology program.

DEMO's

586 LIFE'S A BITCH, demo by The Lost Boys *D*
587 STEVES COMP DEMO NO.1 Bat Demo, Micronix II, Fuji Book.*D*
588 STEVE'S COMP' DEMO NO.2 Megabang, Robotnix, & Magicstyx.*D*
589 STEVE'S COMP' DEMO NO.3 Micronix, Stingray & Ballit.*D*
568 THE DEFINITIVE DEMO, by The Lost Boys.*D*
569 SLATATANIC CULT, Music Demo 1 & Music Demo II*D*
591 ASTERIX DEMO, digital sound & pics.
592 TRANSVESTANIA DEMO by The Lost Boys *D*
542 REFLEX DEMO, THE OPPOSITION *D*
542 REFLEX DEMO, THE OPPOSITION *D*
599 COUNTERPOINT DEMO
679 CUDDLY DEMOS *D* Not STE
488 PO'ZO, TCB Sound tracker, Micromix 3, TLT & Yello demos.

NEW ADDITIONS

610 FASTBASE: great DTB
611 INTRO CREATOR, spectacular effects *D*
615 COMPACT OFFICE MANAGEMENT PROG comprehensive*D*
626 EDITVTH V1.2.
632 MASTER DOODLE.
632 ST_ART, Low Res
633 DAYLIGHT ROBBERY
634 MAGASNAP,FASTRAM[ACC]
635 TENNIS.
636 MOUNTAIN, LYSTEM.fractals
640 ACCOMPANIST 2.4.
644 ARTPRINT *M*
653 FCHICKER V4 & FLISTER AUTOLOADER.
658 ARCSHELL 2.05.
665 ARMOURLITE game
666 JAMES desktop buffer.
667 GRAV, rotate & thrust game.
674 TOP DOG, Greyhound form prediction system.
675 BLACK DAWN, Adventure with very nice graphics. Destroy the Lord Dam of the Narcellists. *D*
681 FORMFINDER V2.1, loads of features, limited to 10 runners per race & no print option. RIP IT UP, over 30 questions to teach & test your knowledge on road signs & symbols. Both shareware.
682 MASTERTIME, Educational Shareware program to teach the time with Digital & Analogue clock options. The difficulty level is graduated.
683 RAMWORLD, 3D World & Object creator & viewer Shareware.
704 COLLECT, vertical and horizontal scrolling game. Battle the robots & obstacles.
707 SHOWMEM V1.5, runs a .grg or .acc on all STs & TTs.

A technical utility for utilising & minimising memory usage. N_SYSCOM1.1, use to see Gemdos, Bios, Xbios & Gem actions your computer is doing on screen. +
110 HPCHROMI, This program prints Degas & Neo pics in colour on HP Deskjet printers.
111 SLAYER. The game is not like a standard text adventure whatsoever. It has over 600 locations, no verb input and over 50 different endings. Docs on disk *N*
112 PLOTTING, full instructions on the disk. Comes with a construction option. Manoeuvre blocks by hitting them with the same marked block.
115 1st WORD .IMG FILES. 186 *img files. A great selection. Something for everyone, courtesy of L. G. Robinson.
117 UTILITIES by A. Sutton, The Address book v1, address database with print options, search etc, load & edit printer drivers. BRAKCHECK, is a short bracket checking programming aid. DEMCRYPT, disk encryption for encrypting "personnel" files. .FORMATER, formatter with a fast load format option, simple but effective. SATTERR, a short file attribute modifier which can be used to hide or protect files.
119 GAMEPACK 2 from Evictronics, AWARI, Ancient African game played with 64 bowls & 36 beads. NIBBLERS, fast away at the biscuit, the person who eats the last piece is the loser. QUEEN (*N*) Based on the moves of the Queen in chess, player verses computer. SOLITAIRE, simple variant. TRAFFIC JAM, Control London's traffic lights.
140 BLAT, great 3 in a row falling block game (STE only).
141 MYSTIC WELL, Dungeonmaster type adv.
142 MINDLOCK, Trivia quiz game, various subjects STE only. *N*
143 ANARCHY ACADEMY, great 3D shareware game.
144 T-GAME, good falling block Tetris type game.
145 GRANDAD & THE QUEST FOR THE HOLEY VEST, the ultimate adventure? *D/N*
159 VIOLENCE!, vertical scrolling shoot 'em up in the Xenon mould.
160 CYBERSNAKE, variant of the classic 'snake game'.
161 UNKULLAH'S UNDERWORLD, large fantasy text adventure. *N*
162 PARLO & THE GLOD OF MONTEZUMA, Fast action Boulderdash type game.
163 NUTHOUSE, Massive demo with 18 minutes of digital music *D*
164 SO WHAT, 17 great demo's from the Cure Bears.
165 OVERDRIVE, Plasma fractals etc, demo by Aggression.
166 ALCHEMIE JR, Great Swiss multi-window/multi-task sequenzer. *N*
167 SAGROTAN, great virus killer. *N*
168 CRACK ART, Excellent German art package. *D*
169 STAC, The ST Adventure Creator, now PD.
170 JC MEGA MENU, Menu creator with smart fonts, music, program selector etc.
171 JIGGERS, a strategy game of coloured squares to make you think hard,

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THE CoverDisk

Amiga Emulator

True Amiga emulation? Run it and see

Programmed by: Philip A Nelson

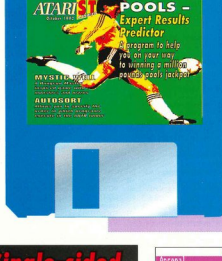
Configuration: all STs, lo-res

Filenames: AMIGA_EM.DOC – documentation file, AMIGA_EM.PRG – executable program

OK, I know this may seem like sacrilege, your beloved ST emulating that machine, but we couldn't resist it.

After all, slaving away producing a CoverDisk each month is not a very easy job and having to watch all those little stars on the screen while the ST compacts and archives huge amounts of data can be extremely dull. We have to have some fun you know.

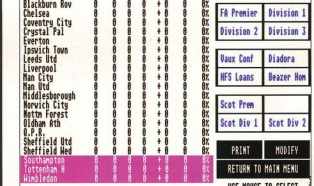
Anyway, it's not exactly a serious attempt at Amiga emulation, just a bit of a lark really, so run it and see what Amiga owners get when they boot up their machine. Not as pretty and easy to use as the ST Desktop, I can tell you.



What a packed disk it is this month! There's a Dungeon Master-type game called Mystic Well, a football pools prediction program featuring the FA Premier League, and for hard drive owners, a full backup utility

Single-sided service

Single-sided drive users wanting the contents on this month's disk on single-sided disks should send their original CoverDisk and a cheque for £1.50 – payable to Atari ST User – to SSD Service, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP.



Examine the league table within Pools Expert featuring the FA Premier League

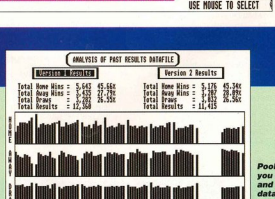
Pools Expert

A program to help you win a million pounds

Programmed by: Brian Campbell

Configuration: all STs, med- and hi-res

Filenames: X_POOLS.TOS – self-extracting archive



Pools allows you to analyse and display data in both numerical and graphical form

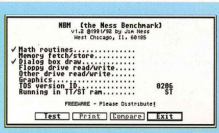
We all would like the odd million pounds or so, wouldn't we? Well, if you are one of the millions who do the pools each week, you know the odds are against you winning the jackpot.

However, with the aid of the Pools Expert results predictor program, you can lower those odds by making your ST do the hard work in calculating the most likely outcome of a game based on statistics for every team in the league.

The pools predictor allows you to create, load and edit fixture lists and lets you examine league tables. The results menu selection is where you enter fixture results and mid-week results as well as initiate the match result prediction process. Also included, courtesy of Dr Fox, is Dr Fox's Football annual demo. This program lets you analyse football results. This demo version currently covers both the FA Premier League and Barclays League Divisions 1-3.

The full version has the following additional leagues – Scottish Football League, GM Vauxhall Conference, HFS Loans League, Diadora League and the Beazer Homes Premier divisions, and comes complete with all the fixtures already entered and all the results up to the date of dispatch.

We can't guarantee you a win using Pools Expert, but if you do, remember where you got the program from, OK?



Choose from six tests for checking your ST's performance

NBM - The Ness Benchmark

Check out your ST's performance with this benchmark utility

Programmed by: J Ness

Configuration: all STs

Filenames: NBM.PRG-executable file, NBM.DOC-documentation file

NBM is a program which runs five tests, timing their duration, for use when checking the speeds of differing models of ST and their operating systems, or after having installed one of the many software and hardware-based accelerators.

NBM also has a useful database of previously tested Atari computers of various configurations, allowing you to compare the results of the test against those models.

When the program is run, you are presented with a dialogue box listing the different tests which may be performed. Simply click on the required test and a check mark will appear indicating that the selected test will be performed.

You may select any combination of tests or have all tests performed. As each test is run, its name is shown in reverse, then, when the test is complete, the result is printed next to it and the next test is done.

MKRSC

Create your own resource files

Programmed by: J Charlton

Configuration: all STs, all resolutions

Filenames: X_MAKE.TOS - self-extracting file

MKRSC is a simple resource construction program suitable for creating menus and dialogue boxes.

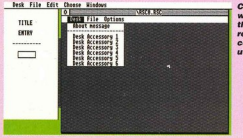
Many GEM programmers will no doubt realise the usefulness of such programs since coding menus and dialogue boxes by hand is extremely tedious and time-consuming.

MKRSC is simple in that it cannot edit existing resource files and is only for creation of new resource files and their associated C headers.

It is completely GEM-driven and provides an easy and quick way for the programmer to construct the basic components found in all GEM programs.

There are objects to find and pick up, monsters to kill, mazes to map and many other objectives before you finally destroy the evil wizards tyranny.

If you liked the Dungeon Master game, then Mystic Well will being back memories – or even knightmares.



Create menus with ease using the MKRSC resource construction utility

Turtle v3.20

A great hard disk backup program

Programmed by: George R Woodside

Configuration: all STs with 1Mb, med- and hi-res

Filenames: X_TURTLE.TOS - self-extracting archive

Those of you with hard drives probably cringe at the mere mention of backing up. The thought of backing up multi-megabytes of information is enough to make you go and watch Home and Away instead (well maybe not).

This is why thoughtful and clever people like Mr Woodside have produced programs which speed up the process and make it as automated as possible. Can you imagine having to use the ST's built-in copying facility to back up a 200Mb hard disk?

Turtle is an extremely fast hard disk backup utility designed to make the life of a hard disk owner easier. The speed is achieved by utilising every scrap of the 1Mb needed, so make sure there are no desk accessories resident. If you have more than 1Mb you don't need to do this.

Turtle also creates a RAMdisk, copying as many files as it can from the hard disk onto it. when the RAMdisk is full, Turtle dumps it as a track-by-track image onto standard TOS floppies.

The result is identical to a floppy that was written directly, except that no time is wasted in moving back and forth to the directory and allocation tables, or waiting for the required sectors to be available during disk rotation.

Turtle is completely GEM-driven and has a extremely handy Help menu item to refresh your memory about each of the menu functions available within Turtle.

When backing up, Turtle makes full use of the extended information on files such as the "archive bit" utilised in TOS 1.4 and greater. This bit informs Turtle whether the file needs to be backed up or not.

When backing up to floppies, you can also instruct Turtle to generate extra copies as opposed to the default of one copy.

Speedy backup operations for hard drive owners courtesy of the Turtle hard drive backup software

FileTOOL

A general file manupulation utility and file selector replacement

Programmed by: Critical Mass Concepts

Configuration: all STs, all resolutions

Filenames: X_FILETOOL.TOS - self-extracting archive

FileTOOL is a file manipulation accessory and a replacement file selector. It offers features found in such commercial utilities such as Universal Item Selector.

FileTOOL features a double selector in which both the source and destination directories are displayed on-screen at once. This allows for quick and easy manipulation of files between destinations.

All the basic file manipulation functions such as copy, move, delete and rename are catered for as well as disk and file information and easy selection of all external drives and hard disk partitions.

So if you're fed up with the ST's boring file selector and its limitations, you will find this replacement a godsend.

Autosort

Specify the order in which programs in the autofolder execute

Programmed by: Eugene F Sothan

Configuration: all STs, all resolutions

Filenames: AUTOSORT.PRG – executable program

As some of you may be aware, any programs placed in the AUTO folder are executed automatically when you boot up your ST.

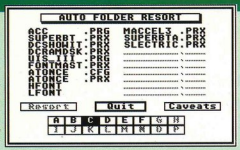
However, some programs need to be run before others in the AUTO folder and the ST's operating system has no built-in facility for allowing you to specify which programs execute first, or for that matter, even showing the actual order of execution. Changing the order of the files in the AUTO folder involves a lot of deleting and copying which is, to say the least, mind numbing.

Autosort makes this process extremely easy. When you run it you may then select the drive on which your AUTO folder exists. Once done, it will display the contents of that particular AUTO folder in the order in which they are to be executed.

To change the order, simply click on a filename using the mouse then drag the filename to the required position in the list. Once you are satisfied with the order, you may then make the change permanent by selecting CHANGE.

Autosort is particularly useful for programs such as Superboot which appeared on the CoverDisk with June's issue. This program required one of its files to be the first to execute in the AUTO folder and another file to be the last to execute.

With the aid of Autosort, this can be done in a couple of minutes thereby banishing the need for lengthy deleting and copying procedures.



Quick and easy ordering of programs in the AUTO folder with the aid of Autosort

Life

A complex version of the classic Life game

Programmed by Roy Stead

Configuration, all STs, med- and hi-res

Filenames: X_LIFE.TOS – self-extracting file

The Game of Life has been around nearly as long as computers have existed. In fact, it was in the 1960s when a Cambridge University mathematician called John Horton Conway designed and wrote the mathematical Game of Life.

The game consists of a grid of cells with each cell having eight neighbouring cells. Each cell can be either alive or dead and every cell changes and evolves to certain rules within the program.

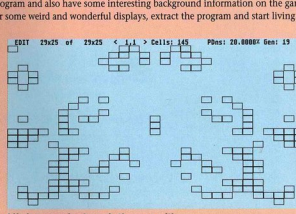
The rules are simple – a live cell survives into the next generation if it has exactly two or exactly three live neighbours. A cell dies from overcrowding if it has four or more live neighbours and dies of loneliness if it has only one or no live neighbours.

Also, besides survival and death, births occur. A dead cell is reborn if it has exactly three live neighbours.

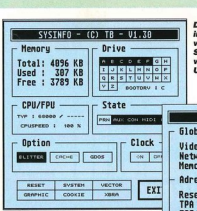
These are the basic rules of the game of life and when the results plotted on the computer screen, you get some interesting, animated displays.

Most Life programs have always been very simple and a little boring, in fact. However, this version is an extremely powerful version packed with features which make it infinitely more interesting.

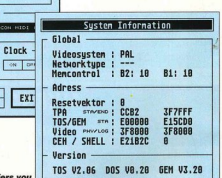
The documentation files provided tell you all you need to know about using the program and also have some interesting background information on the game. So, for some weird and wonderful displays, extract the program and start living.



Life is never simple, as is the case with this version of the classic game



Delve into your ST's innards and find out what's in there using Sysinfo. Also useful when writing in to ST User's Advice Service



Sysinfo offers you full system details at your fingertips

Sysinfo

Gain vital information on the innards of your ST

Programmed by: Thorsten Bergner

Configuration: all STs, med- and hi-res

Filenames: X_SYSINF.TOS – self-extracting file

Regular readers of *ST User* are probably familiar with the Advice Service column which appears every month giving advice and solutions to all manner of questions from our readers.

However, due to the different models and operating systems available, it is essential that readers provide as much information as possible about which model they have in order to give accurate advice.

When run, this little utility reads internal information in the ST and displays lots of critical system information such as TOS version number, whether you have a Blitter or GDOS installed, which CPU is fitted and other useful information.

So, if you intend to write in to the advice column, make sure to run this program and include the information in your letter. That way, you can be assured of a speedy response.

Mystic Well

A brilliant, Dungeon Master inspired game

Programmed by: Jim Todd

Configuration: all STs, low resolution

Filenames: X_MYSTIC.TOS – self-extracting archive

To quote from a Public Sector review of this game, "Cool, just like Dungeon Master innit?"

Come and get clobbered, fur-ball creature of the dungeon depths. I'm a Dungeon Master veteran I'll have you know

Mystic Well is one of the many games inspired by Dungeon Master and although it doesn't look as pretty as the true game, it is certainly well written and very playable.

The astute and regular readers of *ST User*'s Public Sector column will no doubt remember it being reviewed in the June '92 issue. Well, it was so good we bought the company. Well, not really, we just decided it was good enough for the CoverDisk so here it is.

The object of the game is to search for the Golden Skull in an attempt to thwart the evil plans of the evil Wizard. You see, this Wizard has enchanted his life force into this skull and has gone and conquered the citadel known as Mystic Mirror.

To foil his evil reign, you must destroy the skull, thereby destroying him. Simple eh? Well, not quite because you have to find the skull first and there are monsters to contend with. There are four character classes to choose from – rogue, wizard, fighter and priest, and once chosen, you control this character throughout the game.

Problems with your CoverDisk?

With thousands of disks being duplicated each month, a few will inevitably be faulty. Fortunately, we can help you. Send the faulty disk to:

Stanley Precision Data Systems, Unit F, Cavendish Courtyard, Sallow Road, Weldon North Industrial Estate, Corby NN17 1JX.

A replacement will be sent free of charge but please allow 28 days for delivery.

Finder

A utility for quickly locating files

Programmed by: Bill Aycock

Configuration: all STs, all resolutions

Filenames: X_FINDER.TOS – self-extracting archive

Finder is a simple utility that can help you locate a file that contains a particular combination of words or phrases. It allows you to enter up to three phrases to look for and will then search all files in a folder in search for the specified phrases.

If Finder successfully finds the information, it will tell you where in the file each phrase was found and will display part of the file surrounding the phrase.

The program is very straightforward and easy to use. You can either run it as a program or a desk accessory.

CoverDisk Hotline

HOTLINE NUMBER 0625 859766, 2pm TO 5pm EVERY WEDNESDAY

If you have any other problems with the CoverDisk, our technical editor, Darren Evans, will be available on the *Atari ST User* CoverDisk Hotline. The Hotline number is only available within the times specified, so don't waste your time trying to ring outside of them..

Copying the CoverDisk

If you are having problems copying the files on to a blank disk, follow our step-by-step guide below.

First of all, boot up your ST and format a blank disk. Then boot up again with the CoverDisk in the drive. You will see the Desktop appear.

Double click on the folder of your choice and a window will open showing the contents of the folder.

Some of the programs on the CoverDisk are archived. This means they have be squeezed so as to be as small as possible – in this way we can fit as many programs on disk as possible. All archived filenames begin with X_ and the last three letters are TOS. If a file does not start with X_ then it is not archived and can be run as it is.

Click on the file and keep the mouse button held down. A dotted line will appear around the file. Keeping the mouse button held down, move the mouse pointer to the B drive icon until the icon turns black. Release the mouse button and you will see instructions appear on the screen. Click on OK or press Return.

Follow the instructions, swapping the blank disk and copy of the CoverDisk as requested. The instructions refer to disk A and disk B. Disk A is the CoverDisk and disk B is the blank disk you formatted earlier.

When the instructions stop appearing, the process is complete. You should end up with disk A (the CoverDisk) in the drive.

Remove it and put your blank disk – now containing the copied file/s – into the drive. Open drive A by clicking on the A icon and you should now see your copied file.

If it is an archived file, double click on it and it will automatically be de-archived for you. If the file is not archived (ie it does not begin with X_) then you can run the program by double clicking on the filename.

The futu

We Atari users always had one sore point when challenged in various OS skirmishes – multitasking. Not only did we have to put up with assorted smug "amigos" but even the lowly PC has acquired what charitably passes for multitasking.

So it was high time for Atari to get off their collective "motherboard" and do something. And they did! What follows is the wondrous story in and around a precious GEM called MultiTOS. Once upon a time, in a distant and miraculous country called Canada there lived a genius called Eric R Smith who wrote a multitasking OS kernel called MiNT.

This recursive acronym stands for "MiNT is Not TOS". The program was, and still is, PD, currently up to v0.94.

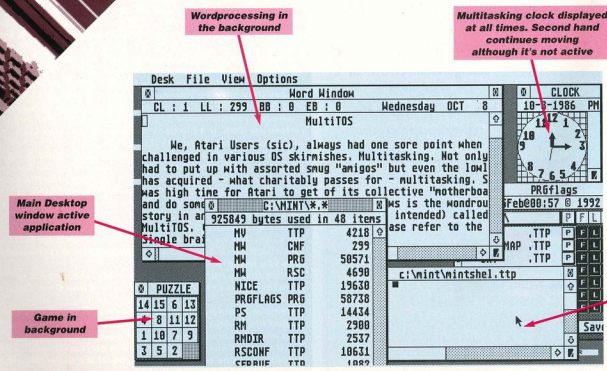
In search of a multitasking OS, Atari then licensed the program from him and according to Eric "got a very good deal". Following this deal Atari wrote some additional code to do memory protection and to incorporate MiNT within its operating system.

Production

The result is MultiTOS and the MiNT acronym now stands for "MiNT is Now TOS"! Version 7.9 reviewed here is pre-release but the production release is expected to vary only in minor, cosmetic ways from this version.

If you're into the nitty-gritty of how things work, read on – otherwise you can safely skip a column or two.

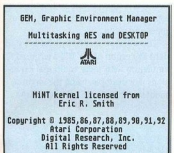
MiNT is a so-called "kernel", that is to say a resident program comprising basic operating system functions. It effectively replaces GEMDOS. When running



An example of a multitasking screen

re's so bright..

...that Don Maples's squinting through his shades. The cause of all this optimism? Atari have launched MultiTOS, and now Atari users can hold their heads high in any OS company...



MultiTOS's Show Info box

MiNT alone – as is the case in the PD version – you normally talk to it from a command line interface or a "shell". This is because MiNT is basically a Unix-like environment written to run TOS/TTP programs concurrently.

The additional code written by Atari adds a graphical user interface and so we now have MultiTOS. Effectively, Atari have written a multitasking version of AES and Desktop to "sit" on top of MiNT.

Even though it might be possible to run MiNT using floppies, a hard disk is highly recommended. The installation is relatively simple. First of all a MiNT folder is created in the root of your boot disk which is normally C:. All files are then copied to C:\MINT while the MINT.CNF configuration file is copied to the root of C:\.

At this point, the main MiNT program can be copied to the AUTO folder, you reboot and that's all there is to it. The system will come up as MultiTOS.

Familiar

However, for added flexibility it's better to copy the familiar COMMAND.PRG into the AUTO folder as the last file. This means that when the booting ends instead of the Desktop you'll find yourself in this COMMAND line interface.

You now have a choice of either typing exit – and your system comes up as usual – or typing mint\mint – and the system comes up as MultiTOS.

When you opt for MultiTOS, what actually happens is that another program called GEM.SYS runs a new version of Desktop which is "MiNT aware". This Desktop incorporates all of the recent TOS developments and, of course, it adds multitasking.

At first blush the MultiTOS Desktop looks deceivingly similar to your good old Desktop. But as soon as you move the mouse to the Desk menu the plot thickens...

Immediately below accessories there is now an additional section listing all tasks. The currently active task or (in MultiTOS-speak) active application is indicated by a checkmark. You can activate any other task by simply clicking on it in the Desk menu. Its window will then automatically be topped.

Conversely, clicking on an inactive window will top it and the program that owns it becomes the active application. What active application really means is that it is the application we are currently communicating with. Its menu bar will be shown at the top of the screen and the Desktop background behind all windows also belongs to it.

Events

Last but not least, the active application is the one that receives events resulting from all keyboard and mouse activity. All other windows, that is other tasks, are still visible and continue merrily running and updating their own ➤

```
Command v0.33 6/26/85 LTG
{c}mint\mint

MiNT is Now TOS: MiNT version 0.95 prelim. version PL 1
Copyright 1990,1991,1992 Eric R. Smith

Copyright 1992 Atari Computer Corporation.
Use this program at your own risk!
You may not redistribute this version.

Memory protection version of 08 May 1992 (R7.9)
MiNT basepage: 2640e
```

MultiTOS is based on the PD program MiNT

No more mind games

One of essential aspects of multitasking is memory management. This is because when several programs run simultaneously, some sort of control is needed to make sure these programs don't step on each other's toes.

Let's say a program goes wild and starts writing all over the place. On a single-tasking ST you might get a variable number of bombs and be thrown back to the Desktop. In extreme cases the whole machine may hang. This will lead to the loss of "only" one program's data.

Offending

Now consider the same scenario in a multitasking environment. Not only will the offending program crash but it may take down with it every other program that is executing at the time.

If you consider a single program crash and the loss of its data irritating, losing several programs and their data in a multitasking environment is, ahem, well..., multi-irritating!

And this is where memory protection comes in. The so-called memory management unit (MMU), which is a part of the 68030 processor, can be used to make sure the above scenario never occurs. So if a program becomes naughty and wants to mess with other programs, the MMU smacks it on the head and terminates it. All you lose is this one, naughty program but everything else still runs. Alas, this part of MultiTOS will only be active on machines with a 68030, which at this point means the TT and Falcon.

On the other hand, under MultiTOS all STs now support four types of memory – private, global, super and private/readable.

Memory types

Private and super are self explanatory; global is memory to which everyone has access; and private/readable is memory to which everyone has read access but only the program that owns it can write to.

However, there is more to the MMU then just keeping an eye on naughty programs. It also offers "virtual memory". This concept is worthy of an article in its own right. Simply put, virtual memory makes the computer "think" it has considerably more memory than that available in its memory chips.

This is done by saving information to hard disk and reading it back when required. In this way, for example, a 4Mb machine can behave as a multi-gigabyte machine. In other words, "Out of memory" becomes almost impossible!

window contents, but we're only chatting with the "active" one.

Got that? OK, so let's confuse you. An active application does not necessary have to own the top window or, for that matter, even have a window opened!

Liberating

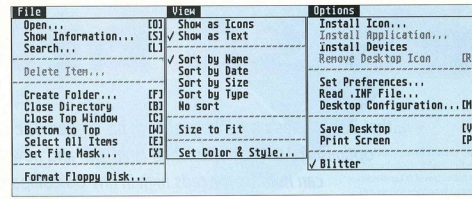
What happens then is that the top window belongs to one application while the Desktop background, the menu, and mouse/keyboard events belong to some other application.

But don't worry about this, it only shows how powerful and liberating multitasking is – in most cases the top window and the active application will be one and the same.

Another interesting twist is that you can now use gadgets of windows which are not topped. In other words you can move, resize or even scroll a window in the background without topping it! To actually top a window you have click inside it.

Finally, the artificial limit to the number of opened windows is gone. The number of opened windows now depends solely on the amount of available memory. One of the most important programs that comes with MiNT is MW.PRG which actually invokes the standard MiNT shell called, you guessed it, MINTSHEL.PRG. MW.PRG is actually a window manager which can be used to run multiple MiNT shells. You can run other shells if you so wish by simply editing the configuration file but MINTSHEL is fully "MiNT aware". That means it comprises various multitasking aspects such as redirection, job control, pipes and so on.

The window opened by MW is a standard ST version of the VT52 terminal emulation with some additional extensions. For example, using the environment variables LINES and COLUMNS



MultiTOS's new drop-down menus

Single brain, multiple thoughts

There are many misconceptions and myths surrounding multitasking. The terminology itself can be quite confusing so let's plunge in and have some definitions first.

Multiprogramming is when several programs run on one CPU simultaneously. Multiprocessing (parallel processing) is when several CPUs run one (or more) program(s) simultaneously.

Multitasking itself is a bit more elusive and is defined differently depending on whom you listen to. The definitions range from multiprogramming to multiprocessing and even include a combination of both.

Since MultiTOS at this time runs on a single CPU we will use the term multitasking in a multiprogramming sense.

Humanoids

So as the name suggests, multitasking is a way of running multiple tasks at the same time. We humanoids are well suited to multitasking which is why we are capable of doing several things at the same time such as walk and chew gum.

What this means in relation to a computer is that we can, for example, work on a spreadsheet while at the same time in the background have our comms program do some downloading and the printer do some printing. Or we can have several copies of the same program run simultaneously.

Multitasking originated on early mainframes as a way of being more efficient. For example, whenever there was some slow I/O (such as printing or reading tapes) the program would have to wait for the input/output to finish.

Only then could the actual processing resume. This was very wasteful since on average a computer would twiddle its thumbs about 80 to 90 per cent of the time. So a scheme was devised whereby the CPU is taken away from the program waiting for I/O and given to another program ready to execute.

On micros the progress of multitasking has evolved in three stages. The first were the "pop-up" or "TSR" (terminate and stay resident) programs. They run when the user invokes them by pressing a special "hot-key".

Our accessories can be bunched in this group only instead of a hot-key we click on the accessory. This was a nice and hassle-free way of interrupting what we are doing, doing something else, and then quickly returning without losing our place.

Note that while we were in the pop-up program our original program went to sleep and did nothing.

The next stage was the extension of the first by having several full-blown programs and not just short utilities available at a flick of the wrist. This involved saving the "context", ie our memory as well as our place in the program of the task we were interrupting.

This is why this approach is also known as "program switching" or "context switching". The problem is that here too only the currently active program was doing something while others hibernated.

Preconditions

The third stage is a real multitasking operating system written from the ground up as such and which is much more stable, more flexible and does not depend on a number of preconditions.

Multitasking can be implemented in a number of ways but it invariably involves some form of "task switching". Since there is one CPU the only way to have several tasks going on is to have the processor switch between them in such a way so that we don't notice it.

The part of the operating system that acts as a traffic cop in deciding which task gets the right of way is called the "scheduler". The scheduler operates by subdividing the multitasking into "co-operative" and "pre-emptive".

Co-operative multitasking (as seen on the Mac) depends on how well the programs co-operate with each other. In this method one program must be in a certain state before the control can be passed to another program.

For example, whenever a program waits for input the operating system gets a chance to poll other tasks. This is also exactly how GEM passes control to accessories. As you will already have spotted, if one selfish program hogs all of the available time and refuses to yield – bye-bye multitasking...

Timer interrupts

Pre-emptive multitasking, on the other hand, divides available time among different tasks regardless of what they are doing. Amiga, Unix, OS/9 and now MultiTOS work like that. The way this is actually done is to use timer interrupts. The amount of time the processor spends on each task is then known as "time slice".

Timer interrupts occur many times per second and every time an interrupt occurs the control is passed to another task. This is the simplest form called "round robin". It assumes that all tasks are equally important.

But life is not that simple so we need to do "priority" scheduling by giving different priorities to different tasks. In other words, a task can then get more or less time as required.

For example, we can be working in a wordprocessor and do some spreadsheet table calculations in the background. In this case it is more important for us to have the wordprocessor be quick and responsive than to worry if the spreadsheet takes a few more seconds to finish.

So we would give the wordprocessor a higher priority – that is to say, we want the CPU to spend more time and effort in keeping up with our typing and only when there is time left over to switch to table calculation.

In closing, it's quite safe to say that the future definitely belongs to multitasking or to be more precise multiprocessing. One thing is sure – the end of the single-minded computer is nigh.

Hardware and software compatibility

MiNT runs on STs and TTs of all sexes, ages and religions including the Falcon. It even survives some third-party upgrades to 68010, 68020 and 68030 processors. At this time the only prerequisite is that application programs run in user mode (as opposed to supervisor mode) but this may soon change.

However, as outlined above, the memory protection works only on 68030-based systems. This prevents "runaway" programs from crashing other concurrent tasks.

And that brings us to the subject of "well behaved" programs. From day one Atari have been suggesting that developers follow official guidelines. Initially this was, by and large, neither strictly observed (by programmers) nor strictly enforced (by Atari).

Firmer

But with various upgrades of both the operating system and hardware the developers learned the hard way to pay closer attention and, these days, Atari are also much firmer.

So, in theory, under MultiTOS the problems are most likely to occur with unconventional user interfaces and, of course, PD programs which tend to be, ahem..., unconventional.

However, multitasking by its essence raises some other major problems such as memory allocation, dialogue boxes and TOS/TTP programs.

The first is quite self-evident as most programs currently allocate all available memory at the start of the program. The program then keeps this memory, whether it needs it or not, until it ends.

Any subsequently loaded programs will therefore have no memory left as long as the first program is still running. The moral of the story is, keep only the memory you need and satisfy any additional requirements by dynamic allocation.

Dialogue

A dialogue box is another story because when it appears everything else stops (try running an accessory that uses a dialogue box and you will not be able to use the desktop menu bar for as long as the dialogue is on the screen).

In a multitasking environment this is a big problem. Atari are working on this and one possible solution is for GEM to automatically run dialogue boxes in windows – which you can then enable and disable at will.

Finally, TOS/TTP programs take over the whole screen without regard to other programs and this can mess up MultiTOS. The solution is to run TOS/TTP programs from the supplied MW shell which automatically corals them within a window.

Actually, all you need to do is open the shell once and then forget it. Next time you double click on a TOS/TTP program from the Desktop, MultiTOS will know what to do with it. It effectively instructs the shell to open a window and run the said TOS program in it.

In any case, almost all programs with problems will still run just fine under MultiTOS as long as they run alone, which is certainly acceptable while we wait for the upgrades to come out.

Atari claim high compatibility with existing software (well, they would). But MultiTOS upgrades of all major programs will follow shortly and, after all, these teething troubles are a small price to pay for such a major step forward.

These improvements are encouraging on several grounds. For one, Atari seem to be back on track again with both hardware and software developments now at the cutting edge.

And the fact that MiNT was licensed from a dedicated ST user means that Atari are also more responsive to their most fervent supporters. The latter is not only refreshing but essential if Atari are to make a comeback!

Stable

Another important aspect of licensing MiNT is that it has been available in PD for a long time. This means it has been thoroughly tested and debugged and is, as a result of that, very stable.

By contrast, assorted multitasking systems available on other platforms were shaky, at best, for at least a couple of years. We Atari users, on the other hand, will get solid multitasking from day one.

you can set its window to any size you want. It's a good idea to have this program run automatically every time MultiTOS comes up in order to be able to run TOS/TTP programs with a minimum of hassle. For more about this read the notes on compatibility above.

In a shell

By using a shell you can also run other MiNT commands which provide Unix-like tools such as "grep" and "make". You would also use a shell to do various types of system monitoring including task priority management. You can list processes, suspend or restart a process and run a job in the background.

But wait, there's more! MiNT also supports loadable file systems and device drivers. These are programs to support additional hardware without having to modify the operating system itself.

For example a CD-ROM driver can be added to communicate with CDs. There is already a driver to read/write files on a hard disk in Minix format. This Unix-like file system liberates us from the inane MS-DOS 11-character filename limit and gives us long filenames.

An essential part of a multitasking system is interprocess communication. MiNT is particularly well endowed in this area as it supports signals, fifos, shared memory, message passing and semaphores.

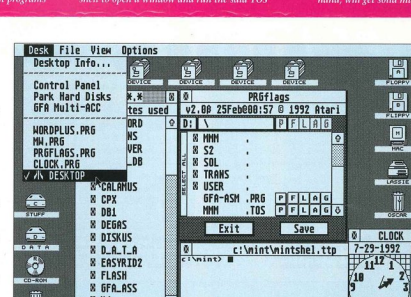
These are basically various types of messages which processes send to each other in a number of different ways. Semaphores are methods of reserving a system resource for exclusive use. Reiterating its Unix similarities, MiNT also employs signals. These are software equivalent of processor interrupts and exceptions. Signals usually occur when something important, and more often than not fatal, has happened. MiNT provides for 32 different signals, most of which are predefined with a couple left over for application programmers.

MultiTOS also liberates accessories. Using the supplied ACC.TTP program, accessories can be used from the Desktop at any time and there can be more than six of them as well. GEM.TTP and TOS.TTP are used to launch GEM and TOS programs respectively.

And finally one small, but really mega-neat feature, is that you can move alert boxes by dragging them! Next time another alert appears it will be located at this new position and not in the middle of the screen as usual.

In closing, it can be safely said that after a couple of years of stumbling Atari can now see the light at the end of the tunnel. The good news is that this light is not an engine coming from the opposite direction.

Or, if you wish, the future is just as good as it used to be! Atari are back and I for one give MultiTOS the thumbs up!



The new Desktop – to be seen first on Falcon

When the editor asks you to review a package, the response is usually a quick click of the heels, maybe a salute, and a "Yes sir!" before scurrying off to the corner to investigate the software.

I had to hesitate, though, when asked to review a genealogy package. Not wishing to show my ignorance, I merely clicked my heels, saluted and mumbled a "Yes Sir?" before scurrying off to my corner with a frown like a freshly ploughed field.

On looking at the package, I was further confused. It is called Family Roots – A comprehensive genealogy program. Could it be a hairdressing program? Or something to do with molar extraction under computer control?

There was nothing for it, I would have to read the instructions. Unusual for a reviewer, I know, but desperate times call for desperate measures.

Scary

Family Roots comes in an A5 flat plastic folder containing just one disk and very brief loading instructions. This was getting scary. There was nothing for it – I had to look up genealogy in the dictionary. I must have one somewhere.

Genealogy is, of course, the direct descent of an individual or group from an ancestor. Family trees, and all that. I've always wondered where I came from. Perhaps this was my chance to find out.

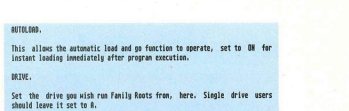
The lack of a manual with the package was a little concerning. The instructions given are sufficient to get the program up and running, but no more. However, I was pleasantly surprised at the online documentation.

This can be called up at almost any time within the program, and browsed through. It can also be printed out, which takes about 20 sheets of A4. I have to confess that, while lack of printed documentation may keep the price down, there is no substitute, and I would like to have seen the manual included in its printed form too.

Little room

As the program loads, a graphic Family Roots screen is displayed. What with this and the online manual, thought I, there will be little left room for any decent sized family tree!

Chris Skellern has thought of this, and the documentation explains that the loading pictures and online manual can be omitted from the boot disk, freeing 60K of memory for your family tree. Not only that, but the program uses a compression technique to fit even more data into memory.



Using the on-line manual, you can opt to print the entire thing, or select a chapter of the manual to browse through

Another very neat feature is the Autoload option. This allows you to force the program to load your Family Tree file whenever it is run. It may only save a couple of mouse clicks, but it makes the software that little more user friendly, and shows the degree of thought that has gone into the design.

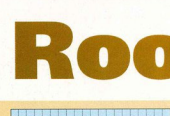
Although the program uses icons and the mouse, and is described as being GEM-based, it does not have a menu bar, use windows or give you access to desk accessories.

While this doesn't detract from the program, it may mean that you will have to get used to selecting options using buttons and keyboard short-cuts, rather than drop-down menus. The

Back to my Roots

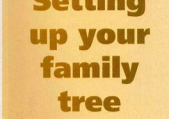
Marc Young traces his family tree with this interesting new release

Setting up your family tree

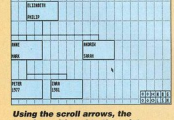


Using the scroll arrows, the tree is positioned to the point where you want to add a member of the family

Selecting N (for New) allows you to position the new box using the mouse. It can be re-positioned later if required



Right-clicking on the new box brings up the dialogue shown here. You can set up as much, or as little information as you know at the time



Selecting L (for Link) allows you to drag a line between any two boxes. In this case dragging a line from Andy and Fergs to young Beattie brings up the dialogue shown above where the program is told the relationship between the two

And so another member of the Royal Family is added to the tree (which was correct at the time of going to press!). If one of the members of your tree already had a linked to others, all additional links are adjusted correspondingly by the software.

main work-screen contains your family tree. This is shown diagramatically as a number of boxes, each representing a person, linked by lines representing their relationship with one another in classic family tree style.

Creating this information could hardly be more simple. Clicking on N (for New) brings up an empty box on the screen. You may position it where you will using the mouse.

Next you will want to identify the person you are adding to your tree. Simply clicking the right button while the mouse is over the box, brings up an information dialogue. Here you can enter details such as name, where and when born, and died etc.

One of the clever things about this program is that it does a lot of checking for you, so it is quite difficult to make mistakes. Rather than being "strict", however, the program allows a great deal of flexibility.

For example, it is unusual for you to be able to find out the exact dates of your ancestor's births and deaths. The program allows you to enter a question-mark in place of any portion of a date.

So, if you knew your great great great

(we get the idea – Ed) Aunt was born sometime in January 1856, you can enter the birth date as ?/1/1856. Of course, you can change this later, as more information comes your way.

When rummaging in the depths of the town hall cellars, or even your mother's loft, for family details, you will come across some material which cannot be included within the database.

The obvious example is photographs. While in principle it would be possible to scan in pictures, this would increase the size of the database to a ridiculous level. This facility has, therefore, not been included. So what are you to do?

Each record on the database has its own unique ID. These start at AA00, run through AA99 then start at AB00. This gives you, erm, 26 x 26 x 99, erm that's, well, lots of entries. Certainly more than you'll ever need, unless you manage to trace your relatives back to Fred and Wilma Flintstone.

So when you find that long-lost birth certificate, or treasured photograph, you can simply file it under the ID provided by the program.

Special cases

Although the database holds just about all of the information you are likely to need, there will always be special cases, where you want to look at your database in a way that the programmer could never have anticipated.

Take a rather morbid case of a hereditary disease. Haemophilia is a typical example. If there has been a history of the disease in your family, you may wish to keep details of which family members have been affected.

The software allows you to define up to six flags for this type of information. each flag (denoted by the letters A to F) can be set on or off for every member of your tree.

Once your database has reached a reasonable size, a comprehensive Search option is very important, unless you want to spend all day scrolling through your records. The search option available in Family Roots is truly excellent.

The search allows you to enter information against any of the fields, such as surname, forename etc, which are present in the database.

Wild cards can be used, an asterisk representing any number of characters and a question mark representing one digit of a date entry. So a search could be made for all members born in the nineteenth century by specifying a date range, using the date of birth, as ?/?/18??.

Having found the entries corresponding to your search criteria, the program displays them in a list. You have a choice over whether the details are displayed as every record is found, or the program waits until all records have been searched before displaying the fruits of its labour.

Having displayed the list of matching entries, you can select to view the details or zoom directly to the tree for any of the members found.

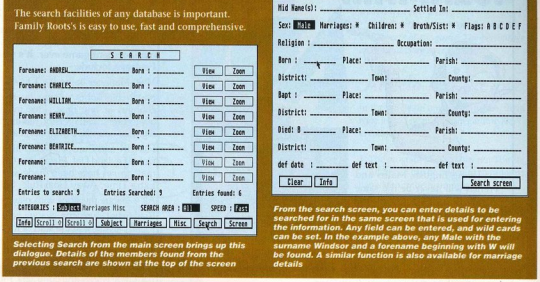
One feature which I found a wonderful idea is what the programmer calls "multiple single line input strings". In a nutshell this facility allows you to enter two values into one field, separated by a slash.

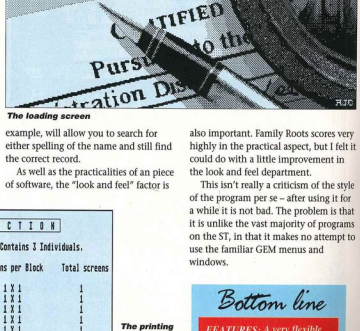
This is very useful where you are unsure of a spelling, or even someone's exact name. Entering GEOFF/JEFF, for example, will allow you to search for either spelling of the name and still find the correct record.

As well as the practicalities of an piece of software, the "look and feel" factor is also important. Family Roots scores very highly in the practical aspect, but I felt it could do with a little improvement in the look and feel department.

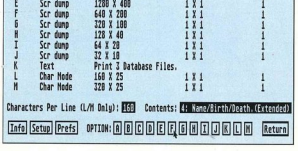
This isn't really a criticism of the style of the program per se – after using it for a while it is not bad. The problem is that it is unlike the vast majority of programs on the ST, in that it makes no attempt to use the familiar GEM menus and windows.

Product: *Family Roots*
Supplier: *Floppyshop, PO Box 273, Aberdeen*
Telephone: *0924 312756*
Price: *£24.95*
Configuration: *All STs*





The loading screen



The printing screen allows you to print the selected block in a variety of resolutions, and even works if you have a printer which doesn't handle graphics

Bottom line

FEATURES: A very flexible approach to computerised ancestor-hunting.

EASE OF USE: Quite logical once you get used to the lack of GEM functions.

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

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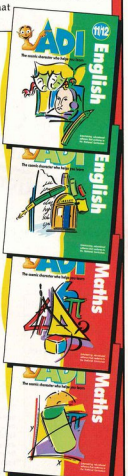

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Tips for ST games

We are writing to ask if you could help us out by printing our letter in your magazine. Several of my friends and I are currently compiling a book of tips for Atari ST games.

We have about 300 but could do with a lot more. If your readers could help by sending us their tips, cheats, maps and level codes – please no Lemmings – it would be greatly appreciated.

All tips printed in the book will be acknowledged with the name and city of the sender being printed. Phone calls are also welcome on 0203 715921.

Keith Dunn, 57 Hearsall Lane, Earlsdon, Coventry CV5 6HF.

Review the right version

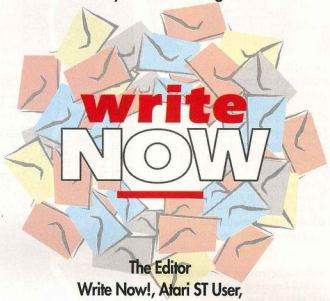
I am writing with reference to the letter of Ian Baker from Cleveland printed in the August issue, where he comments on your review of an Amiga game not yet available on the ST.

I was satisfied with your response until I read, a few pages on in *Gamer*, that Warriors of Releyne was reviewed on the Amiga and I quote "I checked the computer, but it was still an Amiga."

Why are you reviewing a game on the Amiga when you're an ST magazine for ST users?

Following on from this, how can the aforementioned game receive a higher percentage score when getting less G

Got anything to say to the ST community? Send your scribblings to:



The Editor
Write Now!, Atari ST User,
Europa House, Adlington Park,
Macclesfield SK10 4NP

marks than the game reviewed on the following page? This seems inaccurate.

Mr G Hatch, Berkshire

Most of our staff also work on other titles in the company, including Amiga Computing, and despite efforts to stamp them out small mistakes like this occur from time to time.

Our games editor, Daniel Whitehead, says he reviewed the ST version and pins the blame on the sub editor. Of course, the sub says he wouldn't change the word ST to Amiga. So the truth may never be known, but it's interesting to note that Daniel resigned just a few days after we received this letter.

The G rating system marks individual aspects of the game. The percentage at the end is an overall score.

Article not the biz

In the article on business software, there were just a few mistakes regarding Biz, as follows:

1. The program is called Biz, not The Biz
2. Addresses can be added to the address book within the main program.
3. It is not sensible to change the unique number of an invoice, or any other transaction for that matter. You can generate a new one using the same data, and then delete the old one. However, this is under review, as it seems that some people can be a little bit slack with files.
4. The manual is 100 pages long. I know, I wrote it.
5. You can output all of the transactions as seen on the screen in the reports program.
6. You can print a list of unpaid invoices. Delete all receipted and list the invoices. Easy.
7. The bugs which were mentioned had already been cleared. The copy Andrew reviewed was some six months old, and I did send him the updated and enhanced version. ➤

Changing with the times

I would like to make a few points which I believe haven't been in print before. Perhaps a brief life story would help to explain – get your hankies ready.

After buying my first complete Atari 800 setup in 1979, which cost just over £1,000 and included a few pieces of software; I have been loyal, but perhaps ill-founded, to Atari.

I upgraded to the XL and obtained an XL translator so that all my software would run on it. I upgraded my 810 to a 1050, changed from XL to a 130XE and generally tried to keep up to date with the new systems. I hardly had time to buy any software due to saving for new hardware – and advertising to sell the old – only to find 8-bits are out and 16-bits are in.

So I saved up yet again and in February 1989 bought a 520STFM which had increased in price from £299 to £399 due to a shortage of chips.

I have watched the Megas and the TTs pass me by, my lesson learned, and there my story ends – or does it?

Recently, I became interested in a new wordprocessor but it requires a full megabyte of memory – gone are the days when 48k was more than you'd ever need.

So I've scanned your magazine for prices of upgrades in view of my Midi interests. After taking some advice, I arrived at the conclusion that my STFM would be more expensive to upgrade than it would be to sell it and buy an upgraded STE. Aaarrgh, sound familiar?

What I'm worried about now is, if I buy an upgraded STE am I going to regret it, perhaps when Falcon becomes available on the UK market. Will I once again have thrown good money after bad? Following your report in your July news column regarding an ST emulator for the PC, perhaps I would be better buying one – at least they've kept to an IBM standard, whose users are not penalised by changing operating systems and the like.

Then finally, I might be able to take one huge sigh of relief, unless anyone knows better that is!

Christopher Haydock, Preston

It appears that you like to keep up with changes in technology Christopher, and so with Falcon just around the corner that could be the machine you should go for.

But it's difficult to make a recommendation until we know what support there will be for Falcon, and indeed whether you need or want the specifications in the new computer.

Software houses want a sufficient user base before releasing Falcon products, and yet people usually buy computers for their software. This situation could mean we will have to wait a while before sales really take off.

In the meantime, STE prices will almost certainly tumble. Atari say they won't but who is going to pay £399 for a 1040STE when they can pick up a Falcon for £100 or so more?

So wait a few months to see what happens. If you decide to make the switch to PC-compatibles you will, again, need to upgrade your operating system from time to time.

Each of the changes to Atari's computers mentioned in your letter have been a progress on technology. If they were not made, ST users would have had more to complain about than incompatibility.

8. Biz is intended for small to medium-sized businesses, not just for self employed people.

It would appear that the reviewer had very little understanding of the gist of the product, which is for us a wasted opportunity.

Biz is part of a much larger package which is about to reach its second stage as stonking Biz Plus, and future versions may include networking.

I'm not adverse to criticism, except that the article seemed to be an exercise in nit-picking, which is hardly constructive. Biz is a major product from a new company which deserves fairer treatment.

Quentin Rich, Orpheus Systems, Surrey

You mention eight mistakes – three seem valid. One is the name of your program, another is the size of the manual and the third is that all transactions can be output as seen on-screen.

The feature mentions that addresses can be added to the address book and that the package is aimed at small businesses and self employed individuals.

Displaying unpaid invoices by deleting all receipted and listing the invoices is not easy. It's a long route to do a simple and frequently needed task.

Andrew contacted your company to point out the bugs before he started writing the feature. Two weeks later he received an updated package which still contained the bugs.

Our reviewer is a freelance journalist who writes for several magazines, and uses a number of packages to keep track of his business accounts.

Rockfall looks for music

On the January 1992 CoverDisk there was a program called EdSynth by Chris Horton. I am currently writing the sequel to Rockfall and would love to include some background music.

Would it be possible to contact Chris, as I would like to have him produce the music with his program for Rockfall 2. The program will be released as shareware, so there will be some money in it for him.

Rockfall 2 should be out by the end of November, provided I don't run into too many problems. The cut-down public domain version will be sent to all those people who updated their original.

I hope you can print this letter, as I think that music in Rockfall 2 would improve it a great deal. Keep up the brilliant work on the magazine.

Jason Brasier, 16 Moor Road, Strelley Estate, Nottingham NG8 6NH

Music would certainly improve Rockfall. We look forward to seeing the new version later this year.

Levels needed for PD

I'm just writing to thank the many people who contacted me after seeing my game Slug on your July CoverDisk.

I received countless letters from people all over England, and even from Slug fans in other countries. I included the Slug map editor with most replies, and so I guess that there must be a lot of Slug levels around that people have designed themselves.

If they would like to send any such levels to me then I would be happy to collect them together and include them in the public domain release of Slug, which should come out in September.

All levels will of course be credited to the authors and I will return any disks sent to me.

Ben-John, Lincolnshire

Lonely life down under

I'm writing because I am a lonely ST user. I am calling out through your magazine to anyone in Australia or overseas that would like to write or swap public domain programs.

I am planning to buy a modem soon so that I can obtain lots of new PD, but in the meantime I'd like a pen pal who can get programs and send them to me.

I am interested mainly in Midi applications, graphics – especially 3D rendering, programming and, of course, games. Keep up the good work with the magazine.

Mark Szulc, 37 Feather Street, St Clair NSW 2759, Australia

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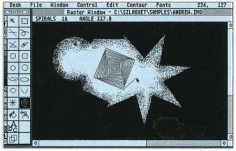
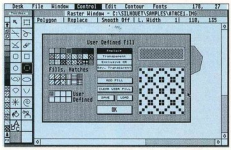


Creating bitmaps in Silhouette with stars and spirals



The wide range of fill options...

Seen in Silhouette

Will the latest multi-functional art package Silhouette – grab the limelight or be overshadowed by more expensive products? Andrew Wright puts it in front of the spotlight

The computer graphics world has never quite found a way round the strict division between bitmap pictures and vector drawings.

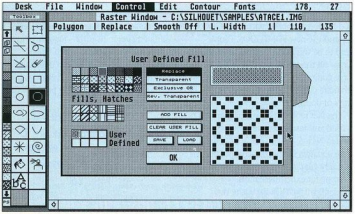
Whether you use a PC, a Mac or an ST, graphics are either in bitmap format or vector format – and never the twain shall meet.

As a result, most users are faced with the necessity of using a paint type package such as Degas Elite for creating bitmaps, a drawing package such as Easydraw for illustrations and perhaps a tracing program such as Avant Trace for converting bitmaps into a more usable form. Some programs combine the first two functions (Arabesque, Megapaint Professional) or the latter two (Didot Lineart, Avant Vector) but there hasn't been a program to combine all three – until now.

Silhouette sounds almost too good to be true. It offers both bitmap art and vector drawing features plus an autotracing facility only found in more expensive packages. It can import and export graphics, print to a range of printers and has one or two unique drawing tools as well. And all for a highly competitive £60.

I'm going to launch straight into what the program does at this point – we'll worry about the details later. On loading Silhouette, you see a fairly traditional layout – menu bar along the top, toolbox icons on the left-hand side and a blank work area over the remainder of the screen.

The default mode is the raster or bitmap window – to change from vector to raster or to the pixel editor (basically a zoom window) requires selecting the relevant menu entry. The toolbox icons don't change much when you switch modes but some will have different meanings and others will be unavailable.



...and line thicknesses and types

Adventurous

In bitmap mode, there are several tools for drawing different shapes including the standard circles, squares, lines and polylines as well as more adventurous ones such as arcs and sectors. The unique tools are the spiral, the star and the parabolic curve.

The tools are controlled in a rather unusual way. The tool is selected by a click of the mouse but unlike other programs, a single click of the mouse is all that's needed to start the drawing process.

It feels odd at first, not holding down the mouse button to draw something, but it does seem to enable a high degree of accuracy and it is certainly more comfortable.

It also means that half-way through a complex operation, you can stop and answer the

telephone or make a cup of coffee. The result of each drawing operation can also be altered by holding down another key simultaneously. For example, pressing the hold down Control key while drawing a line limits the line to the horizontal or vertical planes, while holding down the Alternate key creates multiple radiating lines.

The star tool is particularly good fun. Selecting the star, clicking on the work area and moving the mouse creates a three-pointed star.

Real time

Now, pressing the left and right arrow keys decreases or increases the radius and the up and down arrow keys increase or decrease the number of points. It all happens in real time there on the screen and it looks very good indeed.

The program is still being worked on, so most bugs ought to be fixed fairly soon. Unfortunately, a lot of software is coming on to the market too early these days – I don't know whether it's due to the recession or simply because firms are willing to take risks.

There are equally guilty parties in the PC world – many of them multinational corporations such as WordPerfect – but it would be nice if ST developers could show them the way.

The main criticisms of the bitmap side of the program are that there is no magnification except for the pixel editing mode which lets you tidy up images in fine detail.

Several different views of a picture are very important and there simply aren't any in Silhouette. The other omission is the block function which is completely absent from the program.

One of the most useful features of Degas Elite and similar programs is the ability to cut out a block and manipulate it in different ways. There is a clipboard facility but this seems solely for moving blocks around and delimiting areas for the autotracer.

Silhouette works quite well in vector mode. The odd key-plus-mouse style is put to use in allowing objects to be selected in various ways. Even objects underneath several others can be selected and added to a group. Line and border thicknesses can be specified to within 0.1 of a point and there are six different line types as well as a user-defined option.

Bottom line

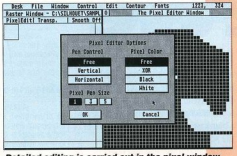
FEATURES: A very fully featured package let down by a few rather obvious omissions.

EASE OF USE: The user interface takes some getting used to but once there, graphics can be created quite quickly.

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

Silhouette has considerably more advanced editing functions than other vector graphics programs like Easydraw and Hyperdraw, but it is harder to use.

Even top-end, professional-quality programs such as Avant Vector and Didot Lineart are easy to use in comparison with Silhouette.



Detailed editing is carried out in the pixel window

The problem lies partly in a lack of consistency – objects aren't constructed point by point as in Avant Vector or Didot but in the same way as other packages, by selecting the object from a list and then modifying it. Yet when objects have been traced, the user is obliged to edit them line by line, curve by curve and point by point.

In this department, the program isn't very responsive – it can be hard to know when a point has been selected and when it hasn't. It can also be very slow and there aren't enough different magnifications to work with (there is a zoom function in vector mode with two, four, eight and 16 times magnifications).

There are, however, useful keyboard short-cuts to help, such as pressing certain keys to cycle point by point through the object.

The autotrace module is what sets the program apart from any others in its price category. The two other packages with the autotrace facility are Didot Lineart and Avant Trace/Vector. Both cost at least twice the price of Silhouette and neither offers bitmap graphics. So how does it compare? First of all, don't expect the best autotracer in the world for this price. It works well enough – and it is certainly very fast – but tests showed it really only to be suitable for simple bitmap graphics.

Anything with too many curves or re-entrant curves just would not trace satisfactorily and the attempts were so poor as to make editing by hand a mammoth task.

Better results

For my money, Didot's Autotracer is the simplest and the best although Avant Trace/Vector has far more user definable parameters which can lead to better results on complex graphics.

Silhouette's autotracer handles simple graphics well when using the simplest tracing levels – lines only. When Bsplines or Bezier curves are used, the accuracy seems to decrease and the overall effect is much poorer.

What type of graphic will it handle? It handles characters and other filled objects very well, which is useful for logo design, and it is equally at home with simple designs such as crosses and simple signs such as arrows. For graphics with 20 or more smaller components, particularly solid areas, look elsewhere.

Bitmaps can be traced into vector outlines

Silhouette is a GDOS-based program and it comes supplied with both GDOS 1.1 and the new FONTGDOS. People tend to be wary of GDOS packages these days – all the top-end packages seem to have gone their own way and developed what are claimed to be more efficient ways of doing things.

The fact remains, however, that GDOS is tried and tested despite its idiosyncrasies. New fonts can easily be added from a variety of sources, compatibility is virtually guaranteed and there is plenty of scope for experimentation.

Along with GDOS itself, the two Silhouette disks contain the standard set of Atari GDOS fonts – Times/Dutch, Swiss/Sans Serif and Typewriter. Printer drivers are provided for Epson FX, Canon Bubblejet, HP Deskjet, Laserjet and Paintjet, NB15, NEC 5/6P series, NX1000, OKI20, Atari SMM804 and the Atari laser printers.

There is also a copy of the XCONTROL accessory including the FONTGDOS CPX module, several help files and some sample graphics.

Silhouette needs 1Mb of memory and a hi-res monitor. It works well from a single floppy drive as well as a hard disk. Silhouette can import bitmap graphics in IMG, Degas (PI3, PC3), Tiny or Macpaint formats but it can only export in IMG. TIFF formats are likely to be supported in the future (if the greyed out box and comment in the manual are anything to by).

Exclusive

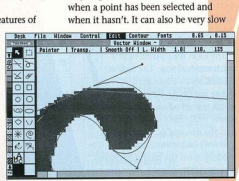
In vector mode, it can import GEM (Easydraw compatible) and export GEM – both Easydraw compatible and the newer GEM/3, DXF and EPS. CVG support may be added. It can also load and save its own format, SGF, but no other program will be able to use it.

Importing and saving bitmaps worked well with one minor grumble – saving a file and immediately loading it again brought up an error message stating that the window wasn't big enough. This necessitated the tedious task of altering the window size parameters in yet another hidden away menu.

Some of the graphics saved as GEM files didn't take too well to being transported into other programs and occasionally objects were lost but the EPS files worked very well indeed. This should be no surprise as, the file header shows it was created by Adobe Illustrator, one of the best packages of its kind on the Apple Mac – apparently Adobe encourage its use and a license is not required.

Silhouette has several bugs – which are currently being sorted out – and several omissions or inconsistencies which can't be tackled quite so easily.

It's not in the same league as the top vector graphics packages but the power of Silhouette lies in its price – for a three in one package it works very well indeed. And for the part-time desktop publisher who needs both bitmap and vector graphics in a hurry, it will certainly prove useful.



This is the tip of a letter S autotraced by Silhouette and now being edited by hand

Product: *Silhouette*
Supplier: *Ladbroke Computing, 33 Ormskirk Road, Preson PR1 2QP*
Telephone: *0772 203116*
Price: *£60*
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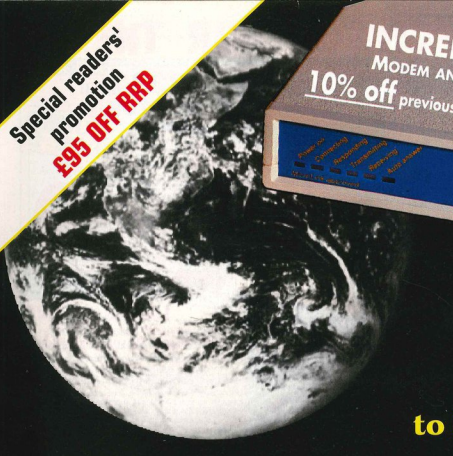

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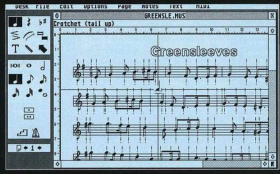
Any sequencer capable of writing standard Type 0 or Type 1 Midi files can be used in conjunction with Music DTP, although only the first ten tracks will be available to Music DTP



Accurate alignment of musical symbols is greatly aided by the note guides, the crosshair cursor and the rulers which can be calibrated in centimetres or inches

A score can be exported as a standard Midi file, with single track files as Type 0 files and multitrack files as Type 1. The resolution is selectable in clocks per quarter note

Computer music is the one area where Atari have long held the commanding heights of the industry, being able to look down smugly upon Apple and IBM as lesser players.

As the only personal computer with Midi ports in its standard specification, the ST has become a common sight in recording studios and rehearsal sessions, and few music departments in schools and colleges manage without at least one of the grey plastic boxes carrying the Fuji logo.

Never mind the primitive sound chip and the tinny monitor speakers, since a few cheap standard cables will allow you to connect all kinds of high-tech music gear to the computer – synthesisers, drum machines, even pianos and wind instruments – and turn the "games console" into a very versatile and powerful multi-track sound setup.

Pacesetting packages such as Cubase and Creator were developed on and for STs, and have become the standard by which newcomers to the scene on rival platforms are judged.

With desktop publishing being another major strength of the ST, what could be more obvious than to bring Atari's two major assets together?

Music publishing is a massive industry, catering for a vast customer base ranging from pop megastars to peripatetic music teachers, from symphony orchestras to your little brother or sister preparing for the Piano Grade Four examination.

It may be a bit fanciful to expect the big music publishing houses to adopt the ST, but there are plenty of composers, music teachers, educational and fringe pop publishers, for example, who could not justify more than a few hundred pounds to invest in their music publishing activities. It is this market that Take Control's Music DTP seems to be primarily aimed at.

Orthodox

Music DTP presents a fairly orthodox GEM interface to the user, complete with access to desk accessories, drop-down menus, toolbox panels and resizable windows.

It talks to printers via GDOS and uses standard, resolution-dependent GDOS fonts for everything except PostScript output. FSM-GDOS, the scalable font system promised by Atari now for longer than anyone can remember, is also supported.

The program comes on six disks, five of which contain different printer drivers with sets of GDOS fonts in the required resolution.

Installation is automated through an installation program which will also write the dreaded ASSIGN.SYS file (probably most GDOS users' number one hate object) but if things go wrong or your requirements are somewhat unusual, do not expect help from the rather brief and cryptic manual.

Consisting of a reference and a tutorial section on 70-odd laser-produced pages, it is a good example of why programmers should not be entrusted with documenting their own software but leave the manual to an outsider who needs to master the program from an ordinary user's perspective. All too often, there are confusing discrepancies between the software and the manual, and for some features you need to be good at the art of reading between the lines. Some definite room for improvement here!

Musical notation is a complicated subject, and manual copying of scores is a tedious business. Music DTP offers different methods of entering notes, of which the use of a Midi instrument – most likely a keyboard – is by far the best.

This can be done either in real time, using the built-in metronome, or in step time, entering each note individually from the keyboard.

You can also import standard Midi files from disk. The alternative to Midi input is manual, picking one of the large selection of symbols and notes available from the toolboxes with the mouse and placing them onto the page, but this is almost as tedious as traditional copying so this method is best reserved for short extracts or the manual editing of Midi input.

Where Music DTP – if you forgive the pun – really scores is in its extensive provision for a range of musical tastes from techno-pop to full orchestral scores – even lovers of medieval and renaissance music are not overlooked.

Dynamics

In addition to comprehensive selections of clefs, notes, rests, bar lines and time signatures, there are dynamics (crescendo and diminuendo hairpins, for example) and ample articulation symbols – phrase marks and ties, brackets, trill and pedal marks, glissandos and arpeggios.

Work on complicated or non-stan- ➤

Even computer musicians might wish to publish beautifully accurate orchestral scores. Günter Minnerup reviews a package that extends desktop publishing to the world of demiquavers and staccato dots

Bottom line

***FEATURES:** Powerful and versatile, Midi-compatible scorewriter with elementary text, font, graphics and page layout facilities.*

***EASE OF USE:** Depends on what you use it for, and how.*

dard scores, such as orchestral music with its multiple instrument parts on the same page or notations requiring something different from the standard five-line staves, is made considerably easier by the provision of template pages saved to disk.

Using multiple windows, parts can be copied and pasted between scores, and automatically transposed by clef, key and octave.

Once entered, a score can be played back either through the Midi ports or internally. The quality of the internal playback depends on the available hardware – quite reasonable results can be achieved using samples, especially with faster processors and a sampler cartridge fitted, while using the monitor sound will give the familiar ST sound chip bleeps.

Adequate

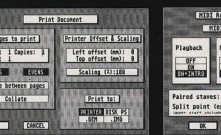
Even the latter, however, can be quite adequate for "aural proof reading", to spot the odd duff note in an otherwise perfect score before committing it to print or exporting it to a page lay-out program.

Music DTP fills one of the few real gaps in the enormous range of Midi-oriented software already available for the ST – the need for a specialised scorewriter that can be used with any of the sequencer packages on the market, and will also easily communicate with a fully-featured DTP program.

As it is also reasonably affordable – by the standards of professional Midi software – it will particularly appeal to the freelance composer and arranger needing to produce accurate and high-quality sheet music on a small budget, and to the educationalist and independent publisher seeking to integrate musical scores with text and illustrations.

There are a few rough edges, particularly in the documentation and in the handling of fonts and graphics, but this is more than balanced by the excellent support provided by Take Control, where for the cost of a phone call to Birmingham the author of Music DTP himself will sort you out if you get stuck.

Product: *Take Control Music DTP v2.2*
Supplier: *Titan Designs, Institute of Research & Development, University of Birmingham Research Park, Vincent Drive, Birmingham B15 2SQ*
Telephone: *021-415 4155*
Price: *£305.50*
Configuration: *ST or TT with mono monitor and at least 1Mb of RAM*



Several lasers and most common dot-matrix printers are supported by Music DTP. For PostScript or GEM file output, a special header file or the META.SYS driver need to be present

When entering notes by real-time playing of a Midi instrument, the computer metronome and playback of other parts already entered on the system are very handy

The DTP features

The text input facilities of Music DTP are really only suitable for lyrics, headings and short instructions and comments, as there are no line spacing controls or an Ascii import option.

Swiss, Dutch, Typewriter and Music are available in a selection of point sizes and text effects such as bold, light, italics, outline, and can be justified left, right or centre.

To enter song lyrics, the Tab key is used to move the cursor from one note to the next. Those familiar with the workings of GDOS can, of course, install additional or alternative fonts.

To include a logo, for example, or some illustration, Music DTP supports two graphics file formats – GEM bitmap image files with the .IMG extender, and GEM object metafiles (.GEM) – no Degas or TIFF, unfortunately.

Importing an image is simple but not very flexible – you click on the import icon and define the size and position of the image on the page before calling up the file selector.

Getting the size of the import frame right is not easy, even with the on-screen rulers activated, so you often end up with a distorted aspects ratio.

Things are not helped by the absence of co-ordinates or at least a visible rubber band when resizing the image, which is done by grabbing the bottom right corner and dragging it to a new position.

Automatic aspect ratio adjustment or at least the ability to enter precise values from the keyboard would have been a great help. A duplicate version of the graphics file is written into the same folder as the page, and loaded from disk into memory every time the page or the image is resized.

Considerably slower

This is not only wasteful of disk space, but also slows down things considerably, so you are well advised to leave any such operations until you have done everything else.

For frames, boxes, and other simple shapes, Music DTP provides easy-to-use drawing tools with the standard range of GEM fill patterns and line styles.

The limited text and graphics options described so far are chiefly intended for standalone use of Music DTP from note entry to printed output, but for more sophisticated layouts and designs it is preferable to do only the musical notation and lyrics within the program and then transfer the result to a proper DTP package.

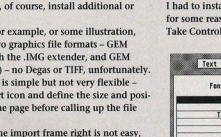
This is where the print-to-disk file export functions come in useful. Music DTP offers three options in the print dialogue – PostScript to disk, IMG and GEM.

The PostScript output requires a header file which defines all the musical notation symbols as subroutines in the PostScript language, while for text the appropriate PostScript fonts are used.

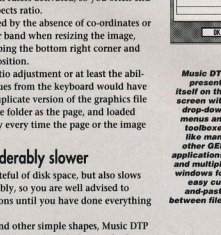
Unfortunately only Times, Helvetica and Courier are catered for users of other GDOS fonts will have to alter the header file themselves to accommodate different fonts – not a trivial task unless you know exactly what you are dealing with.

The "encapsulated" PostScript (EPS) files written by Music DTP are easily exported into other page layout software for preparation of high-quality output: in my tests, neither Fleet Street Publisher nor CompoScript, the PostScript emulator for the ST, had any problems.

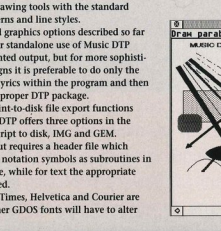
IMG and GEM files are, of course, straightforward, but I had to install the GDOS metafile driver myself because, for some reason, the default configuration as supplied by Take Control had omitted this.



The GDOS equivalents of Times, Helvetica and Courier can be used for text, but installing additional fonts is a tricky process requiring some knowledge of GDOS



Music DTP presents itself on the screen with drop-down menus and toolboxes like many other GEM applications, and multiple windows for easy cut-and-paste between files



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Public Sector

It's a little heavy on the brain cells this month with two quiz games and a rather complicated mathematical processor among the offerings

Godel

WoolleySoft Programmed by WoolleySoft

This program is definitely for the mathematically inclined among you. It is an intelligent mathematics processor which can do arithmetic, solve equations, plot graphs – it's even capable of calculus.

This version is PD and as such has limited access to some of the functions. However, if you register with WoolleySoft (£10), you will receive the full version, giving the intermediate steps in the working out and all restrictions on equation processing are removed.

When you run Godel, you are presented with three windows. The Working window acts as the work pad. Here, Godel writes information about the expression or equation being processed.

The Plot Graph window is used to plot graphs for equations (strangely enough) and the Tool Palette window contains a tool kit for quick selection of the common functions also available from the drop-down menu.

Godel is totally GEM-driven and is extremely well written. Everything is mouse controlled and selecting functions is very easy.

Cal v6.0

L.A.P.D. • Disk No. M108 Programmed by Bill Aycock

If there is one thing I personally excel at, it's forgetting important dates. You know, birthdays, anniversaries, Public Sector column deadlines (too true, too true – Ed), so any form of program which attempts to help out in such matters is most welcome.

Cal is a desk accessory that lets you keep track of such important times in your life by allowing you to attach "events" to any day of the year, either by date or according to a day's position in the month.

When Cal is subsequently run, it checks the current date and alerts you, via a on-screen message, to any events scheduled for that date.

Also supplied with Cal is a program called Calshow. This GEM-driven program will read the events from Cal and display upcoming events on the screen allowing you to check what's on for the following weeks thereby allowing you to plan ahead. Cal allows you to see the calendar of any month in any year from the year 1 to the year 9999, but it is designed for and excels in helping you keep track of special dates within the year.

Date events form the basic data of Cal and they consist of four types – recurring date events, one-time date events, positional date events and cyclic date events.

For example, birthdays, Christmas and New Year dates are examples of recurring events in that they occur every year. One-time events are such things as a dentist appointment on, say, October 13, 1992.

Examples of positional events are Thanksgiving day, which is always the fourth Thursday in November.

The final type of events, the cyclic event, occur repeatedly over a fixed time span (every so many days). For example, if you get paid every two weeks, you can set up a cyclic event for every 14 days to remind you.

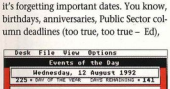
Cal also lets you assign an "importance" value to an event, starting with zero as the least important and nine as the most important. This importance value affects the way Cal displays an event.

When Cal is up and running, the display consists mostly of a calendar. The month and year of the calendar is shown and there is a column of selectable buttons to the right which allow you to select the different months.

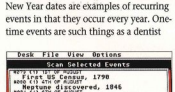
Also, at the bottom of the display are a number of buttons for selecting other functions such as scanning for, editing and assigning of events.

This GEM environment makes for easy operation when using Cal and provides for quick retrieval of information.

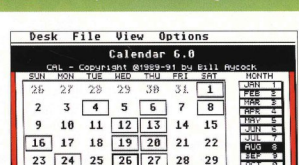
In a way, I'm sorry I have reviewed this program. Now there's no excuse for my editorial work being late (keep that in mind – Ed).



Clicking on a particular day allows you to view any message assigned forthat day



You can also scan through events to view future events



Cal's initial screen shows the calendar for the month with various buttons allowing you to change month, day or year

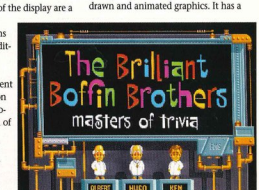
The Brilliant Boffin Bros

Goodmans International (MicroMagic Budget Software)

As I write about this particular game, there are three people playing it in the *Gamer* magazine vicinity. *Gamer* ed, Dan, Phil (our production ed) and Ben (staff writer extraordinaire) all have their thinking caps on.

From a multitude of questions they have only got three right, which is because some of the questions are obscure.

Visually, The Brilliant Boffin Brothers (TBBS) is extremely good, with well drawn and animated graphics. It has a



The three bros, ready to tax your brain cells

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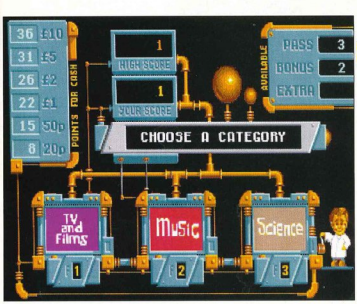

Choose the category you desire from the randomly offered topics

question being posed with three possible answers displayed on-screen and a time limit to choose what you think is the correct answer.

However, TBBS allows you to choose from different categories of questions such as TV & Film, Music or Pot Luck which are randomly offered as you play the game.

I don't know what it is about these trivia-type games that generate so much interest – maybe it's because some of the questions, such as naming members of the Saturday kid's series, the Banana Splits, brings back childhood memories or something.

TBBS is a budget game on the MicroMagic Budget Software label of Goodmans International and is priced at £3.95. Well worth it.

Mono games

Goodmans International • Disk No. GD 1637 Programmed by: David Becker

This disk contains four programs that run in hi-res mode only. The four programs are Alpha, a name generator, Mumbo Jumbo, a word game, Search Me, a word search game and Keno, a numbers game.

Alpha is a name generator and is possibly useful for such dilemmas as thinking up names for the baby, pets or even character names for role-playing games.

I say possibly useful because some of the words that get produced by the program are complete gibberish, however, there are bound to be some words that you can use out of the many hundreds that are created.

The next program, Mumbo Jumbo, is an anagram game where you have to guess the word from a collection of mixed up letters.

The computer selects a word for you and you type in your guess. If you guess correctly, a picture of some nameless chap appears informing you of your success.

Search Me is a word search program where you have to find the words in a grid-like collection of letters with each of the words running vertically, horizontally or diagonally.

Keno is the last program on the disk and isn't really a game but a kind of utility for analysing the game of Keno and the outcomes using different selections of numbers.

In the game Keno, 20 numbers are chosen at random from a possible eighty numbers. You can choose between one and 20 numbers, and your winnings will increase the more correct numbers you hit and the more you bet.

All the programs on the disk are GEM-driven and are simple but playable.

Get in print!

If you are a PD library and you wish to feature in *ST User*, just send any of your titles which you feel worthy of review to:

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If you do send any of your titles, please try to adhere to the following steps to ensure that I can quickly assess each contribution.

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Sprechan Sie Deutsch?

Do you speak German? Probably not, if one goes by the number of people asking for help with German software on various BBSs around the country.

As many of you must be aware by now, Germany is a very fertile ground for high quality Atari ST software and this includes PD. However, the downside is that most of it is in German.

The following should help you at least find your way around by explaining some of the most commonly used terminology:

Abbruch	Cancel	Laden	Load
Alles	All	Lesen	Read
Andern	Change	Lösche	Delete
Anfang	Start	Maus	Mouse
Ausgabe	Output	Nein	No
Bild	Picture	Öffnen	Open
Datei	File	Ordner	Folder subdirectory
Drucke	Print	Pfad	Path
Drucker	Printer	Puffer	Buffer
Einfügen	Insert	Schalter	Switch
Eingabe	Input	Schließen	Close
Einsetzen	(to) set (something)	Schrift	Font
Ende	End	Screiben	Write
Quit	(great leaps of the imagination not required here)	Seite	Page
		Speicher	Memory
		Speichern	Save
Ersetze	Replace	Suche	Find
Farbe	Colour	Verschiebe	Move
Hilfe	Help	Verwenden	Use
Ja Yes		Wahl	Select (selection)
Kopiere	Copy	Weiter	Continue

Many thanks to Don Maple for compiling this useful list of German words. It should prove most useful for those GEM-driven programs with German Resource files.

Trax

Public Dominator • Disk No. M41 Programmed by: Adrian Hawkins

Trax is a sample sequencer for the STE range of computers. It fully utilises the DMA sound chip in the STE offering stereo capability.

You will need a stereo monitor of course, or alternatively, you can attach the STE to a hi-fi via the phono sockets. All eight channels can be output through a normal TV/monitor, but not in stereo though.

Trax uses 6.25kHz samples only but the disk contains two conversion programs to convert from most other trackers, one is for converting individual files and the other is for converting entire disks full of files.

If you have any sound sampler cartridges such as those from Microdeal, you can create your own samples for use in Trax. The author recommends sampling at 12.5kHz and then compressing the sample by half to 6.25kHz. This achieves a much higher quality sample than directly sampling at 6.25kHz.

The actual Trax editor is very similar to all the other trackers available for the STE. It is mouse controlled and features numerous buttons for selecting functions.

Trax is not the most feature-packed sequencer for the STE but it is a competent addition to the sequencer collection. Trax is a shareware program and for the £5 registration fee, you will be sent more modules, lots more sample files, the very latest version of Trax as well as replay routines for the programmers among you.

Also for the programmers, there is technical information about the file format used in the modules.

ATARI ST/TT

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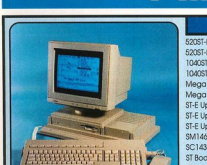

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More than music

The Motorola DSP56001, as fitted to the Falcon, is a powerful digital signal processor which can handle more than just sound.

Don Maple investigates

DSPs or digital signal processors have lately gained a considerable amount of prominence. For Atari ST owners this culminated in the revelation that Falcon 030, the first in the next generation of ST-compatible computers, has a DSP in its innards.

Atari appears to be very proud of this, so much in fact, that one gets the impression that the Falcon is actually the Motorola DSP56001 with an ST-compatible computer wrapped around it. As you will see below there is a legitimate reason for all this excitement.

Contrary to popular misconception, digital signal processing is not strictly a domain of sound processing. DSP chips do exactly what the name says. They process digital signals (whatever their source) in real time. Most DSP applications include sound but the chips are much more versatile than that.

Why do we need signal processing? Simply put, almost everything around us can be reduced to digital signals. And the fastest and most flexible way to process them is by using a DSP. Let's take a few practical examples.

Equaliser

Put a DSP between a sound source and an amplifier and you have a way of altering the sound. A ten-band stereo equaliser or a multiple sound effects unit (echo, reverb etc) are then only a short program away.

Connect it to a phone and you can playback digitised sound and digitise incoming calls in real time. Bingo! An answering machine. And while you're at it how about modulating/ demodulating phone signals in real time? Yup, you're right – a software modem or even a fax!

Signal processing involves three steps – pre-processing, feature extraction and pattern recognition. Since the DSPs are still relatively new, most applications involve pre-processing.

For example, A/D (analogue-to-digital conversion) at 44.1kHz is a pre-processing type of task which produces CD-quality sound. Your computer becomes a digital recorder! Feature extraction and pattern recognition are widely used in speech recognition and computer vision.

Technical

So let's get technical. Falcon's DSP56001 runs at 32MHz achieving 16MIPS (million instructions per second). All data paths to and from the processor are 24-bits wide (three bytes) which translates into a dynamic range of 144dB.

Internally, however, the data is processed using 56-bit wide registers. The processor also has 512 words of on-chip RAM. Do note that a DSP56001 "word" is 24-bits (three bytes) wide.

From the programmer's point of view the processor has two input registers, X and Y. Each can be viewed as one 48-bit register or two 24-bit registers. For example, X can be seen as X0 (bits 0-23) and X1 (bits 24-47). Internally there are also two 56-bit accumulators A and B.

They can be split up into two 24-bit and one 8-bit register. For example A can be seen as A0 (bits 0-23), A1 (bits 24-47) and A2 (bits 48-55). Some portions of A and B can also be combined with each other.

The DSP56001 has a total of 24 address registers divided into three groups of eight – eight pointer registers (R0-R7), eight offset registers (N0-N7) and eight modifier registers (M0-M7). All address registers are 16-bits wide.

The program control comprises the program counter (PC), the status register (SR), the stack pointer (SP) and two loop registers, loop address (LA) and loop counter (LC). There is also an operating mode register (OMR) controlling internal operation of the processor.

Pipeline

The chip is highly parallel in nature and it contains a so-called three-stage pipeline. This means that it can simultaneously work on three instruction – execute one, decode the second and fetch the third. And while that is going on, its two serial ports can simultaneously send and receive full-duplex data!

The instruction set contains 62 instructions. These include math, logical, bit-manipulation and program-control instructions. There is even a hardware DO loop instruction. Many instructions execute in only one instruction cycle.

Because digital signal processing usually involves two sets of data, the DSP56001 splits data into X and Y components each 64k words in size. Here are a couple of applications to make this clearer.

For example, the two components can be used as X and Y co-ordinate points for image or graphic processing. On the other hand, when doing digital filtering one component can contain data and the other coefficients.

External

All this information may appear a bit overwhelming at first but any 680x0 assembler programmer will be at home with the DSP56001 in no time. The clear design and powerful instructions make this chip a pleasure to work with.

Including the DSP56001 within Falcon 030 was a very good move. The DSP56001 combined with numerous Falcon ports can easily be converted into a digital recording studio with almost unlimited effects, a video digitiser, a modem, a fax, an answering machine and much, much more.

Programming the Motorola – an example

```
;
; Perform all FFT passes with triple nested DO loop
;
  do          #@cvi(@log(points)/@log(2)+0.5),_end_pass
  move        #data,r0                    ;initialize A input pointer
  move        r0,r4                       ;initialize A output pointer
  lua         (r0)+n0,r1                  ;initialize B input pointer
  move        #coef,r6                    ;initialize C input pointer
  lua         (r1)-,r5                    ;initialize B output pointer
  move        n0,n1                       ;initialize pointer offsets
  move        n0,n4
  move        n0,n5

  do          n2,_end_grp
  move        x:(r1),x1   y:(r6),y0       ;lookup -sine and -cosine values
  move        x:(r5),a    y:(r0),d        ;preload data
  move        x:(r6)+n6,x0                ;update C pointer
  do          n0,_end_bfy
  mac         x1,y0,by:(r1)+,y1;          Radx 2 DIT butterfly kernel
  macr        -x0,y1,b    a,x:(r5)+   y:(r0),a
  subl        b,a         x:(r0),b    b,y:(r4)
  mac         -x1,x0,b    x:(r0)+,a   a,y:(r5)
  macr        -y1,y0,b    x:(r1),x1
  sub         b,a         b,x:(r4)+   y:(r0),b

_end_bfy
  mov         a,x:(r5)+n5   y:(r1)+n1,y1  ; update A and B pointers
  move        x:(r0)+n0,x1  y:(r4)+n4,y1

_end_grp
  move        n0,b1                       ;divide butterflies per
                                          by two
  lsr   b     n2,a1                       ;multiply groups per pass by two
  lsr   a     b1,n0
  move  a1,n2

_end_pass  endm
```

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LEARNING Assembler Part 8

Programming the 68000

Marc Young is going Batty, and looking a little Shifty, as he continues to develop the Game with No Name

If the word Tables brings back memories of sitting in primary school, reciting your twelve-times, then fear not. A table, in programming terms, is simply a method of referring to some data.

In our program, we have 240 squares (20 across and 12 deep). Our program will need to know exactly what is in each square. In fact, each square could be blank, contain the target, or contain a "bat" which will deflect our ball.

It is simple to visualise what we need the program to do in order to keep track of what is where. Simply imagine each square on the screen is to be represented by a single byte in memory.

The square at the top, left corner of the screen will be the first byte; the second byte would be the next square on the right, and so on, up to the twentieth byte, representing the square on the top right of the screen.

The 21st byte represents the left-hand most square on the second row, and so on. All we need to do, then, is reserve the necessary RAM, and check each byte of it, as necessary. In PROG0013 I have reserved the necessary RAM at the label **squares** using the line:

```
DS.B  (grid_width+1) * (grid_height+1)
```

It is possible that your assembler will not allow such a statement, but I have used it to demonstrate an important point in program development. If your assembler does reject the statement, you will simply have to change it to read:

```
DS.B 240
```

At no time in the program is either the width or the height of the playing area referred to, except in terms of **grid_width** and **grid_height**. In other words, I have not hard coded the width or height.

So if we decided to reduce the size of the playing area, all we would have to do is to change the lines at the start of the program which define **grid_width** and **grid_height** as 19 and 11 respectively.

I have also used this idea with the keys which will be used to control our game. They are defined as **left_key** and **right_key** at the top of the program. This means that, if you don't like the keys I have chosen, you just need to change these two lines.

On pressing one of the two keys, the program needs to display the bat (left or right) on the screen at the position of the square into which the ball is currently moving. at the same time, the program needs to update the table to reflect the fact that a bat is there.

A number of minor changes will need to be made to our program, to allow us to perform these additional functions as efficiently as possible.

Although not strictly necessary, the subroutine **input** is changed to store the key pressed in the location labelled, logically enough, **key**.

Where the program had tested D0 directly (for the Q key being pressed to exit the program) this has been changed to test **key** instead. These changes will ensure that, as we add to the program, should we corrupt the D0 register, the program will continue to work correctly.

Because we want the "bat" to appear in the square into which the ball was travelling when the key is pressed, we really could do with knowing exactly which square that is!

For this reason, the new labels, ball_toX and ball_toY have been added, giving the X and Y co-ordinates of the destination square. The two new variables are updated whenever the ball moves onto a new square.

When the relevant key is pressed, we want the program to display a bat, sloping left or right as applicable, at the square defined by ball_toX and ball_toY.

Doesn't sound too complicated, does it? We've used the Blit routine to display the ball, so we can just use the same routine to display the bat.

Unfortunately, things are rarely as easy as they may at first appear. If we display the bat onto the screen which is currently hidden, it will flicker, because we haven't updated both screens. The same will be true if we display it to the currently visible screen.

The obvious solution would be to display it to both screens. Unfortunately, this means that the bat will get erased almost as soon as it appears, as the routine to un-display the ball gets its data from the master background screen! So now we need to display our bat three times, to each of the three screens!

With all this processing going on every time the player hits a key, we could be in for a jerky game! You've probably guessed that there is a simple solution, and in this case you are correct.

If we simply display the bat on the master screen, the program will use this information to erase the ball sprite, and our bat will appear.

As the ball is moving a pixel at a time, the bat may only appear slowly, but I think you'll agree that the effect is actually pretty good.

Take a look at PROG0013 on the CoverDisk. This is the program as it stands now. It tests for the Z or X key, and displays the relevant bat if either is detected.

One thing it doesn't do, at present, is allow lower case keyboard entry. This is not really acceptable for a professional ➤

Diagonal dilemma

If you have done your homework from last month, then you shouldn't need to look at PROG0012 on this month's CoverDisk. If you remember, I asked you to try and write the code to enable our bouncing ball to bounce vertically as well as horizontally.

If you assemble PROG0012 and run it, you will see our ball bouncing up and down the screen. To get it to bounce horizontally again, simply change the initial value of ball_dx to 1, and ball_dy to 0.

If you change the values of ball_dx and ball_dy to 1, you may expect the program to move the ball diagonally around the screen. Try it. See if you can work out why it doesn't work before reading on.

If you take a look at the subroutine update_ball you will see that, after storing the old position of the ball, the first thing we test is whether the ball is moving horizontally (ie, if ball_dx is non-zero). If the ball is moving horizontally, the program "drops through" the test into the procedure labelled updt_horiz. Once in this procedure, which handles the horizontal movement, the program does not return to updt_vert, but rather exits the subroutine via updt_end.

So if the ball is moving horizontally, it cannot move vertically.

It may seem that I am stating the obvious here, but there is a very important point to be made. Our program will never need to move the ball diagonally. Therefore it would be a waste of time for the program to perform the required tests needed to move both vertically and horizontally.

Admittedly, in this case, the wasted time would not be noticeable, but in a more complex program milliseconds can be all important.

If you are interested in making the required changes, all you need to do is change all references to updt_end in the updt_horiz section to updt_vert and put an extra test within updt_vert to branch to updt_end if ball_dy is zero.

piece of software, so we'd better do something about it.

When I added a check to allow the Q key to be pressed to exit the program, I simply checked for Q or q. This is fine, I suppose, but there is a far more elegant method, which also takes far less time when checking for multiple key presses.

The Ascii code for A is decimal 65. The Ascii code for a is 97, a difference of 32. Z is Ascii 91 and z is Ascii 123, again a 32 difference. If you look at the same numbers in binary, there is an obvious pattern.

```
A = 1000001      Z = 1011011a = 1100001
z = 1111011
```

Each lower case letter differs from its upper case cousin by one bit – the "32" bit (remember each bit of a binary number, from right to left, corresponds to 1, 2, 4, 8, 16, 32 and so on).

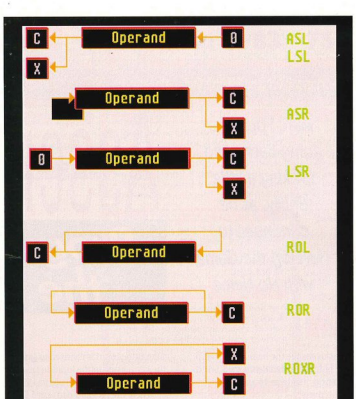
This means that if we have a byte with a value and we don't know whether it was upper or lower case, we can force it into capitals by setting the sixth bit, or force it into lower case by unsetting the sixth bit.

This can be performed in assembler as follows, where D0 contains the Ascii code:

```
OR.B    #32,D0 ;Convert to lower
AND.B   #223,D0 ;Convert to upper
```

The second version, converting to upper case, may look less obvious until you see that the number 223, in binary, is 11011111.

If you remember the logical operations from a month or two back, ANDing with this number will have the effect of forcing bit 6 to be set to 0. This sort of feature is the kind of thing to be on the look-out for when writing programs. For a program to check both upper and lower case versions of the same letter can be very wasteful compared with one logical operation and half the tests. I have put this change into PROG0014 on the CoverDisk.



The Shift and Rotate instructions may be easier to understand when shown diagramatically

The Shift instructions

Arithmetic Shift Left (ASL)- *This moves the bits to the left. The previous left-most bit is moved to the Carry (C) flag and the Extend (X) flag. The Overflow (V) flag is set if the value of the left-most bit changes. Zero bits are moved in from the right.*

Arithmetic Shift Right(ASR) – *This moves the bits to the right. The previous right-most bit is moved to the Carry (C) flag and the Extend (X) flag. The left-most bit remains the same.*

Logical Shift Left (LSL)- *This moves the bits to the left. the previous left-most bit is moved to the Carry (C) flag and the extend (X) flag. The Overflow (V) flag is always cleared. Zero bits are moved in from the right.*

Logical Shift Right (LSR)- *This moves the bits to the right. The previous right-most bit is moved to the Carry (C) flag and the Extend (X) flag. The Overflow (V) flag is always cleared. Zero bits are moved in from the left.*

Rotate Left (ROL)- *This moves the bits to the left. Each bit moved from the left is moved back into the right. The Carry (C) flag is set to the value of the last bit moved off the left.*

Rotate Right (ROR)- *This moves bits to the right. Each bit moved from the right is moved back into the left. The Carry (C) flag is set to the value of the last bit moved off the right.*

Rotate Left with Extend (ROXL)- *This effectively acts in the same way as Rotate Left, but the Extend (X) flag is treated as an extra bit. The left most bit is moved to the Extend flag, while the previous value of the extend flag is moved to the right-most bit.*

Rotate Right with Extend (ROXR)- *This effectively acts in the same way as Rotate Right, but the Extend (C) flag is treated as an extra bit. The right most bit is moved to the extend flag, while the previous value of the Extend flag is moved into the left most bit.*

LEARNING Assembler PART 8

Although our Game with no Name program has been designed to cover a wide range of instructions, there are some very useful facilities which I haven't managed to find an excuse for including. To conclude this month, I will mention just a few of them.

It is sometimes necessary to shift the bits in a byte (or Word or Long Word) to the left or right. One obvious example is when multiplying by two.

If the bits at an address are shifted to the left by one place, bringing a zero into the right, this has the effect of multiplying by two. As an example, take the number 795. This is 1100011011 in binary. Shifting this left by one place gives 1100110110 which is 1590.

Shifting left by two places multiplies by four. Shift again to multiply by eight, and so on. Now, you may be thinking, surely there is a multiply instruction in the 68000, so what is the use of all this?

Well, the answer lies in the efficiency. A multiply instruction can take up to seven times as long to execute as a shift instruction!

Of course, shifting bits to the right will effectively divide by two (or four, eight etc). There are other reasons why you may want to shift bits besides multiplication and division. To keep you on your toes, try writing a program which uses the following instruction:

```
LSR    #1,D0
```

which shifts the bits in D0 one place to the right, the previous right-most bit being shifted to the Carry (C) flag.

The program should print out the Ascii value of a key pressed, in binary. Remember that the GEMDOS 8 will return the value of a key pressed in D0.

Glossary

Hard Coding – The use of fixed values in a program, rather than changeable parameters.

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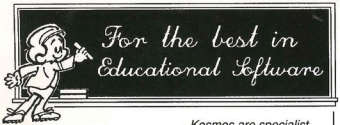

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ATARI ST USER Advice service

Source code sorrow

Maybe I'm thick but I don't seem to have enough information to get the assembler article to function.

Could you give me a step-by-step guide to the stages I must go through and how I get into the assembler to write the program contained in PROG.001?

It seems to me in my poor befuddled state, that there should have been an extra article on the necessary supplementary procedures to get the program into a usable form.

G A Godber, Evesham, Worcs

From your difficulties Mr Godber, it seems you are a newcomer to programming and as such I must point out that the assembler series is not the ideal place to learn programming from scratch.

Assembly programming is an exact and user unfriendly language and in practically all instances requires some prior experience in programming, such as Basic.

The programs that accompany our tutorial, such as the PROG.001 you mention in your letter are what we term assembler source code. Such source code can be written or loaded into any text editor/ wordprocessor capable of loading and saving Ascii format text.

To convert the source code into an actual program that you can execute requires an assembler program. Most assembler programs come with their own text editor/wordprocessor.

The assembler program take the source code and, essentially, reads it, converting it into actual machine code instructions that the computer understands.

There are masses of text editors to choose from in the public domain which will allow you to load the files on our CoverDisk into your computer.

The assembler program is also available from PD libraries, but I believe our tutorial, which is written by Marc Young, is centred around HiSoft's excellent DevpacST v2.

If you do have a PD assembler, it may have slightly different methods for defining certain data elements, will require some conversion and will lack other powerful features as found in commercial packages.

Got a problem?

Is your printer playing up? Floppies behaving strangely? Having problems loading ZX81 games on your Spectrum emulator? Maybe *ST User* can help. Jot down your gripe, along with as much information about your set-up as possible, and send it to:

Darren Evans, Advice Service, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP

TCB Tracker blues

I have just got hold of TCB Tracker and have a friend who has written a module in his spare time.

He has a 1Mb 520ST but I only have 512k. Every time I try to load my friend's module, I get an error message indicating that there is not enough memory to load the module. Will a packer utility enable me to squash the file size down so that it will load into my measly 512k?

G Blackwell, Rhyl, Wales

I'm afraid you will not be able to use a packer to solve your problems. These programs only compress the file size of a program so that it will fit on a disk with limited space.

When they are loaded into memory, they are de-compressed back to their original size, so you will still have a problem.

One thing you may like to try is putting the TCB Tracker-executable program into an AUTO folder. TCB Tracker does not require GEM to run and should execute from the AUTO folder.

Because a AUTO folder program does not require GEM, there is a little extra memory released due to GEM not being initialised and this may be enough for you to load the module.

Bomb out!

My friend and I both own Atari ST computers, yet when any games are played on his computer after every 10 or 20 minutes, bombs appear on-screen and the computer has to be switched off and the game reloaded.

However, if we play the games on my computer, they work perfectly. What is wrong?

Richard Appleford, Fareham, Hants

I'm afraid I need more information than you have provided to give a definite answer to your problem. There are numerous possibilities as to why the games are "bombing out".

The actual number of bombs on the screen specifies the error number and can give valuable information as to the cause.

The problems could range from a fault with the power supply, right up to faulty or loose operating system ROM chips. Also, does the game only bomb out when accessing the drive? If so it could be a problem with your disk drive or even the DMA.

I suggest you send it off to an Atari-approved engineer to run a fault diagnostic check on it.

STE "over scrolling"

I seem to be having problems with my 520STE "over scrolling". On text files, *READ.ME* and information files of several programs, the text seems not to be fully displayed on-screen length wise.

When scrolling, two to three lines of unseen text disappear off the top of the new page. My STE has TOS 1.62 and is coupled to a Atari SC1435 monitor.

The problem is still there in medium resolution.

C Skitt, Burstwick, Nr Hull

I have experienced this over scrolling with my STE too. As far as I can tell, it only occurs if using the right mouse button to advance the text.

What seems to be happening is that the STE is constantly reading the mouse button's status too quickly and if the mouse button is held down a fraction too long, the STE is interpreting another couple of mouse clicks.

However, it's not the end of the world and if you are reading text via this method, I would advise using either the space bar to scroll the text by one full screen or the Return key to scroll a line at a time.

Your letter also prompted me to check if the same thing happens on my Mega STE to see if this niggly problem was spotted, but, alas, it is still evident in this TOS version too.

It's an STE – not

I've got an Atari 520STFM and I've had problems running the Harlekin software given away on the CoverDisk.

I've copied the archived program across to a blank disk and de-archived the files as instructed, but when I try to run it, a message comes up saying "RESETMEM allocates reset resident memory" and "Error – this machine is not an STE".

I assume this to mean that because I haven't upgraded the memory, the software won't run. Is this right?

I Westbrook, Putney, London

The reason these messages appear are because there are two programs in the AUTO folder which automatically run when you boot with the Harlekin disk.

The program RESETMEM.PRG which causes the "RESETMEM" message is only to be used if you are using a large screen monitor which gives extended resolution. This can be deleted from the AUTO folder, or de-activated by renaming it to RESETMEM.PRX.

The same goes for the STE_FIX.PRG which allows STE owners the luxury of being able to boot up in med-res, which, due to a bug in STE TOS, is not usually possible. Obviously you do not ➤

ATARI ST User Advice service

have an STE so you can delete or rename this too.

You should then find that Harlekin should load and execute normally.

Unrecognised hard drive

A friend of mine, who has recently had the fortune of acquiring a large amount of money through winning a competition, has treated himself to another hard drive to accompany his other two that he has attached to his ST.

After much grovelling and pleading, he has eventually taken pity on me (being hard driveless), and decided to sell me his Atari Megafile 20.

At last, I had a hard drive. I rushed home, connected it to my ST and switched on eagerly waiting for all those extra drive icons to appear on my Desktop.

However, all I got was the normal Desktop with the internal and external drive icons. I tried installing drive C and double clicking on it but I got an error message saying the device does not exist.

There is nothing wrong with the hard drive as it was working on my friend's machine prior to him giving it to me. In fact, he set up partition C to auto-boot as soon as I got home. So why doesn't it work on my machine?

I can't ask my friend for the solution as he has gone off to America with his new found wealth in search of a job, so you are my only hope.

Please help as I can't wait to put my Sierra games onto my hard disk and play them without a single disk swap.

P Rushton, Clacton-on-Sea, Essex

The only reason I can think of as to why the hard drive is not responding is that your friend did not have this drive as PHYSICAL UNIT 0.

When you have more than one device (including hard drives) plugged into the DMA port, each one has to have a different UNIT ID number so the ST knows which device it is to access. For example, if you have three hard disks attached, they would each be referred to as PHYSICAL UNIT 0, 1 and 2.

This ID number is altered in the Atari Megafile hard disks by use of DIP switches which are awkwardly located inside the casing. Most modern hard disks have some external switch, usually at the back of the drive, which makes for easy alteration.

It seems your friend has neglected to change your hard drive back to PHYSICAL UNIT 0 which is required if you only have one hard drive attached. The solution is to open up the hard drive and look through the holes in the metal shielding. You should see the DIP switches and should set them all to OFF.

When you reboot, you should find your ST will recognise the attached hard drive and you will be able to play your Sierra games to your heart's content.

Multi TOS

After finding out the new Falcon machine was to incorporate a multi-tasking operating system, I recently heard that there was a program available in the public domain which was a replacement multitasking operating system for the ST.

Is it true that the new Falcon operating system is based on this public domain version?

S Montain, Nottingham

Apparently, Atari licensed the program from Eric R Smith, the author of the PD multitasking OS called MiNT.

I believe that PD MiNT is currently at v0.94 and is available from most PD libraries.

The version that will come with the Falcon is obviously more sophisticated with lots of additional features added by Atari's software guys and girls, but it is essentially based around Eric's original software.

Virus advice

Not being particularly experienced with computers, I am somewhat worried about all the news about viruses and the various nasty things they can do.

I have talked to many people on how to avoid "infection" but the advice given is sometimes contradictory. I hope you can answer the following questions.

1. If I press reset, will it clear out any viruses or do I really have to completely turn off my ST?
2. Are there any viruses that bypass the write-protect mechanism of the disk drive, thereby being able to write to write-protected disks?
3. What is the difference between boot viruses and link viruses?

Your advice on any of these questions will be greatly appreciated.

Daniel Clinch, Madrid

Viruses are a real worry among new users. There is certainly some conflicting information when it comes to what viruses are capable of.

To answer your questions. It is not advisable to rely on pressing reset to clear a virus from memory. Most viruses are written to ensure that they are not cleared when reset is pressed. However, no amount of clever coding can survive a total powering down of the computer.

It is wise, though, to wait approximately 30 seconds for a 1Mb machine to ensure the RAM is cleared before turning on the machine again. Users with more memory should increase this time.

There is no way at all that any virus can de-activate the write-protect mechanism of a disk drive. Write-protecting your disks is one of the easiest ways of ensuring your disks remain virus free.

Boot viruses are the most common and are present in the boot sector. They eventually destroy the boot sector of a 3.5in disk and make any files on that disk inaccessible.

Link viruses are those that attach to the end of any files on the disk. These are the ones that commonly destroy data on hard drives.

Strange formatting

I seem to be having a recent problem with my Mega STE and its internal high density disk drive.

When I try to format a blank high density disk, an error message appears saying that the disk may be damaged and failing to complete the formatting procedure.

It has only happened recently and I have only had the machine for three months. I would appreciate any help you could give.

K Colbany, Leicester

If you have a monitor sat on top of your Mega STE, it may be that it is causing electronic interference with the disk drive's electronics.

I have only come across this phenomenon once, when I used to have a Philips monitor stood on top of the Mega STE. When I took the monitor off the Mega STE, the problem disappeared.

Try relocating your monitor and see if that clears up the problem. If it persists, your machine is still under warranty, so send it back to have it checked out.

NEC Multisync 2a

I have a Multisync 2a from NEC and I was wondering if it is possible to connect it to my Mega ST. It is in perfect working order and would be a shame if I had to buy another monitor in place of it.

I have experience in electronics and I would be grateful if you could provide me with a pin assignment list for the monitor. I would then be able to construct my own lead.

J Rodgers, Southampton

Here are the pin assignments for the 2a. It should just be a case of cutting off the Mini D-Sub type connector and referring to the pin assignments in the ST manual.

1	RED
2	GREEN
3	BLUE
4	GROUND
5	GROUND
6	GROUND
7	GROUND
8	GROUND
9	NO CONNECTION
10	GROUND
11	GROUND
12	NO CONNECTION
13	H SYNC
14	V SYNC
15	NO CONNECTION

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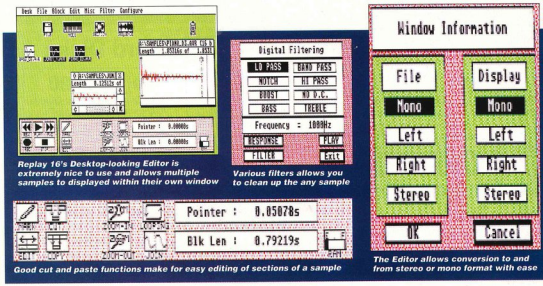


Replay 16's Desktop-looking Editor is extremely nice to use and allows multiple samples to displayed within their own window

Various filters allows you to clean up the any sample

Good cut and paste functions make for easy editing of sections of a sample

The Editor allows conversion to and from stereo or mono format with ease

Sweet sixteen

Darren Evans shows how you can wise up to the cool crowd and, er, drop the bass with juicy 16-bit samples, all courtesy of Microdeal's new sampling package, Replay 16

Up until now, all samplers available for the ST have been 8-bit. To utilise 16-bit sampling would have required separate equipment at quite a high cost.

Now Microdeal, the well known name in ST sampling packages, can offer full 16-bit capability – both input and output – giving CD quality sound, albeit in mono, at an extremely attractive price.

It certainly is a price and performance breakthough in the sampling arena. The hardware unit plugs into the cartridge port and audio connections to and from the sampler are provided via standard phono connectors. Also, a volume control adjuster is provided.

On the software side, Replay 16 comes on four disks containing the Editor, Drumbeat and Midiplay, with the fourth disk containing example sample files.

The Editor is the most important part of the sampling process. It allows you to actually record the sounds and save them out to disk and also provides the many editing tools with which you can improve and adjust the sampled sound until you are satisfied with it.

Mature

Considering Microdeal's experience in producing sampling packages over the years, the software is naturally mature and provides many features and capabilities found only in professional equipment.

The Editor is totally GEM-driven and resembles a Desktop environment with its collection of custom icons (including its very own trashcan) with which you can call up the major parts.

This ease of use and friendly environment all add up to increase the speed of the sample/edit process.

An indication of an editor's power is in the editing functions it provides for the user. Replay 16's Editor offers some very powerful functions for changing the sample that is in memory.

There are comprehensive Block commands for copying and pasting marked parts of a sample and when it comes to altering the way a sample sounds, there are 13 functions such as Fade, Overlay and Channel Swap as well as six special effects like echo and flange.

Naturally, Replay 16 takes advantage of the STE and TT's enhanced sound capabilities and allows the alteration to the left and right volume as well as bass and treble values. Although the sampler is mono, there is the ability for conversion to or from mono and stereo from within the Editor from the Configure menu.

Powerful

When recording samples, there is a very powerful tool available in the Set frequency selection in the Configure menu. From here, it is possible to change the play/record speed of the active sample displayed on-screen and then re-sample a sound to compensate for a record/play speed mismatch.

Sample rates up to 48kHz can be used and the Editor can re-synthesise samples to practically any other speed if needed.

The sound quality produced by the sampler is outstanding, especially when played through the hi-fi, and it shouldn't be too long before we start to see the emergence of multitrack Midi sequencers offering 16-bit sample output support.

The Midiplay software provides a keyboard emulator which can take samples recorded and edited within the Editor and play them under the command of an external Midi keyboard or sequencer.

Midiplay can cope with up to 128 different samples in memory – space permitting of course – and allows for up to one samples for every note on the Midi key range.

Once a sample is loaded into Midiplay and assigned to a note or range of notes on the keyboard, it can then be referred to as a voice. Midiplay can play up to four voices simultaneously.

This may be any combination of up to four notes of the same voice (four note polyphonic) or one note of each of four different voices (monophonic).

Also, each note may have certain attributes assigned to it such as Pitch, Bend and Looping. Such attributes are assigned by simply clicking the mouse on the required function.

The manual accompanying the software is very well written and contains a welcome tutorial section on the use of the Editor.

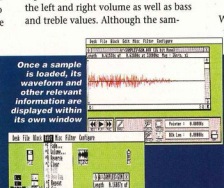
Microdeal are noted for their affordable sampling packages and Replay 16 offers equal value for money along with 16-bit technology.

Product: *Replay 16*
Supplier: *Microdeal Limited, PO Box 68, St Austell PL25 4YB*
Telephone: *0726 68020*
Price: *£129.95*
Configuration: *All ST/Es and TT*

Bottom line

FEATURES: First 16-bit sampler with extensive software functions.

EASE OF USE: GEM-driven Editor makes sampled recording easy.



Once a sample is loaded, its waveform and other relevant information are displayed within its own window

A comprehensive range of effects can be imposed on the active sample in memory

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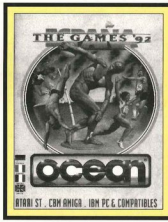

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We want to make sure that we are providing you with exactly what you want for your hard earned pennies. This is your chance to make Atari ST User work for you!

PART 1 – Getting to Know You!

- How old are you?
  - Under 16
  - 16-23
  - 24-34
  - 35+
- Which sex are you?
  - Male
  - Female
- Marital status
  - Single
  - Married
- What income bracket are you in?
  - Student
  - Under 10k
  - 10k-15k
  - 15k+
- Do you have children?
  - Yes
  - No
- Are you a home owner?
  - Yes
  - No
- Do you have a driver's licence?
  - Yes
  - No
- Do you have any of the following qualifications?
  - 'O' Levels
  - 'A' Levels (or equivalent)
  - HND (or equivalent)
  - Degree (or equivalent)

PART 2 – You and Your Atari

- What Atari system do you have?
  - ST
  - STF
  - STFM
  - STE
  - Mega
  - Mega STE
  - TT
- What memory does your system have?
  - ½ meg
  - 1 meg
  - 2 meg
  - 4 meg
  - 8 meg
  - Other (please state) _____
- What hardware do you own / intend to purchase over the next six months?

	own	intend to purchase
Falcon computer		
Extra floppy drive		
Hard Disk		
Memory upgrade		
Printer		
Genlock		
Digitiser		
Sampler		
MIDI set up		
Printer		
Monitor		
Accelerator card		
Emulator		

- Which are you using :
  - TV
  - Monitor
- If you are using a monitor what type are you using? _____
- Have you bought shareware or public domain software in –
  - The last month
  - The last six months
  - The last year
  - Never
- How regularly do you buy new games?
  - Less than one a month
  - One a month
  - Two-three a month
  - Three-five a month
  - More than five a month
  - Don't buy games
- How much time do you spend on your computer per day?
  - Less than one hour
  - Up to two hours
  - Up to three hours
  - Up to four hours
  - Up to five hours
  - Five hours or more
- How long have you had your current computer?
  - Less than one year
  - Up to two years
  - Up to three years
  - Three years or more
- Is this your first computer?
  - Yes
  - No
- If no please state which one you owned before _____

WIN WIN WIN WIN

- Do you intend to buy a new computer in the next 12 months?
  - Yes ☐
  - No ☐
- If yes, please state which one _____
- How much do you intend to spend on your computer and related products in the next six months?
  - Up to £25 ☐
  - Over £50 ☐
  - Over £100 ☐
  - Over £200 ☐

PART 3 – YOU AND ATARI ST USER

- Where do you obtain your copy of Atari ST User?
  - Newsagent ☐
  - Home delivery from newsagent ☐
  - Subscription ☐
  - Read friend's or relative's copy ☐
- Do you ever have any difficulties in obtaining your copy of Atari ST User?
  - Yes ☐
  - No ☐
- If yes, what are they? _____
- About how long do you spend reading an issue of Atari ST User in the month before the next issue comes out?
  - Up to ½ hour ☐
  - ½ hour up to 1 hour ☐
  - 1 hour up to 1½ hours ☐
  - 1½ hours up to 2 hours ☐
  - 2 hours up to 3 hours ☐
  - 3 hours or more ☐
- How much of Atari ST User do you regularly read?
  - Everything ☐
  - Half or more ☐
  - Roughly half ☐
  - Very little ☐
- How many people, apart from you, read or look at your copy of Atari ST User?
  - None ☐
  - One ☐
  - Two ☐
  - Three ☐
  - Four ☐
  - Five or more ☐
- What do you like most about Atari ST User? _____
- What do you dislike about Atari ST User? _____
- Which has been your favourite issue to date? _____
- Why? _____

- Do you consider Atari ST User to be good value for money
  - Yes ☐
  - No ☐
  - Sometimes ☐
- Do you purchase Atari ST User for:
  - The coverdisk only ☐
  - Mostly for the coverdisk, but also for the magazine ☐
  - For both the coverdisk and the magazine equally ☐
  - Mostly for the magazine, but also for the coverdisk ☐
  - The magazine only ☐
- How much extra would you be willing to pay for a second disk?
  - Nothing ☐
  - 50p ☐
  - 75p ☐
  - £1 ☐
- Please rate the following editorial items from Aspects of the Atari ST in order of interest, one to five – one being of the most interest.
  - Midi and Music ☐
  - Emulation ☐
  - Communications ☐
  - DTP ☐
  - Business ☐
  - I am not interested in any of the above ☐
- Would you like to see more, or less or the following in Atari ST User? Indicate preference with + (for more) or -
  - News ☐
  - Hardware reviews ☐
  - Software reviews ☐
  - Disk coverage ☐
  - Letters ☐
  - Technical advice ☐
  - Public domain ☐
  - Games ☐
  - Buyers' section ☐
  - Special roundups ☐
  - General interest articles ☐
- How far is your choice of software and peripherals influenced by Atari ST User?
  - A great deal ☐
  - A little ☐
  - Not at all ☐
- How much influence did the ST Gamer section have on your decision to buy this copy of Atari ST User?
  - A great deal ☐
  - A moderate amount ☐
  - A small amount ☐
  - None at all ☐
- Would you like us to devote more pages to Gamer?
  - Yes ☐
  - No ☐
- How important to you is games coverage in Atari ST User?
  - Not at all ☐
  - Important ☐
  - Very Important ☐

- Do the games reviews in Gamer influence your decision when buying games?
  - Yes ☐
  - No ☐
- How does the content of Atari ST User compare with the following magazines' games sections?

	Better	Same	Worse	Don't know
ST Action	☐	☐	☐	☐
ST Format	☐	☐	☐	☐
ST Review	☐	☐	☐	☐

- What improvements would you like to see in Gamer? _____
- How would you rate the following types of game?

	Very Interesting	Quite Interesting	Not very Interesting	Boring
Action	☐	☐	☐	☐
Puzzle	☐	☐	☐	☐
Adventure	☐	☐	☐	☐
War/strategy	☐	☐	☐	☐
Role playing	☐	☐	☐	☐
Simulation	☐	☐	☐	☐
Other	☐	☐	☐	☐

PART 4 – YOU AND OTHER MAGAZINES

- Which of the following magazines do you read – please also indicate whether you buy them or read someone else's copy

	Read	Buy	Read someone else's
ST Action	☐	☐	☐
ST Format	☐	☐	☐
ST Review	☐	☐	☐
C&VG	☐	☐	☐
Computer Shopper	☐	☐	☐

- To what extent do the following elements influence your choice of magazine?

	A lot	Slightly	Not at all
Front cover	☐	☐	☐
Coverlines	☐	☐	☐
Cover illustration	☐	☐	☐
Single cover disc	☐	☐	☐
Double cover disc	☐	☐	☐
Free supplement	☐	☐	☐
Other cover gift	☐	☐	☐

- How important is a shopping section in the magazine to your purchasing decision?
  - Not at all ☐
  - Important ☐
  - Very Important ☐
- Have you ever sold or bought something through our Classifieds page?
  - Yes ☐
  - No ☐

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AT Speed C16 ..... £199.95	AD Speed STE £169.95

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	512k	1 Meg	2 Meg	4 Meg
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1040 STE Family Curriculum Pack	–	£325.00	£355.00	£425.00
Mega STE	–	POA	POA	£599.00
Atari TT 68030	–	–	POA	POA

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Philips 15" TV/Monitor as above with Teletext (Model 2331)	£269.00

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ANALOGIC ANALOGIC ANALOGIC

Moving on

Upgrading your RAM

Why upgrade your RAM? There are two reasons. No doubt those of you with 512k are noticing the increasing amount of games that are demanding 1Mb of memory, such as Steel Empire and Elvira 2

Even if a game will run in 512k, there are those which have extended features – digitised soundtrack, better graphics and so on – for those with the extra RAM, and as games become ever more complicated and sophisticated, they are inevitably going to require more from your computer.

Entertainment

As well as the increasing memory requirements in the entertainment side of software, the more serious software applications for the STE are inherently memory intensive.

Desktop publishing is one area notorious for its appetite for your RAM. If you are to take a serious step into the DTP arena, it is doubtful that you will find any product that can operate with less than 1Mb.

Most packages state that the ideal memory configuration is at least 2Mb with 4Mb being the optimum for professional use. The two major DTP products, Calamus SL and PageStream 2, are leaders in colour DTP. Calamus SL is so sophisticated that it requires at least 2Mb.

Budding

So, if you are a keen games player or budding publisher with 512k, you can't afford not to walk down the upgrade path. The Aries upgrade board on offer from *ST User* is progressively upgradable from 512k to 2Mb and then to 4Mb. The board is very small and because it requires soldering as opposed to being a plug-in type, is very reliable.

Full instructions and diagnostic software are supplied with the boards and a phone helpline is available for technical assistance.

The Aries memory upgrades for the STE range of computers consist of SIMM boards which are simply plugged into the expansion slots within the STE.

The upgrades come complete with instructions and diagnostic software.

At some time or other there's a good chance that you've wished that you could use PC-compatible software on your ST – there are many reasons why you should want to.

Maybe you just wanted to use one of the many complex packages available for the machine, or perhaps when office work's been piling high you've wanted to catch up at home – right?

A pretty cost-effective and easy answer to both of these problems is an emulator. Basically they convert the ST into the industry-standard machine, enabling it to run many PC programs. The great beauty, however, is that your favourite ST programs can still be used.

PCs come in various shapes and sizes and so do emulators. During the years as technology has evolved there have been several types of PC.

From the days of XTs, PCs are now powered by 80X86 chips and known as PC–ATs. They started with 80286s, then came 386s and today 486s. Even now 586 PCs are just around the corner.

For the user, the most noticeable change throughout these developments has been speed, with faster computers allowing more powerful software to be used.

But it isn't as simple as saying that, for example, a 386 PC will be faster than a 286 model. The clock speed of the chip must also be considered.

This makes the whole situation confusing and so it has become common practice to measure the PC's speed with a Norton factor rating – the higher the rating the faster the computer. You can choose from several boards, but the ones we are offering at knock-down prices all come from German firm Sack Electronics and are supplied with a copy of the DOS operating system.

With them fitted you'll be able to use great software like spreadsheets Lotus 1-2-3 and Excel, AutoCAD, dBase and desktop publishing king Pagemaker.

It's possible for each to be fitted at home, but if you don't have experience with a soldering iron you could run into difficulty. We recommend novices use our fitting service.

PC Speed

The oldest of the bunch, but still a big seller. PC Speed emulates the first PC–XTs and has graphics displays, including CGA mono and colour, Hercules and Olivetti. With a Norton factor of 4, it is sufficient for basic work such as word-processing.

ATSpeed

Running from an 80286 processor at 8MHz, ATSpeed has the advantage of being able to run more PC software

ATARI ST USER

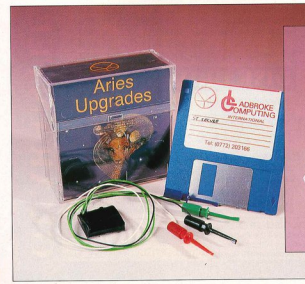
It seems like our special upgrade service was just what you'd all been waiting for. The response was overwhelming, with ST users rushing their machines to us for improvements.

But if you haven't had yours improved yet, don't worry. Atari ST User *has guaranteed the amazing special low prices until the November issue.*

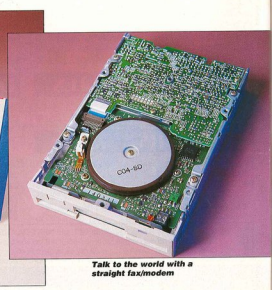
There are plenty of upgrades to choose from – double-sided disk drives, extra memory, accelerators, in fact almost anything you could think of.

So why not better your ST – you won't find a cheaper or more convenient service anywhere.

Quality upgrade service



Banish the out of memory blues with the Aries upgrades



Talk to the world with a straight fax/modem

Turbo TOS

It's a well known fact among ST users that the operating system, particularly the Desktop, has a few problems and niggly omissions.

Many third-party programs attempted to provide a replacement for the Desktop such as NeoDesk and DC Desktop, but these took up a lot of memory.

TOS 2.06 is the hardware solution and gives lots of extra features found in the third-party versions that make using your ST more enjoyable.

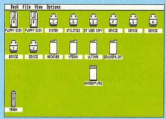
TOS 2.06 was at one time only available on TTs and Mega STEs, but now it is available for all machines in the ST range. Some of the main features of TOS 2.06 include:

- Menu options have a keyboard equivalent for quick selection and can be altered to your own preferences
- Twenty programs can be assigned to the function keys for execution at the press of a key
- Files and folders can be dragged onto the Desktop, similar to the NeoDesk feature
- The Desktop and windows can be spruced up by assigning colours and patterns to them
- The maximum number of windows open has been increased to seven
- There is a Search facility for quickly finding the location of a particular file
- Hard drive owners do not need to individually create a partition icon any more. Simply select Install Devices and icons for each partition appear instantly
- Atari's Xcontrol accessory is completely compatible with 2.06. No need to shut down when changing resolutions any more

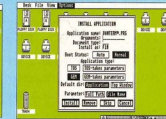
There are, inevitably, some programs that will not be compatible with this new TOS version. This is most notable in the games sector.

The majority of well written, profesional software which adhere to Atari's programming guidelines will have no problems.

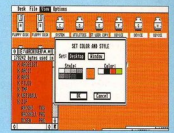
Some PD will also fail to work with TOS 2.06 but if a program has been written with TOS 1.62 in mind, it should be fine running with TOS 2.06.



With TOS 2.06, you can place files and folders directly onto the Desktop similar to the NeoDesk feature



Assign programs to the function keys to allow quick execution at the press of a key



Change the pattern and colours of both the Desktop and the windows

up

than its XT brother.

ATSpeed can be run from GEM as a desk accessory and in addition to the graphics displays available in PC Speed is capable of mono EGA and VGA.

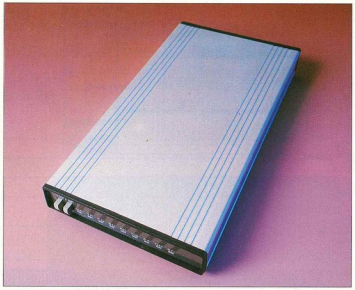
ATSpeed C16

With a Norton rating of 6.7, it solders on to the ST's existing Motorola CPU and is a solder-free fit on Mega STs. The latest board is an upgrade of ATSpeed, and takes PC emulation as far as it can go before it becomes too expensive to remain a realistic alternative to the real thing.

Improvements to be found are increase in chip speed to 16MHz and the option to plug an 80287 maths co-processor on to the board, making mathematical-heavy applications such as computer-aided design programs faster.

ATSpeed C16 is the most suitable of the three for anyone wanting to use the PC equivalent of GEM, Microsoft's Windows. Without Windows, beginners can find PCs a nightmare to use, with long commands needing to be typed at prompts.

It has a Norton rating of 8.2.



Drive your storage problems away with a new floppy

A better drive

Nowadays, STEs are sold with internal 3.5in double sided disk drives with a 720k capacity as standard. However, earlier STs had drives fitted with single sided drives with half the space.

Nearly all cover-mounted disks require a 720k drive to give access to all the programs on them. This is also true of many games software houses who are now putting games on double sided disks.

The reason behind this policy is that magazines and software companies have

➤

All features great and small

There are countless other ways of making your ST faster, friendlier and more reliable. Here are a few suggestions

- Generally the STE is very reliable, but there is one component that is more susceptible to damage than most and that's the power supply.

If your STE's power supply has given up the ghost, don't despair. *ST User* can provide you with a replacement unit which is even more reliable than that supplied by Atari.

- For the security conscious – or downright paranoid – among you, **ST Secure** is a hardware/software combination which will prevent unauthorised access to your machine.

Installation takes only 30 minutes and once installed, It provides a Password protection function.

- When you turn on your STE, the operating system uses the internal disk drive to boot from. With the **A/B Switcher** and little modification, it is possible for those of you with an external disk drive to tell the ST to boot from the external drive instead.

- There's no doubting the importance fax machines have played in both large and small businesses. The ability to send and receive both graphic and textual information over long distances is extremely beneficial.

The **Straight FAX/Modem** allows access to this world of telecommunications through use of a fully-featured 2,400 baud modem incorporating MNP 5 error correction.

The Straight Fax software allows the sending and receiving of faxes, it will also send Ascii text, GEM IMG images, Degas PI3 or PC3 files to a Group 3 fax machine.

Printer drivers for Calamus and PageStream are included, which allow direct file output from either to be sent by Straight fax. It also features multi-page documents up to 255 pages, fine and normal resolution fax modes and 100 number fax phone list.

It can schedule fax transmission at a delayed time, and receive faxes while waiting for scheduled outgoing fax documents.

to cater for the majority and, unfortunately, single sided drive owners are in the minority.

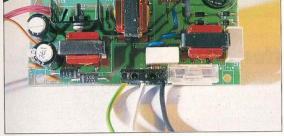
ST User's CoverDisk is also geared towards those with 720k drives and although we offer a single sided disk service to those with single sided drives, it is obviously a drag to have to post off your CoverDisk and have to wait until it returns.

So, why not take advantage of *ST User's* affordable solution, a double sided drive upgrade for you're ST?

Better with a blitter

Mega STs and all STEs have a blitter chip installed as standard, speeding up all operating system graphics routines such as screen redraws, window manipulation, dialogue box drawing and all other GEM graphic processes.

You will notice a "snappier" feel when using the Desktop and other graphical applications, such as scanning packages, will also benefit from this extra hardware.



Has your power supply given up the ghost? Replace it with this more reliable unit

Order now

Now you've read about them, Atari ST User are giving you the chance to snap up these little GEMs – pun blatantly intended – at the lowest prices through our ST User offer extravaganza.

Just tick the items you wish to buy on the order form, including any extras (see services), then do your sums and add up the total cost. Fill in the details of how you wish to pay and don't forget your name and address.

All prices include VAT. All kits include full instructions and a help line is available.

We also offer the following services when ordering:

l Courier pick-up – £11 We can arrange for Red Star to pick up your machine, usually the day after you contact us (see contact number on the order form). A courier is fast and fully insured!

l Fitting/test – £20 We will fit the above and fully test all computers using Atari diagnostic hardware.

l Same day service – £15 Fitting of any requested items will take place the day we receive the machine and be despatched that same day. Subject to stock availability.

l Courier return delivery – £6 Next day courier delivery, fast and fully insured.

l Repair quotations – £15 We will check out a machine and report the exact cost of repair. You can then decide whether to go ahead with the repair or pay the £15 and have the machine returned.

Should you decide to go ahead with the repairs, the £15 is absorbed into the minimum charge which is £35.25.

NOTE: A few STEs may require SIPP memory as opposed to the more usual SIMMs. If this your case with your model, you may require a convertor. This costs £5 per set of two, and we will inform you should you require this addition.

Order form

Please tick the products or services you require, making sure you have filled in and checked the total. Don't forget to tell us how you wish to pay, and ensure that your full name and address is included!

Memory

STFM/Mega ST models

- ❑ 512k £39.99
- ❑ 512k to 2Mb.....£55
- ❑ 2Mb.....£84.99
- ❑ 512k to 4Mb.....£120
- ❑ 4Mb.....£149.99
- ❑ 2Mb to 4Mb £75

STE/Mega STE models

- ❑ 512k £13.99
- ❑ 2Mb £59.99
- ❑ 4Mb.....£114.99

PC emulators

- ❑ PC Speed (STFM/STE) £79
- ❑ ATSpeed (STFM).....£129
- ❑ ATSpeed (STE) £139
- ❑ ATSpeed C16 (STFM) £189
- ❑ ATSpeed C16 (STE).....£199

Other products

- ❑ Double sided internal drive.....£39.99
- ❑ TOS 2.06 ROM upgrade (STE).....£44.99
- ❑ TOS 2.06 ROM upgrade (STFM/STE) with switch.....£65
- ❑ Blitter chip upgrade.....£39.99
- ❑ ST Secure £19.99
- ❑ Replacement power supply £39.99
- ❑ A/B boot switch.....£5
- ❑ Straight fax/modem £224.99

Services:

- ❑ Courier pick-up £11
- ❑ Courier return delivery.....£6
- ❑ Fitting/test charge.....£20
- ❑ Repair quotations*.....£15
- ❑ Same day charge £15

* If you wish to go ahead with repairs, the £15 is absorbed into the minimum £35.25.

Total £ _____

Payment method (tick box): ❑ Access ❑ Visa ❑ Cheque ❑ Postal Order

Credit card number

Expiry date ____/____

Please make all cheques payable to Ladbroke Computing

Name .....

Address .....

.....

Telephone (home) .....

(work).....

Signature.....

Send to: ST User, 33 Ormskirk Road, Preston, Lancashire PR1 2QP. For telephone enquiries dial 0772 203166

❑ Please tick this box if you do not require promotional material from other companies.

COLOUR PRINTING ON A MONO PRINTER!

Ever wished you'd bought a colour printer instead of a mono one? Wouldn't it be nice to print out pictures in colour? Now you can with Atari "FlexiColour Kit". Each Atari FlexiColour kit comes complete with everything you need to print in colour, including superb software. The colour kit is simple to fit and use, will not affect your guarantee and prints AS GOOD AS A COLOUR PRINTER. If your printer is not listed below please phone. Atari FlexiColour kits for Star LC10, LC20, all Star 24 Pin. Panasonic 1080/81, 1124. Epson FX80, FX100, LQ800 etc. Citizen 120D, 120D+, NEC P6, P6+.

COMPLETE KIT £39.95

FLEXIDUMP PLUS
SUPERB FROM YOUR COLOUR DUMPS PRINTER

- ★ Superb Colour/Mono Graphics Dumps.
- ★ Vary Dump size from 1mm to 10 metres in length.
- ★ Select part of screen to be printed.
- ★ Choose from a variety of densities and passes.
- ★ Colour correction for best possible colour.
- ★ Colour catalogue function. Put a picture disk in and Flexidump will print a miniature of each picture and print the titles.
- ★ Also includes a complete production label program.
- ★ Other features include Text insertion, X Reflect, Y Reflect, Mirror, Upturn, Fill, Rbox, Random, Invert, Frame, Block, Circle, Sketch, Upright or sideways Dump, Auto Calculates on 1:1 Aspect Ratio or Deselect this and Stretch the Dump.
- ★ Ideal for use with T-Shirt printing ribbons. FlexiDump Plus (2 Disks) Colour and Mono.

9 and 24 pin drivers included only £39.95; FlexiDump Mono 9 pin printers £19.74. Above prices include VAT and Carriage.

TWIN REFILL KITS

For Deskjet and BJ10e/ex Bubble Jet available in black, magenta, cyan, yellow, green, brown, burgundy, gold, dark red, dark blue £14.98

How to order: Enclose cheques/PO made payable to:
CARE ELECTRONICS or use Access/Visa.

CARE ELECTRONICS

Dept STU, 15 Holland Gardens, Garston, Watford, Herts, WD2 6JN.
Tel: 0923 894064 Fax: 0923 672102

RECYCLE IT

Don't throw away your plastic printer ribbon cases when the ribbon wears out. Just take the top off, take out the old ribbon and reload it with a new one. It's simple. Full instructions supplied.

Reloads for:-
Star LC200 9 Pin 4 Colour (Normal Ink) 5 Reloads ..... only £23.95
Star 24 Pin 4 Colour (Normal Ink) 5 Reloads £28.95
Citizen Swift 4 Colour (Normal Ink) 5 Reloads £29.95
Ink ribbons available in Gold, Silver, Magenta, Orange, Purple, Brown, Green, Blue, Red for a wide range of printers.
Special reink for Panasonic printers and Star LC200 9-pin black 59ml bottle £9.95

T-SHIRT PRINTING RIBBONS
PRINT ON NORMAL PAPER IRON ON T-SHIRT

4 Colour Citizen Swift £29.95
4 Colour Citizen Swift (Reload) £14.95
4 Colour Star LC10 ..... £14.95
4 Colour Star LC200 9 Pin £19.95
4 Colour Star LC200 9 Pin (Reload) £12.95
4 Colour Star LC200 24 Pin £29.95
4 Colour Star 24 Pin (Reload) £14.95
1 Colour Citizen 120D/Swift £9.95
1 Colour Star LC10 ..... £9.95
1 Colour all Star 24 Pin £11.95
1 Colour Epson FX80/LQ400/MX80 ..... £9.95
1 Colour Epson LX80 ..... £9.95
1 Colour Epson FX100 ..... £11.95
1 Colour Panasonic KXP 1080 ..... £11.95
1 Colour Taxan/Canon 1080A £11.95
Heat transfer Pens 5 large red/orange/yellow/green/blue, Large pens have a marker size nib ..... £14.95 a set
Heat transfer Pens 5 small red/orange/yellow/green/blue, Small pens have a fine nib ..... £11.95 a set

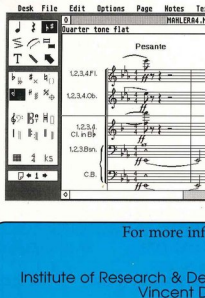
T-SHIRT RIBBONS NOW AVAILABLE IN RED, BLUE, GREEN, BROWN, YELLOW and BLACK AND FOR A WIDE RANGE OF PRINTERS

Phone our order line on 0923 894064 (Answerphone outside normal hours)

Atari ROM Cartridge takes two 27?56 or 27512 EPROMS £11.28
50 Colour Pictures £9.95

ALL PRICES INCLUDE VAT AND CARRIAGE

Take Control Music DTP- v2.2



Music DTP is the ultimate publishing system for music. It is the only professional program of its kind for the Atari ST, and is used by musicians, composers, orchestras, copyists and publishers.

Unlike other packages, Music DTP is based around the page layout, for complete control of the final result in the highest quality. You have complete control over spacing, text fonts, note beaming, line thicknesses and a variety of other parameters. It is powerful to use, but simply laid out, and easy to learn.

The new version of this program incorporates many new features, including real time MIDI input, playback of scores, graphics functions including import and export, automatic proportional spacing, and MIDI file import and export. This allows the transfer of files from sequencer packages for typesetting and printing.

£260+VAT
Demo. available

For more information and example printouts, contact:

Take Control
Institute of Research & Development, University of Birmingham Research Park, Vincent Drive, Birmingham B15 2SQ, England.

Tel. 021 415 4155. Fax. 021 415 4156.

Ladbroke Computing International

Ladbroke Computing International are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which involves testing all Hardware prior to despatch to ensure that goods arrive in working order offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. All prices are correct at copy date 20/08/92 (while stocks last) and are subject to change without prior notice. All prices include VAT but exclude delivery. Add £5 for next working day courier delivery, add £11 for Saturday courier delivery (mainland UK only). Add £3 for postal delivery only on items under £50 (check with staff before ordering). All prices available on Mail Order. Shop prices may differ. Shop/Mail order premises: 33 Ormskirk Road, Preston, Lancs, PR1 2QP. Open Mon-Sat 9.30am-5.00pm. Phones answered from 9.00am. Ladbroke Computing International is a trading name of Ladbroke Computing Ltd. E&OE addresses overseas, deduct 15% VAT and add normal UK carriage.

DataPulse Plus

The Data-Pulse range has recently been re-designed. The Data-Pulse Plus range now offers a more compact case that cuts down on noise even more, all ports are marked, an extensive range of software utilities are now included and our range of special offer utilities has been expanded confirming our commitment to future support. We are continually improving the quality and price/performance ratio of our drives. We have recently incorporated the MAXTOR hard drive mechanisms which offer low power, cached 11ms access time, 127Mb formatted capacity, 150,000 Power on hours mean time between failures and all for a lower price than our old 105Mb drives.

- All drives are formatted/partitioned and tested ready to "plug in and go".
- Extremely low noise.
- Fully Autobooting and Autoparking.
- DMA device selector & On/Off switch on front of case.
- DMA Out port for daisy chaining extra drives/Laser printer.
- Full metal case measuring 300mm x 285mm x 51mm (w/d/h), providing good shielding and monitor stand.
- High quality ICD boards including on board clock and controller software.
- All drives include Vault archiver, Backup software, Virus killer, MCP shell program, Midistudio Master demo.

All drives now include the full version of Midistudio Junior worth £30 absolutely free.

Data-Pulse Plus 127Mb ICD	£	429.99
Data-Pulse Plus 213Mb ICD	£	539.99
Neodesk 3	£	24.99
HD Turbokit	£	4.99
Diamond Back II	£	29.99

Data/Pulse Jr. 20 Mb Floptical

The New Data-Pulse Plus Floptical drive, is a 3.5" SCSI mechanism, ICD host adaptor, high quality Data-Pulse Plus case and psu. The drive is capable of storing over 20Mb of data on a single 3.5" Floptical disk and can also read 720K and 1Mb 3.5" floppy disks. The average access time is just 65ms and the data transfer rate is 200K per second, 6 times faster than floppy disks. The floptical is available either as a stand alone unit or as an upgrade to new and existing Data-Pulse(Plus) users where it would be ideal for fast data backup from hard drive.

20Mb Floptical	£439.99
20Mb Floptical disk	£24.99
Floptical Upgrade to Data-Pulse (Plus) HD	£319.99

New Unlimited Storage capacity.

ST Secure

ST Secure is a hardware protection system for the Atari ST which stops unauthorised use of your computer and any hardware connected to it. ST Secure measures just 1 inch square and can be installed without soldering in about 30 minutes. Once installed ST Secure will allow approximately 45 seconds of computer use before resetting the computer. If during this time the password is entered correctly then ST Secure is disabled until the next power up.

Now Only £19.99

88% ST Format 3/

Silhouette

Silhouette is a bit image and vector graphics drawing program with Auto Tracing. The package offers Auto-Tracing, Beziers, B-Splines, High resolution gray scales. Supports FSM-GDOS, requires 1Mb ST or TT. High resolution Imports: IMG, DEGAS, TINY, MacPaint, GEM, SGF. Exports: IMG, GEM(1,3), SGF, DXF, EPS(Postscript).

Only £60

Phone for details of Scanlite accessory which allows direct scanning into packages such as Silhouette. The accessory supports Golden Image, Migraph, GeniScan and DA ATAscan Hand scanners.

ST Repairs

Our Service department can repair ST's in minimum time at competetive rates. We can arrange for fully insured, courier pickup and return delivery of your machine to ensure it's safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day. We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc.

We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair if you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge. Please note. The minimum charge covers labour, parts are extra.

Quotation	£	15
Min repair charge	£	35.25
Courier Pickup	£	11
Courier return	£	6
Same day service	£	15
STFM(E) PSU	£	45
1Mb Internal drive	£	45
A/B Boot switch	£	4.99
TOS Switch	£	10

Phone for price and availability of ST spares

Data-Net Network

Data-Net is a high speed network solution developed in house at Ladbroke Computing for the ST/STE. Ladbroke's Data-Net hardware consists of an unobtrusive cartridge which plugs into the cartridge port of your ST/STE and connects to other nodes via Coaxial cable and BNC connectors. The Data-Net hardware is fully Lantech compatible and can be used with the Universal Network Software.

The Universal Network software is a Multi tasking network package which does not tie up a server whilst drive or printer access take place. It allows the sharing of Hard drives and Centronics printers anywhere on the Network. Nodes can also Auto boot accessories from a host's hard drive.

Data-Net & Network Software

Data-Net starter	Hardware £ 179.99
The starter pack includes 2 Data-Net nodes.	
Data-Net node	Hardware £ 89.99
Midi-Net hardware Starter	£60
Midi-Net hardware Node	£30
Lan-Net hardware Starter	£80
Lan-Net hardware Node	£40
Universal Network Starter Software	£ 219.99
Universal Network Node software	£ 99.99

Aries Upgrades

The Aries Upgrade board is an in house designed, Multi layer board utilising high density ZIP® RAM chips. The board has been designed to allow progressive upgrading from the base 512K up to 4Mb. The board does require some soldering but once installed is very reliable. The board is then assembled in our workshops by skilled technicians and is fully tested before despatch. It also comes complete with fitting instructions and test software.

Our technicians can fit the board to any ST for a small fitting charge. We can arrange courier pickup and return to ensure fast turn around. A same day fitting service is also available. Please

Aries Upgrades (any STE/(M))

512K Aries board	£	39.99
2Mb Aries board	£	84.99*
4Mb Aries board	£	149.99*
Courier pickup	£	11
Courier return	£	6
Fitting charge	£	15
Same day charge	£	15
16 chip upgrade STFM	£	19.99

Please check the configuration of your machine before ordering. The 16 chip upgrade is not suitable for machines with existing surface mounted RAM. The Aries 2Mb and 4Mb RAM upgrade boards are also compatible with the Mega ST's.

** = Special offer for limited period only*

Straight FAX

- *Send and receive Faxes (Group 3 fax machines)*
- *Software supports from 2400 to 14400 baud send and receive FAX rates.*
- *Fine resolution and normal resolution fax modes supported.*
- *Multiple page FAX documents up to 255 pages.*
- *Automatic cover page generation.*
- *Send Calamus, Pagestream documents as Faxes.*

£224.99

Aries SIMM's STE/Mega STE

512K SIMM's upgrade

Upgrades 520STE to 1Mb (1024K)

Consists of 2 Simple plug in memory upgrade boards, complete with upgrade instructions, memory test disk, comes packaged in 10 capacity 3.5" clear disk box.

Only £13.99

2Mb SIMM's £49.99

as opposite but with 2 1Mb plug in SIMM boards.

4Mb SIMM's £94.99

as opposite but with 4 1Mb plug in SIMM boards

The NEW Brush Mouse

- ☑ 150 Dpi resolution
- ☑ Opto/Mechanical Mechanism
- ☑ 500mm/SEC Tracking speed
- ☑ Switchable between ST/Amiga
- ☑ Direct mouse replacement
- ☑ The natural way to draw. Can be supplied with one of the very best art packages available for the ST today, Deluxe Paint (includes full package with manual)

Golden Image Brush Mouse complete with Deluxe Paint Art package:

£24.99

Golden Image Brush Mouse (No software):

£19.99

ST Format 88% issue 37

Golden Image Hand Scanner £119.99

- ☑ 100, 200, 300, 400 Dpi scanning resolution
- ☑ 105mm scanning head
- ☑ 1 letter mode, 3 photo modes
- ☑ Includes Touch Up: The excellent scanning and editing package for preparing scans for DTP
- ☑ Includes Deluxe Paint: The excellent art package which includes animation facilities.

The Golden Image Hand Scanner for the Atari ST features a 105mm scanning head, variable contrast control, user selectable scanning resolutions of 100, 200, 300 and 400 Dpi, one letter mode for high contrast B/W images and 3 photo modes for various shades of grey. The high quality hardware is backed up by two of the most respected graphics packages around. Migraph's Touch Up for scanning and editing hi-res and grey scale images and Deluxe Paint art package for lower resolution colour.

***Silhouette £60:** is a bit image and vector graphics program which features Auto Tracing (the ability to convert resolution dependant bit images to resolution independant vector images) and full file compatability with the Golden Image Hand scanner.*

***Scanlite £20:** is an accessory which allows a range of hand scanners including the Golden Image hand scanner to scan directly into packages such as Megapaint II and Coalesce.*

***Coalesce £60:** a software package and tray to allow full A4 scanning using the Golden Image and other Hand scanners.*

Jin Mouse

Don't be deceived by the low price of this mouse. Mass production of the Jin mouse has resulted in a high quality Opto/Mechanical replacement mouse for the ST featuring 290 Dpi resolution, 500mm/sec tracking speed, Anti-static silicone rubber coated ball.

Only £9.99

Switchable version ST/ Amiga £10.99

Golden Image Products

From Ladbroke Computing

Opto/Mech Mouse

- ☑ 290 Dpi resolution
- ☑ Microswitched buttons
- ☑ Anti static silicone rubber coated ball.
- ☑ Mouse mat included

The Golden Image Opto/Mechanical Mouse offers Microswitched buttons for greater reliability and crispar more positive resonse

Only £14.99

Golden Image Optical Mouse

- ☑ 250 Dpi resolution
- ☑ 500mm/sec tracking speed
- ☑ Fully Optical Mechanism
- ☑ Mouse mat included
- ☑ Switchable ST/Amiga
- ☑ The fully optical mechanism is very reliable as it does not have any moving parts.

The Official Golden Image Optical Mouse is a high quality, 3 button, replacement mouse. The fully optical mechanism means no moving parts and offers far higher reliability than opto/mechanical mice.

Now Only £24.99

Golden Image External 3.5" drive

- ☑ Double sided double density 3.5" Floppy disk drive.
- ☑ LED track counter: displays current track.
- ☑ External Power supply unit.
- ☑ Daisy chain through port for compatability with STM machines.

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AT SPeed C16	£ 229.99
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Please note: *When comparing prices with other retailers please note that all Mega STE's from Ladbroke Computing contain 1.44Mb floppy drives and the latest UK TOS operating system.*

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Atari SC1435 Stereo Colour Monitor	£ 209.99
Stereo, Colour monitor, includes green screen feature, cable, and tilt/swivel stand.	
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Stereo Colour monitor,includes FIS and 12 months on site warranty.	
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Includes: FST, remote control. Scart input (giving near monitor quality display), 60 tuner presets, sleep timer and Fastext.	
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16K Buffer expandable to 48K
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Atari Portfolio	£ 129

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STFM 8833MKII	£ 14.99
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Mouse/J/S ext	£ 5.99
Monitor switch box	£ 24.99

Scart cables listed only compatible with Philips TV's/Monitors.

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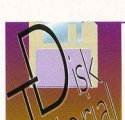


PART 2

of Ian Waugh's guide to this powerful Midi sequencing package

Midistudio Junior

September's *ST User* CoverDisk contained a fully-working version of Ladbroke's Midistudio Junior with a three-page tutorial.

If you missed out, try telephoning Europress Direct on 051-357 2858 to order a back issue. In this and the next two issues we have additional tutorials and power user tips.

This month we'll look at the functions we didn't get around to discussing last time. Don't forget to look at the KEYCOMMS.DOC on last month's disk for a list of short-cut key commands.

Controls

Sync is used to synchronise an external sequencer, drum machine or tape sync unit to Midistudio. It has five settings including Off. The Internal modes make Midistudio the master. The External modes make it the slave.

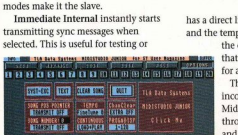
Immediate Internal instantly starts transmitting sync messages when selected. This is useful for testing or practising with external units when you don't want Midistudio to play. **Ready Internal** sends out sync messages during play and record so an external device will follow the program.

Immediate External makes Midistudio respond immediately to any incoming sync signals. **Ready External** puts Midistudio in standby mode after clicking Play or Record. It will then wait for an external sync signal. Press the spacebar to exit.

You've probably discovered the **clock** in the centre of the Stop/Clear button. This counts off elapsed time but it also has a direct link to the Position counter and the tempo. Alter either of these and the clock will show how long that length of music will play for at the selected tempo.

The **Thru** box can force incoming data to take a certain Midi channel when passing through or during recording and is particularly useful when used with Local Off on an instrument.

The **Multi** setting passes on and records data on its original channel or channels. This is useful when recording multi-channel instruments such as a Midi guitar or a split keyboard. To play this back select the Orig setting in the Track's Channel setting.



The Options window and the Controls window. Note the link between the tempo, the Position indicator and the Clock. The Thru box is set to Multi which allows data to be recorded on several Midi channels and the Song has a "nonsense" name which shows some of the characters the program will use in a filename

Desk

The **Orig** setting in Channel on the Desk window plays back the data on the Midi channel(s) on which it was recorded. Select this to hear music recorded on more than one channel which was recorded using the Thru Multi setting, or by merging Phrases.

File

You can see how much **free space** is on a disk by clicking on the Disk Space area. It's a manual function, not automatic, so hard disk users don't have to wait while the free space is calculated every time the disk is accessed.

Delete lets you delete any file.

When you save a file, the program will offer a name similar to the one used in the Song window. Although it removes spaces, it will allow you to save a file with other characters not normally allowed by the ST.

Arrange

You can mute and solo a track by clicking on the **track name** on the left as well as on the track numbers at the top of the screen.

Options

Syst-Exc is a System Exclusive file transmitter. Sys Ex data is exclusive to a particular manufacturer and instrument and is primarily used to store voice data. It's useful to be able to save the sounds on the same disk as the music.

The Syst-Exc function will load any file and transmit it to a connected Midi instrument. Of course, if it's not genuine Sys Ex data, such as a program or text file, it could upset the receiving instrument although it's more likely simply to have no effect at all.

To use this function you must already have a saved Sys Ex file to transmit. These can usually be created with a dedicated voice editor, although there are PD utilities available such as Steinberg's Satellite and the Dump Utility on the Melville Marriott (0993 79500) Midi Tools Disk (£2.50) or Midistudio Master's Transceiver module.

The **Song Position Pointer** is for use with external sequencers and drum machines. Normally, these start playback from the beginning of their sequence.

The transmission of a Song Position Pointer tells the device to start playback from Midistudio's current bar and beat. This is very useful when testing sequences as it means you don't have to start playback from the beginning each time.

Note, however, that not all devices respond to Song Position Pointers. Their Midi Implementation Chart (MIC) will tell if they do.

Some devices can store more than one song in memory. The **Song Number** lets you select which song the device will play. It is used in conjunction with the Sync function.

Fine tuning

Tempo Fine Tune, as its name suggests, lets you fine tune the tempo. It has three settings – 0, + and -.

For continuous Load and Play, **Play All** will read the disk and all the songs it finds in the top level in sequence. The spacebar stops playback and Return skips to the next song.

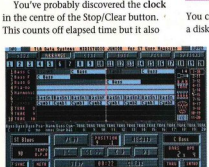
Alert? does the same but presents an alert box between songs which is useful in live situations. Press **Return** quickly to start playback.

Channel Clear Extra is essential for stopping hanging notes on some keyboards which do not respond to the All Notes Off code.

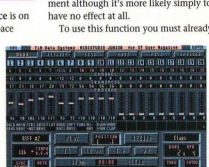
However, this large transmission of data has been known to cause some expanders to clear their memory due to the inadequate size of the expander's input buffer. That's why this is an optional setting. If your notes switch off normally, don't use it.

The edit window

This is the most complex part of Midistudio, and we'll look at it in detail next month.



You can mute and solo tracks in the Arrange window by clicking on the track name



The Sync box is set to Ready Internal which means Midistudio will control a connected drum machine or sequencer. Track six's Midi channel is set to Orig which means the data in it will play back on the original channel or channels it was recorded on

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Characters between asterixes show special requirements: *NM* = Mono Res, *C* = Colour Res, *D* = Double Sided Disk, *X* 1 Meg Ram; *S* = Not STE/Rainbow TOS

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0033 Desk Acc formatter, calendar, Disk Manager, calculator
0088 68000 Assembler, Address Manager List, Autofold Utility
0089 PICSMITOR 7 changes pics graphics etc, Mono/colour emulators. SWITCHER, 2 progs in memory FSEL 5.5
0110 STE BOOT UP, boot medium res
0014 ARC file compiler, BI CLOCK set time/date. MONDEM/Mator v5.0.
0016 IBM compatible disk formatter, ARC SHELL v1.91, MEGA formatter
0019 DIRFLOPPY, disk editor, SCODE make ASCII for data transfer
0023 Packed with various progs for printing all kinds of labels *M*
0024 CHK 2.3, All you'd need to know about a disk. IBM MODIFIER, alter DS Atari disks for use on IBMs.
0027 ANTIDOTE, detect & kill most bootsector viruses.
0028 DISKMECH disk analyser/archiver/editor, editformat sectors etc. full docs. CPANEL
0030 AMC GENS
0032 MOUSE TRICKS, extensive control over mouse, movement etc.
0033 MV-2 "is a multi-tasking environment, up to 7 concurrent tasks. *D*
0034 DOUBLE CLICK format v3. 03 9/10 sectors, 80/82 tracks.
0035 DSC edit clone. Disk engineer v3.01 do alsorts to a disk via SER.
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0057 GEMDOS USER GUIDE, full of info about GEM-DOS
0058 ATARI TOS 1.4 bug fixes (STMs with Rainbow TOS)
0059 XCONTROL ATARI'S latest TT control panel accessory for all STs.
0063 MEMFILE 2.0, Memory and disk editor with powerful features.
0065 STDCAT v4.0, disk catalogue.
0067 ARCSHELL v3.0, Arc V6.0
0068 HITCHHIKERS PD shareware disk 2.2.0
0069 ST Zone shell. Disk mag development tool.
0070 SUPERB Intro creator, sprite, pics, text & music
0073 SUPERBOOT V7.0
0075 ST TOOLS, many features
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0080 JAMES, the desktop butler.

GRAPHIC, FONT AND ART/DRAWING DISKS

A005 PALART, excellent art program with full doc files. *C*
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A012 DOODLE, mono & colour versions. Also some Mandelbroom pics.
A013 ST GRAPH, Comprehensive graph prog, handles bar, horizontal/stacked bar, line & dot charts.
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A016 GAMMA, great art package *M*
A020 PALETTE MASTER, art package, up to 512 colours. *C*
A024 PICCOLINE, drawing program from Germany. Mono/Col.
A025 FONTKIT 3.31 *D*
A027 ANI-ST, ex-commercial package, quality animation system
A029 MASTERPAINT drawing package, excellent, Mono & Col.
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A043 ST CAD v2.1, a med/high res CAD package. Full docs. CALC-PLOT, scientific calculator
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A044 JL CAD, Shareware. *XD*
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C003 Sports figures, Jolly 4th logos.
C010 Occasional Clips, Characters etc.
C011 Loads more fruit, vegetables.
C012 Herbs & Kitchen parts.
C013 Humorous clips, Letters A-Z.
C015 Babies, boys and girls
C016 Girls, Scrolls and Occasional clips
C017 Arbitron, Baby boy & girl
C018 Varied Humorous Clips.

WORDPROCESSING & DESKTOP PUBLISHING

W001-006 *XX*, E Disk Pack, document processor.
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W039 Easy Text v1.2 fully working DTP demo (w010 for OS users)
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W105 HYPERTEXT, Shareware prog. Produce professional docs. *MD*
W017 ST Writer Elite VK.1 top quality wordprocessor
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P008-P10C LANGUAGE DISKS 1, 2 & 3 of Elementary C, a set of 3 disks.
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P013 CPM UTILITIES for P012.
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P019 Mupd Smith's ST 68000 pop-up ref. guide.
P020 SUZOBON C, Great C compiler *D*
P022 SPRITE EDITOR. Create and save sprites.
P025 C TUTORIAL, disk manual
P026 MUSIC a simple GEM resource construction utility.
P027 MOOPAS, Pascal Compiler. *D*
P029 GFA EXPERT, all you need to know about GFA v3 basic.

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G001 Warzone, Dalek, etc.
G014 SUPERBREAKOUT, 40+ brick types with special features. *M*
G016 BAPOLDER, arkanoid clone. *M*
G017 EMPIRE BUILDER property development. LOST TREASURE & JUMPSTER
G018 RUSH, move bricks to create a way out for the ball.
G020 YAHTZEE, popular game.
G021 UPSTARTGOOSE cherries. *S*
G022 COMPANION shoot 'em up in outer space
G025 ENGLAND Team Manager.
G027 DIE ALIEN BLOB, a great shoot 'em up, excellent graphics.
G028 TREASURE SEARCH, find the hidden treasure. *SD*
G033 ADVENTURE WRITING SYSTEM
G037 TUNNEL VISION, maze game
G038 BERMUDA RACE 2
G039 INVASION, adventure
G041 Hacki is a D&D adv.
G045 AYATOLLA, terrorists attack. *S*
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G056 SLIDE, 3 levs, puzzle. *S*
G060 SOLO ST graphics. Macpan, Galaxy & Spreagmeister. *M*
G064 ATOMS mentally challenging, KILLERCRESS fast & furious, ANIMOTRACK'S a superb race & blast 'em.
G068 SKIOPAN, motor racing. *S*
G069 STOCKMARKET, Wheel & Deal, Galactic Warriors, shoot 'em up.
G070 FLOYD THE DROYD, ultra fast shoot 'em-up. Sampled sound.
G085 AIR WARRIOR, Flight sim
G096 COMPUTER PINBALL, DEVASTATOR, 3D strategy game.
G098 TALESPIN, Word and Logic.
G099 FUZZBALL, platform game
G099 SHOPWRECK, educational maths with graphics. *S*
G104 ZOO, a great blasting game. SUPER SENSORI.
G105 A DUDLEY DILEMMA, adv.
G107 WIZZARD'S LAIR adv.
G108 UNDER BERWOOD Massive graphic adventure
G109 NAVAL BATTLE, Battleships
G110 CENTAUR, shoot 'em up.
G106 VIRUS, great graphics & sound. *S*
G111 PLYDEN, bombing raid
G109 GLOB, you collect cherry cakes while avoiding pursuers.
G111 TRACKEM, you drive your tracker through enemy territory.
G112 OVERLANDER, shoot 'em up.
G113 CHANCE, battle the elements.
G114 ESCAPE FROM THE TOMB OF RA.
G115 MUTANT, reactor out of control, workers mutate.
G116 KEY TO ATLANTIS, underwater scrolling shoot 'em up.
G118 MARS MAZE, platform game.
G119 STEEL, steel everything.
G122 HEXGHOUL, Frogger clone. *S*
G123 THE NAME GAME, wordfun.
G125 TARK, great text adventure
G129 BATTLE FOR THE THRONE.
G130 LLAMATRON, a great Shareware game by Geoff Minter. *D*
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G132 DERRICK THE DROID platformer, shoot 'em up & puzzle game in one.
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G137 MORIA Fantasy RPG. *D*
G138 SHOOT 'EM UP BUILDER KIT. *D*
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G144 HACKMAN, 50 levels, Pacman clone. *S*
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G152 TILE GAME, rearrange the letters. *S*
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G164 SPACE INVADERS, a classic
G165 BLOCKADE, Dir clone
G167 TENNIS great graphics/gameplay.
G169 ROXFALL, boulderdash type.
G172 ENTOMBED, platform 5 levels.
G175 ARMOURLITE, horizontal scrolling shoot 'em-up.
G177 GRAV, rotate & thrust.
G178 MAZE, split screen, 2 players + editor, great.
G181 GLORE, platform/puzzle, many enemies, shareware game.
G182 PDROLL, excellent Arkanoid clone, colour & levels. *SD*
G183 INFILTRATION, defeat the aliens, shareware.

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S001 DATABASE 1, GEM driven database.
S002 ST SHEET, quality spreadsheet *C*
S005 INSTAT v2.01, superb/useful graphing & stat analysis. *DX*
S007 OPUS v2.2, GEM based spreadsheet & charting program. *DX*
S009 WG DATA, high quality DTB. Full docs.
S011 DOUBLE SENTRY, fully working accounts package (no VAT)
S012 PERSONNEL ST, Names & addresses DTB.
S013 INVENTORY PRO V2.0, stock control system.
S014 TOOL, time structured DTB.
S015 ZAPCARD easy to use card type DTB.
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S017 DATAPLOT, sophisticated data plotting package.
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C0006 VANTERM 3.71 & 3.8 great communications package.
C0009 HAGTERM ELITE v3.3 powerful shareware comms package

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M001 COMPOSER, music creation.
M008 KEYBOARD program, various songs & samples.
M012 SINGING CALIFORNIAN RAISONS. *X*
M013 MUSIC WRITER, create music.
M016 CASIO CZ SOUNDS & EDITOR.
M020 JIBOS Music Const. Kit
M021 PERCUSSIMANIA, 4 disks, 16 instrument, synthesised sequencer.
M022 SOUNDTRACKER PLAYER & MODULES. D_OREAD 1, D_DREAD 2, PAT_MIX, RVB_DEMO, SPREAD.
M025 HIFF, Music design package. *DXM*
M026 CHORDEX tool for learning major/minor chord shapes.
M029 MIDI v2.0 monitor, MidiSign rec. Shareware EX800 v2.0.
M031 DBRK4802, daybreak step time sequencer v.3.
M035 ACCOMPANIST 2.4, 16 voice shareware sequencer.
M040 EDSYNTH 1.2 music synthesiser.

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E005 REBUS WRITER, design & print rebuses. Samples included.
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E011 TYPING TUTOR (2) with full documentation.
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E014 KIDGRAPH, KIDMUSIC, KIDPIANO, KIDPOTATO *C*
E015 KIDSPELLER, KIDSPELL
E016 DOT 2 DOT, includes creator.
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ISSUE THIRTEEN ▪ OCTOBER 1992

GAMER

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LOTUS III -

THE FINAL CHALLENGE

The road to threedom...

Plus...

REVIEWS... HOOK • CRAZY CARS III • FASCINATION
AMBERSTAR • THE CHEAP SEATS • AND MORE!

ALSO... CHEAT MODE SPECIAL • JAMES POND IS BACK! AQUATIC GAMES PREVIEWED •

ONword

This is rumour control... these are the facts

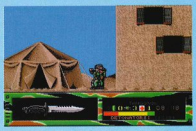
Bouncy Gristle

Teenage Mutant Ninja Turtles, eh? Bit crap aren't they? Out of date basically. So there's a gap in the market for some more hyper-violent amphibians by my reckoning. And, as if by magic, here come the Battle Toads to plug that gaping hole in our lives.

Three young games-testers are sucked via the Battle Toads arcade machine into the strangely milky dimension of Gamescape. Here they must run from left to right hitting people. Hey! Sounds like a cue for a beat-'em-up to me!

And, hey! It is! It's based on a pretty spanky Nintendo game, and it'll be lurching out of ponds up and down the country in September, courtesy of those nutmeg flavoured funsters Mindscape. Huzzah for the Battle Toads!

Shotguns and Chaffinches



Who remembers Electronic Zoo? They popped their clogs earlier this year, leaving many a tearful eye and many a promising game languishing in the dark.

Well, there's a new kid on the block who've snaffled some of those abandoned projects, and added a few of their own. It's International Computer Entertainment, or ICE for short. And they're not taking any crap. No sirree!

So we've got Fire Force, a Green Beret-style game of mass genocide and rhythm and blues guitarists. It's really rather ace, actually. You can use big machine guns, knives, grenades and rocket launchers and just, well, kill absolutely everything. It's great fun.

There's also Gnome Alone, which you may actually remember. It used to be called Magic Garden, but the Zoo went bust just after its release and so it got a bit lost. ICE decided the original was a bit crappy, so they've rejigged it a bit and added more gameplay. Arthur Fowler-type gardening chortles will surely ensue.

He's back

Yes. He's got nothing better to do with his life so he's come back here. It's Dave "Ramrod" Cusick, and after the flood of letters from excited housewives we've let him have another pop at reviewing.

So read his thoughts on Lure of the Temptress on, er, one of the pages but we haven't got a clue which one. Probably somewhere near page 16. And just to keep the ladeeez happy, here's another picture of him to coo over. A "prime" specimen, we kid you not.

Pssst! Don't mention Blackburn Rovers...

Thalamus, the only software company whose name is almost an anagram of "musty llama", have got some pert and well oiled titles in that old proverbial pipeline.

Beastmaster is an arcade adventure about a beastmaster, involving trading, communicating and all other sorts of interactive palaver, all in a crisp beat-'em-up shell.

It also boasts a 3D "into the screen" play area, and a sort of "moon and sun" rising effect. Plus, if you can find a clever camouflage cloak, you turn invisible except for a sort of hazy outline just like in Predator! Waheeeeey!

Arsenal is a football game about Arsenal, the only football team to get thoroughly trounced by soccer giants Blackburn Rovers. It's an arcadey affair, but with a management side salad. Loads of stats, and some quite tasty graphics if these are anything to go by.

OSCILLATING HAZELNUT

ELISHA PENGUIN CHARTS

This month		Last month			
1	▶	1	Sensible Soccer	Renegade	£25.99
2	▶	2	Formula One Grand Prix (GAMER)	Microprose	£34.99
3	▲	NE	Magic Land Dizzy	Codemasters	£7.99
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20	▲	NE	Striker	Rage	£25.99

Mindscape show us their tips

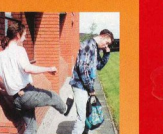
Are you the sad sort of individual who's hopelessly stuck in Mindscape's Legend RPG? Are you, in short, a bit like Richard Briers, star of BBC's The Good Life (who, if he had an ST, would surely be a bit stuck)? Well then, help is at hand!

F ollowing the success of their Knightmare hint book, Mindscape have put together a similar tome for Legend. It contains maps, spells, hints, tips and songs. Very nice for a sing-a-long.

It costs a highly reasonable £6.99. Give 'em a bell on 0444 246333 to find out more.

Goodbyeee, Goodbyeee

Ha ha ha! Yes, after many months of tunnelling under the desk with an old teaspoon, I've managed to dig a tunnel and I'm off! Editor no more, I'm legging it over no mans' land back to civilisation.



Well, yes, I'm leaving. After more than a year working in the ST User dungeons, the stench has become too much and I'm off.

Chances are I'll still be popping up with the odd review, but I will never again spend hours on the phone trying to blag software, never again suffer free lunches or gargantuan ale-quaffing sessions at computer shows. Oh well. **Dan**

Socks and thistles

Hot news on the Gremlin front, kids. Lotus Turbo Challenge 3 will be on the streets before you can say "By jiminy that was quick". We'll be reviewing that next issue – it was going to be this issue but time was against us and you'll have to make do with a big preview instead.

So next month it is. Stick around for that. Other Gremlin games to look out for include Nigel Mansell's World Championship, Daemonsgate 1, and Hero Quest 2.

The Nigel Mansell game looks to be a sort of arcadey version of Formula 1 Grand Prix and it'll include all sorts of options to tune up your car.

Part strategy simulation and part arcade driving game, really. And Gremlin should know. They're very good at this sort of thing. Out in November, with the price to be decided.

Daemonsgate is part one of an ongoing RPG saga, with over 50,000 screens and 100 intelligent game characters. You can control eight adventurers, who go about their own business when you're not telling them what to do, and another 32 characters can be recruited and abandoned at one stage or another. It sounds a bit big, does it not? Out in January at about £34.99.

Talking of RPGs, Hero Quest 2 – The Legacy of Sorasil is pencilled in for a November release. Another of those evil forces has taken over the land and adventuring we must go.

Unlike its predecessor, this one will feature different terrains, new character classes and computer characters designed to help or hinder you. Gremlin describe it as a "step upwards and sideways". Sort of a diagonal sequel then.

nestle lucky charms - richard "they're magically delicious" williams
under the stairs - daniel "burn in hell" whitehead
kajagoogoo - ben "limahl" styles
peking duck - phil "masticate" morse
maternal instinct - dave "rusks" cusick
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next month: a magic space hopper bellows in spanish at an innocent golfer for comic effect

GAMER

INNER VISION

Wrap a damson in foil, smile at a tram, and welcome...

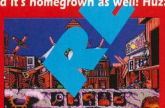
HOOK 8
Any bacon in here? No! It's an arcade adventure! And it's not much cop really. Tee hee hee

FASCINATION 12
It's French. It's an adventure. It's got nudey bits. It's crap. Surprised? We weren't

AMBERSTAR 13
And as if by magic, the shopkeeper appeared..."Put that wetsuit back this instant" he bellowed at a startled Mr Benn

CRAZY CARS III 14
Stirrups. Now there's a good word. Stirrups. Yes. Just rolls off the tongue. Try using it in conversation today. Today is Stirrups Day

LURE OF THE TEMPTRESS 16
Missing Monkey Island 2? Honking at Hook? Here's the remedy! And it's homegrown as well! Huzzah, huzzah and thrice huzzah!



ONWORD 2
The smell of old plastic permeated the old church...

OSCILLATING HAZELNUT 2
Talking Shop sounded a bit dull. So we've changed it

THE SOURCE 4
Aqualungs, waggling sticks and tartare sauce

THE SOURCE (AGAIN) 6
Lotus III. It's here! It's angry! And it's learned the Chaos Theory!

THE CHEAP SEATS 10
More merciless mauling of mediocre budgies (it was M on Sesame Street today)

CHEAT MODE 18
A bumper three page special, filled with YOUR hints and tips and what lovely tips they are

REVIEWS

the Source

THE AQUATIC GAMES

The world's saltiest secret agent is back, and this time he's waggling his stick! Daniel Whitehead puts on some concrete boots and jumps overboard to find out just how many fishy puns one game can possibly use...

Rumours are rife in the underwater community. Since the evil Dr Maybe was thwarted by RoboCod [aka James Pond] things have been quiet, but rumblings are occurring under the sea and it's not the after effects of last night's prawn tikka kebab.

FISH, the top secret fish secret service, are organising a series of sporting events. Is it a cover for some new training exercises? Will their top agent be involved? Will Dr Maybe make a comeback? We'll just have to hold our breath I guess. Glub glub glub.

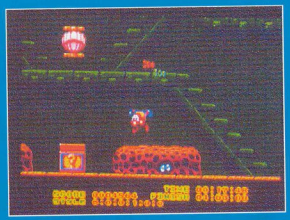
Aah. James Pond, what a guy. We all love him to death here. Not since the hey day of the Wally Week games on the Speccy has there been such a versatile computer character.

He wowed you in James Pond with his fishy spy antics, he gobsmacked you in RoboCod with his console-tastic platform escapades, and now be prepared to have your flanges oscillated by his entry into the sports game market.

The Aquatic Games features James Pond and the Aquabats in a "crap fish-related pun-fest" of previously unseen proportions. Millennium, for it is they, describe it as a "side splitting, button bashing, fin wriggling action", but then, they would, wouldn't they? If they described it as "a sports game with James Pond in it", it just wouldn't be the same.

What's in it? Eight events in all, plus some mystery bonus bits, including the 100 Metres Splash, Hop skip and jump, and the Leapfrog.

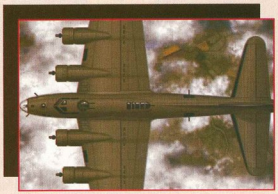
There are going to be four brand new James Pond characters for you to meet and go to the pub with, or if you live in the real world, you can compete against them in this computer game. I recommend the latter if you don't want people to call you "that nutter down the road".

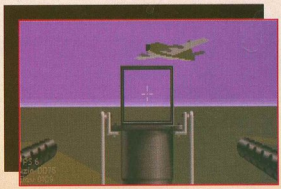


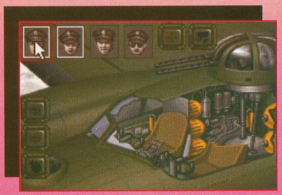
Like all good sports games, there's a multi-player option for up to four chums. There's also a Practice or Championship option, with three skill levels. All the usual sporty game essentials really. It all sounds like good fishy fun to us, and a more than welcome break from the current Barcelona-obsessed sport games.

Plus, of course, if it's got James Pond in it then it's already got a head start over the competition in my book.

James Pond and the Aquabats will be limbering up in October for the game that adds a completely new meaning to water sports, and all for the princely sum of £25.99. Jacques Cousteau wouldn't believe his eyes!







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the Source

Gremlin have got a sequel to some game or other. Lotus something. Never heard of it meself. I can't quite remember. Can't be important, eh?

Do you remember a game called Lotus Turbo Challenge 2? Apparently it's supposed to be quite well known, but I'm flummoxed. A driving game, or so I'm led to believe.

And just who are these Gremlin people? Not exactly one of the biggest software houses in the country, surely? They're probably French, actually. Blimey. It's dark in here.

But wait, it's all coming back to me now. The accident must've wiped my memory. Yes, the walnut lorry, the driver not seeing me, the doors opening, and then... nothing but walnuts.

So here I lie, buried beneath a year's supply of walnuts with only a Gremlin press-pack to keep me occupied while the firemen eat their way through to me.

Using my handy pocket torch (which I just happen to have with me) we discover that what we have here is a huge wad of info on Lotus III The Final Challenge. Yowsers! Lotus III, eh? Better take a closer look at this.

Anyone never seen or heard of Lotus 2? It got everyone in the computer industry fair creaming at the gills with the frothiness of it all.

"It's the best driving game ever, ever, ever!" said someone. It was me actually. Just now. But it certainly set the standard for every single drivey game since. And none have come close, although Crazy Cars III this ish does a pretty good job.

So, while the pretenders are still backing out of the garage and trying to de-mist the windscreen, Gremlin (who aren't French after all) have updated, upmarted and upended the Lotus series. And it's going to streak away from the pack like a tipsy whippet. At least, that's the theory.

The best way to describe Lotus III is a mix of the previous two games. In Lotus 1 you had to be in tenth position or above at the end of the race to qualify, and in Lotus 2 you had to complete each course in a specified time. Lotus III lets you do both.

If you prefer racing against the clock (arcade style), or other cars (championship style), then Lotus III will let you pick the style that suits you best.

There are also some brand new course designs. Remember the hair-raising courses in Lotus 2? The snow, fog, swamp, storm, desert, motorway and night driving courses? Thought they were scary? Well, here come an extra five on top of those.

The new courses are as follows. Wind (insert obvious joke here), where powerful gusts blow you across the road and objects are flung in front of you by the gales. Roadworks, set on a motorway covered in cones, potholes and crash barriers.

There's Mud Rally, where the course is bogged down in slippery mud and mad Swedish drivers smash their cars up (apparently); Mountain, with hairpin bends and Michael Caine hanging over cliffs in old buses saying "Now 'old on, I've got an idea..."; and finally we've got the Future level which promises "weird and wonderful" effects.

Another great feature, which

Driven to distraction

Five driving games that time (almost) forgot

1. **Turbo Esprit:** A sort of 3D driving shoot-'em-up on the 8-bits that had you chasing drug dealers around town and shooting them. Best remembered for the fact that you could wait by zebra crossings and speed across them killing innocent civilians. A rather excellent game, all things considered.

2. **Wheelie:** Another 8-bit effort, involving a motorbike. Not really a driving game, but the idea of doing stunts in underground tunnels on a spluttering moped still appeals after all this time. Best remembered for the bits where you had to jump over bouncing giant hedgehogs.

3. **Out Run:** The first big driving game arcade licence, and almost criminally successful. Best remembered for being utter crap.

4. **Chase HQ:** Pretty recent actually, but worth noting that the best home computer version actually came out on the Spectrum. Best remembered for making me wish I hadn't sold my Speccy.

5. **Wheel Spin:** A "death-defying road race game" which lurks mysteriously on an old Amstrad CPC tape currently rotting slowly in our cupboard. Unfortunately, we haven't got an Amstrad CPC. Best remembered for, er, well, best forgotten actually.

cropped up in Core Design's Jaguar XJ220 on the Amiga, is a track editor. However, rather than requiring you to select each track section, each bit of scenery, select how many cars and so on, Lotus III's track editor is a wee bit different.

It's called RECS (Racing Environment Construction System) and it lets you create a completely new course in about, ooh, five seconds. To generate a course, you just type in an eleven digit code. Nine letters and two numbers. Just like Countdown.

The letters determine the physical aspects of the course (hills, curves etc) and the numbers determine how difficult it'll be.

If you want to design a specific course then you can set each digit just right to create however many hills and bends you want.

Or, and this is the ace bit, you can create up to five trillion random courses just by typing absolute gibberish. Or your name. Or the word "sphincter". The possibilities are, literally, endless. You don't even have to waste disk space by saving each new course. Just type in the code again. Simple and a ruddy good idea.

The game will also boast some pretty tricky computer opponents. Gremlin say that calling any computer-controlled enemy "intelligent" is a bit touchy, so they prefer to say that the other cars in Lotus III have been "programmed to drive well".

So they'll drive around obstacles, around you, and even swerve in front of you to make you crash. Programmed to kill more like!

And for all you sociable types, there's still going to be the modem link option. So you can link up to your pal's ST or even, if you feel like helping those less fortunate than yourself, a mate's Amiga.

Even the random courses can be modem linked, by generating the course and then selecting "link". Easy as pie. Whatever that's supposed to mean.

Sounds fun, that's for sure. Lotus III The Final Challenge comes out on the Atari ST in September, although nobody's quite sure how much it'll cost just yet.

Wait, the walnuts are shifting... It's daylight! I can see daylight! My ordeal is over! But what's that gherkin lorry doing? Aaaaaargh!

Dan

Chain saws, zombies, kung fu and nuclear war all in...

Hook

OCEAN ▪ £25.99 ▪ 512k ▪
Mouse ▪ Out now

Oh dear Robin Williams, why did you do it? One of the world's most naturally funny actors, and he spoils it by starring in a sugar-coated Spielberg botch version of a kiddies fairy tale.

Mork and Mindy was the business, Good Morning Vietnam was a classic, Dead Poets Society was a weep-inducer and a half, and The Fisher King was completely bonkers, but still ace.

It seemed like the guy could do no wrong. Not only was he a funny stand-up comedian, but he could do "proper" acting as well. Yes!

And then came Hook. The traditional Hollywood grave-robbing nonsense – digging up other people's ideas and tarting them up for a multiplex audience. They did a similar thing with The Addams Family, taking an old idea and making it so much "better" by setting it in the present.

The plot of Hook is a prime example of this usual "updated" story-line messing about, with a side order of moralising to help it all stick in the throat.

Not content with a story that's stood the test of time, the Spielster decides to have Peter Pan as a grown up in modern day America. He's so obsessed with his work that he neglects his kids, and Captain Hook kidnaps them.

Needless to say he doesn't quite believe it when a fairy turns up and tells him that he's Peter Pan, the boy who never grew up. Well, except he did.

Peter Banning – as he's now known – must travel to Neverland with Tinkerbell to rediscover his magic powers. But first of all he must get a pirate costume so that people in Neverland will take him seriously, and then he can find Captain Hook, beat him in battle and save America for decent Republican family-loving types everywhere.

And along the way he realises that he loves his kids, dreams can come true and the good guys always win. All you need is love, and hey, doesn't Mom's apple pie taste just dandy?

The audience go home with a glow in their hearts and popcorn in their tummies, and Steven Spielberg goes home with a big fat pay cheque. Sicky, eh?

Well, Ocean have snaffled the licence, as they always seem to do, and to be fair they haven't done a bad job. At least they've avoided the RoboCop

Nanu nanu! Ah, we remember you when you were funny, Robin me old mate!

It's still on at the Odeon I think...

re-hash formula. Instead this is a blatant Monkey Island rip-off, right down to the "becoming a pirate" sub-plot and the "trading insults" sword fights.

However, Monkey Island 2 won't be coming out on the ST, as US Gold in their infinite wisdom have decided that nobody owns STs any more, so this could be what you're looking for.

And it would be, if it weren't for one important point. Lure of the Temptress. 'Cos it's better, basically. But, hey, let's leave that for the time being and see what Hook has to offer for your cash.

It looks great – this is the first thing you notice. Really colourful and clear graphics, with a definite cartoon feel. It plays nicely thanks to a very intuitive icon system – in fact you probably won't need the instruction book at all. There are some suitable tunes warbling around in the background as well.

It looks and feels like a "quality" game, in the same way that The Addams Family had that polished sort of feel. But it's not all roses.

Hook's major drawback is that it's just not very involving. I've finished it, he said in a boastful sort of way. But, er, I used a solution. And I can tell you right now, there's not really much to the game.

By the end you certainly don't get the feeling that you've taken part in any great adventure like you did with Monkey Island.

Sure, the puzzles are sometimes fairly tricky, but by talking to all the characters you can easily suss it out without too many headaches. And that's something else that I found lacking. Characters. Captain Hook is one of the strongest and most flexible figures in the story but he rarely crops up here. A bit of a waste really, seeing as the game's named after him.

None of the other people you talk to have any individual traits either, but rather reply with standard answers like "get me this object and you can have that object". The only memorable person in the whole game is a mad dentist called Dr Chop. And he's not that important, really.

Apart from that, Hook does pretty well for itself. In fact, it's probably better at a lot of things than Lure of the Temptress. It's cheaper for a start, plus its restricted size and cutesy appearance make it a good game for the youngsters out there.

That may be a bit patronising of course – there may be kids who want a huge and complex challenge. But I'm talking about the little 'uns, who want to play on Daddy's ST. Or Mummy's of course.

So, Hook is a bit too small for its own good and people with more than a bit of experience may find themselves feeling a bit cheated by the lack of scope.

On the other hand, kids will enjoy solving the puzzles (with help from a responsible adult), and the moist, fluffiness of it all will cause them to squeal with delight.

Or maybe they'll moan and want Ninja Tortoises flipping shurikens about the place like nobody's business. Kids, eh?

At the end of the day, Hook the game perfectly captures the feel of Hook the film – very nice to look at but lacking the guts to make it stick in your mind.

If you buy it then you'll probably get your money's worth, but that doesn't make it the best game of its type. Above average, but still below par. If you see what I mean.

Daniel

Peter seeks solace from a down-on-his-luck Cap'n Bird's Eye

I'm-a here for Billy the Kid... er, Captain Hook

Doc, it's me bowels, they're playin' up again...

Remember the croc from the original story? This is his new job

He's a swinging guy! (thank you, thank you, you're a lovely audience)

Peter was caught stealing the giant flute again...

VISION

Nice cartoon graphics, but not much variety.

AUDIO

Hook-esque tunes, with a smattering of noises.

PLAYABILITY

Easy to get into, but not terribly enthralling.

ADDICTION

Very small, and really quite linear.

71%

The CHEAP seats

Greetings, poor people. And welcome, one and all, to The Cheap Seats once more. The section that doesn't sneer at you, just because you can't be bothered to save up. Remember, we care

Dan's selection

Falcon and Mission Disks

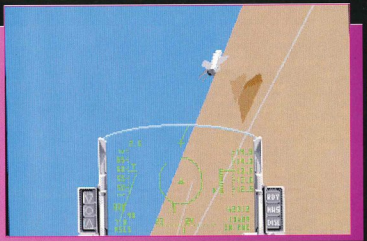
Action Sixteen ▪ £14.99 and £9.99

Well, blimey, this is a bargain. The flight sim that tempted hundreds of kids to save up and buy 16-bit computers, now available for the same amount as, er, something that costs £15.

Plus both mission disks for a tenner! Is it worth it? Does the Pope wear a blindfold in the bath? Even now, after all this time, this is a smart flight sim. Lesser sims are released at twice this price.

There's really no way that you can hope to cover everything in such a small space – have a look at the flight sim feature in the main magazine for that.

A lot of people may already own it, but for those who missed out it's the chance of a lifetime. Not just a crap old re-release but a genuine classic made available to a new audience. Bargain of the year.



Panza Kick Boxing

Kixx ▪ £7.99

Hey, it's a good month this! First a great flight sim, and now a great beat-'em-up! Panza is, for me, the only fist thumper worth playing. No poncing about with any plots or kidnapped relatives, just jump in a ring and smack people very, very hard.

You can set the joystick moves to activate any of over 50 punches, kicks and leaps, so you can really develop your own fighting style. The better you get, the bigger prizes you earn until you can take on Panza himself.

The game will auto-save your fighter, so when you've built him into a lean, mean killing machine you can keep him that way. Add a training section and an awesome two-player mode and you've got yet another budget bargain! Yowsers!

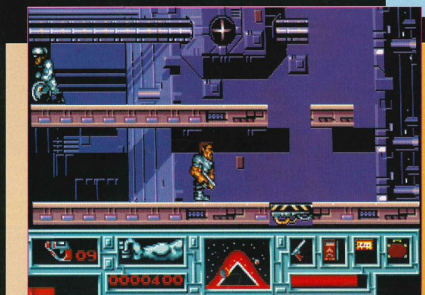
Shoot-'Em-Up Construction Kit

GBH Gold ▪ £9.99

A budget utility rather than a game, but it is a game. Sort of. This infamous little chestnut lets you design your own shoot-'em-up, believe it or not. It's not quite as simple to use as it could be, and it can take ages to produce an actual game. There are some sample games to have a fiddle with though, by changing the graphics and making them really rude. If that's your thang of course.

Personally, I couldn't be bothered with it. If you like the idea of having a doodle every now and then, it's at about the right price. The biggest problem is that SEUCK games are almost always notoriously crap. PD has never been the same since it first came out. Minority appeal only, methinks.

Ben's selection



Total Recall

The Hit Squad ▪ £7.99

Cash-in time returns with the recent spate of big movies. Salivating profusely, the programmers snap up the rights to the films and bring out more crap platform games.

To set the screen of the game there is a god awful slide-show-type thingy which tries to explain why Total Recall is platform shoot-em-up affair involving lots of jumping around and shooting. Ho hum, but it's too bloody hard.

You get one life per go. How long you last is determined on how much energy you have – believe you me it doesn't last very long. To help along the way there are lots of other little tit bits which seem to do absolutely nothing, apart from a watch that tells you where to go. More thrills and playability could easily be attained from a dead sheep.

50%

NARC

The Hit Squad ▪ £7.99

NARC? More like Narcoleptic. Boredom sets in as another really dodgy shoot-everything-that-moves game hits the streets. In this exercise in tedium you become a member of the drug police.

As you happily walk down the road, bullets rain down on your head and you are attacked by rabid dogs. So you retaliate buy blowing merry buggery out of everything that moves. The movement of your character in the game is awful and the screen update is on a par with the ZX81 which doesn't add to the appeal of the game.

There doesn't seem to be any point to NARC. Presumably the final goal is to bump off Mr Big or some such inspired originality, but don't bust a gut trying to get a copy – you could do better with a squeezy bottle and two toilet rolls.

40%

Spike in Transylvania

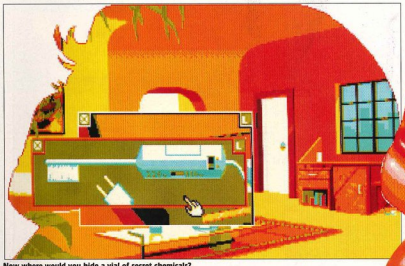
Code Masters ▪ £7.99

I'm quite baffled as to how Code Masters managed to get away with this game without getting their wrists slapped. Your character is identical to Hagar the Horrible, that oh-so-side-splitting comic character from the Sun. However, they have cunningly changed the artwork on the outer cover.

In short, this is boring, painful and very hard work to play. It's an adventury sort of thing that has you walking round numerous locations that all look the same.

It's also one of those vastly irritating games that to progress through you have to walk around endlessly picking up completely irrelevant things and going back to the same location 400 times. If you like this sort of game then so be it, but they irritate me immensely.

45%



Now where would you hide a vial of secret chemicals?

Woop! Woop! Nudey pics this way, boys!

FASCINATION

DIGITAL INTEGRATION ▪ £25.99 ▪ ½ meg ▪ Mouse ▪ Out now

Well, wahey, eh lads? You can't beat computer games for a bit of nudge nudge wink wink titillation can you? Well, OK, so you can. But French games eh? Full of it! Nothing but! Wahey, eh lads? Better than the real thing!

Who wants to actually talk to a woman, when you can see some grainy, nudey, digitised computer women? Well, most of us actually, but that's not the point.

No, sod it, that is the point. What we have here is a very pathetic attempt to cash in on the hormone-heavy "little schoolboy" market. It's an adventure, but only by a long stretch of the imagination. But, for what it's worth, here's the "story". Our heroine is Captain Doralice May, a "babe" by all accounts and an airline pilot to boot. She's flying a routine flight from Paris to Miami when one of the passengers snuffs it.

His last words implore Doralice to deliver the contents of his briefcase to the President of Quantum Unlimited. So she's allowed to nick this bloke's briefcase, and promptly sets about what seems like a routine task. But it isn't. Oh no.

Remember Gobliiins a few issues back? Well this, I'm led to believe, is by the same people. It's certainly in the same style. Obscure puzzles leading you from one screen to the next.

However, I enjoyed Gobliiins for two main reasons. One, it was funny and two, even though the puzzles were obscure, you could at least work them out. On the other hand Fascination is, well let's not beat about the bush, it's crap.

You get about 20 screens of "action" to work through, mainly by clicking all over the screen to see what you can pick up and what you can't.

For instance, at the swimming pool you've got to give a hat to a stewardess (topless, of course) and she'll give you a torch, then order a coffee, not forgetting to pocket a sugar cube because you just know you'll need one later.

Then click on a tiny square (which is, of course, a light switch) to light up the pool.

VISION

OKish backgrounds, but tasteless and highly crap nude scenes.

AUDIO

Average tune by techno-boffin Moby. But I'm feeling spiteful, OK?

PLAYABILITY

Puzzles are obscure to the point of being ridiculous.

ADDICTION

Is it worth finishing? I couldn't be bothered finding out.

20%

This reveals a shiny thing which is of course a pendant.

Your average games player will, naturally, have guessed all of this anyway. That was satire by the way. It's about as straightforward as a very bendy thing.

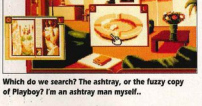
And on top of the pathetically convoluted puzzles masquerading as gameplay, we've got the fact that it's outrageously sexist. It may have a female lead character, but don't think that this is a blow for equal rights.

This game has got mucky men's pawprints all over it. "Oh I'll just slip out of my uniform" she purrs, before indulging in a dodgy digitised shower scene. This, needless to say, has absolutely nothing to do with the game.

It's crap, OK? Certainly not worth buying for the "game", and if you're looking for a bit of sauciness then the terrible graphics are worse than a cold shower. Whoever drew them obviously has a very distorted view of the female form.

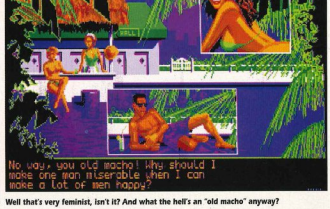
Toilet humour, duff nudey pics and a game so thin you could sneeze and blow a hole in it. Buy this and lose all your friends. Sad, sad, sad with a huge crateful of sad for good measure.

Daniel



Which do we search? The ashtray, or the fuzzy copy of Playboy? I'm an ashtray man myself..

And that's not the only dog in the game. You should see the girl in the shower. Eeeurgh!



Well that's very feminist, isn't it? And what the hell's an "old macho" anyway?

A sort of a yellowy astronomical body

AMBERSTAR

THALION ▪ 1 meg ▪ £29.99 ▪ Keyboard and mouse ▪ Out October

Adventure games are one thing I am not normally a fan of. I invariably find them tedious slow, moving and infuriating but thankfully Amberstar isn't like the rest – it has a certain "hmmm" to it.

It's a sort of hybrid of Dungeon Master and Megatraveller. Your character is moved by the mouse and is quite quick so it doesn't get boring clicking to the left, clicking to the right and so on. However, your views do change from a plan position to a character's eye view when walking round the city.

Details of what you are supposed to be after in Amberstar are a bit hazy but it's nice anyway. The first location you start off in is a graveyard – spooky, huh?. Well no not really, one thing this game does lack is atmosphere – no spooky noises or dark and dank pictures of beasties lurking in the corner.

From here you can wander round the city, and a very bizarre city it is too – everything looks the same, mainly because it's all walls and a couple of doors dotted here and there.

This is another downfall of the game – almost all the doors cannot be unlocked unless you have a key, a key which is found on the other side of the map unless you have another member of your group who can pick locks.

Unlike Dungeon Master, you have to go round adding members of your group instead of starting with a full posse.

When you travel round the city you can find your own house, crash in, make a brew, have a kip – well not quite, but there is a chestful of goodies to make your journey a little easier.

I found a temple which was in the name of, wait for it, St Marillion. Now this means this game was programmed either by very sad Magnum and Marillion listeners or somebody with a bad sense of humour.

When you need to do something other than bimble around aimlessly you have a number of icon-driven menus. You can hold conversions with other characters which are either incredibly friendly, ie "let me give you all my money and show you where you are to go, stranger" or incredibly unfriendly, ie " sling yer hook y'nosey bugger and let me drink another 40 pints". The menus also let you pick things up, drop things and a myriad of other run-of-the-mill adventure gamey things.

Amberstar isn't one of the best adventure games I've seen but it is accessible enough to be enjoyed by a wide range of people.

However, it is advisable to have the game hard drive installed or else it's a case of painful disk swap city. A must for your average adventure gaming glasses wearer who lives in cupboards full of old newspapers and well-thumbed copies of Escort repair manuals.

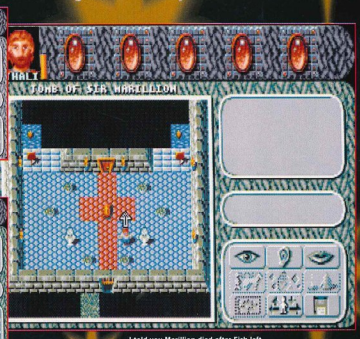
Ben

Not exactly the ideal place for a 14-year-old girl after dark

Strangers in the night exchanging glances

'Come on then ranger, less of this spooky talk – where's Lassie?'

Spooky spirits or a bad draught?



I told you Marillion died after Fish left

VISION

Nothing fantastic but does the job.

AUDIO

It's not usually that noisy walking round graveyards and dark cities.

PLAYABILITY

Easier to get the hang of than welly throwing.

ADDICTION

Definitely one you will keepcoming back to.

75%

Race track rogering

CRAZY CARS III

TITUS ▪ £25.99 ▪ Joystick ▪ 1/2 meg ▪ Out now

VISION
Pretty smooth for the ST.

AUDIO
Astounding creaminess of engine farting.

PLAYABILITY
Tricky but not too tricky – a challenge.

ADDICTION
I rekon you'll be back.

79%

Not exactly Ladbrokes bookies, but just as fun

Last one down the pub's a leveller

Oops. So I'm not in the top three

I am sick up to the back teeth of sexually inadequate driving games. The vast majority of them are deadly boring, some of them are quite good but all the bobbins that goes with them is invariably sad.

Crazy Cars III, eh? Dead original. All the software companies in the world put all their different car games together in one room and let them breed furiously. The product? This hideous half breed.

All right, I'll take my miserable sod head off for a few minutes. Crazy Cars III is quite a good game. The gameplay is good, quick and relatively painless with lots of driving in between. You are a driver who takes part in illegal road races across America. The races vary from desert to city streets. But you are not alone – there are several other rather dodgy looking characters who race against you.

Entering these races isn't free y'know, it costs you to partake in these little jaunts across America. The price varies to the prize money available.

Along with the weirdos who do this road racing biz, you have to contend with the locals who can sometimes be pretty hot. It's easy to get whooped by them so watch it.

Now hurtling down roads at 180 miles and hour is going to attract a bit of attention, and so out come the coppers. Fine, you're getting chased by the cops across America endangering lives of hundreds of people, so do they force you off the road?

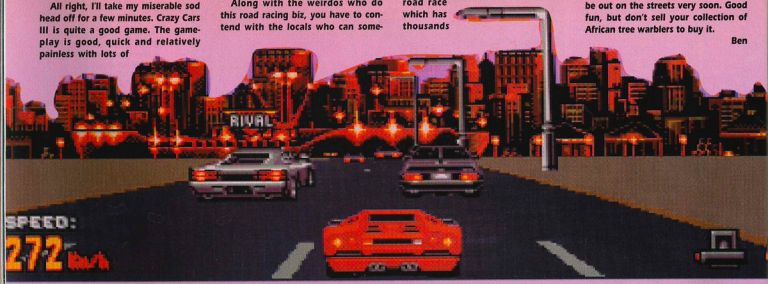
Nope, they wait till you stop, as you would, Ooh there's a policeman, I'd better stop my illegal trans-state road race which has thousands of pounds riding on it right away! The actually driving isn't that bad. It's very similar to Out Run only the track doesn't actually go up and down which is a bit of a disappointment.

But the speed is still good which is a bit of a rarity and there are lots of good little touches along the way.

When you are about to take part in a race you have to place bets with the other drivers on who is going to win. There is the usual placing of bets and raising the other players' bets. If you do it right and are pretty sure you are going to win the race you can make a right killing.

Well, as long as Tipper Gore and the board of censors don't freak out about a game having gambling and illegal road races, Crazy Cars III will be out on the streets very soon. Good fun, but don't sell your collection of African tree warblers to buy it.

Ben



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Don the old adventuring cap...

LURE OF TH

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Once upon a time there was a nice king who united all the warring factions in his lands and brought about peace and prosperity. At least, he did everywhere except Turnvale, a remote little village where a revolt has recently taken place, orchestrated by some apprentice sorceress calling herself Selena.

Anyway, here's where you come into the picture. You are Diermot, and find yourself roped into the inevitable mission to free the village.

However, as you near Turnvale at nightfall, you meet an army of gruesome creatures named Skorl, hired by Selena. You survive the ensuing scrap, but awake to find yourself imprisoned by Skorl.

This is where your adventure begins. You first have to escape from your dark and dingy cell and, once out, you have to get rid of Selena. Easy, eh?

For an adventure game to be successful, it needs several things. First, a completely weird and very unlikely plot. Lure of the Temptress certainly has that. Second, a sense of humour. Monkey Island had it, so does Lure. And finally, a friendly control system. Yes, it's got that too.

This is blacksmith street. Nice, innit?

The main square of Turnvale. What a hive of activity

Down at the local alehouse. Real ale for real men in a real medieval tavern-type backdrop

In Lure, everything is mouse controlled, making the gameplayer's life much easier. Point at an object and click with the left button for a description, and with the right to bring up a menu of actions you can perform with it. You can control everything in the gaming environment simply by clicking a couple of times.

You move around the landscape by clicking on the part of the screen you want to move to. The character then makes his way around the obstacles in his way, excusing himself to anybody he might collide with. Controlling your character is nice and easy, leaving you to concentrate on the puzzles presented by the game.

When you meet people you can talk to them, and the game will ask logical questions for you and hold a brief and often quite amusing conversation. Alternatively you can listen in on other people's conversations. For example, you might hear:

Gwyn: "Ewan, have you got anything for cockroaches?"
Shopkeeper: "How about this spicy sauce?"
Gwyn:" I want to get rid of them, not eat them."

It's just that strange type of programmer's humour.

Throughout the game you have to question characters until you find something, and then return to people to ask them about new things you've just discovered.

Although it is quite rewarding when you do manage to find out a new titbit, it can be frustrating at times to have to revisit several locations to find somebody.

The reason you may have to search for some time to locate different characters is that Lure is the first game to feature the new Virtual Theatre system.

This means that characters realistically move about performing their daily business, visiting the pub and shops, and generally wandering around. This realism makes the game more interesting and enjoyable to play. The presentation is excellent and beautifully drawn graphics depict each location. Take a look at some of the screenshots and you'll appreciate this – quite how they managed these

It's dead easy using the menu systems to perform actions. Diermot is taking a look at what he's carrying

E TEMPTRESS

pictures in 16 colours is a mystery.

The sound effects are impressive too, for the all-too-frequently belittled ST. Atmospheric noises can be heard in a variety of locations, such as the blacksmith striking his anvil. The attention to detail is terrific.

The only downside is that in-between every location there is a substantial pause while the next screen is loaded in, which can become quite annoying after a bit. Still, most adventures suffer from this, not just Lure.

There is plenty to do and lots to explore so you won't finish the game in a hurry. Even if you're an experienced adventurer you'll find it takes a good time to search everywhere and speak to everybody. Interaction with the other characters is the key to success in Virtual Theatre – you won't be given objects or information to help you later if you don't do the person in question a favour.

As an example of this, shortly after escaping from prison you'll find a bloke in a green coat. If you deliver a package for him, you'll be given a present.

Later in the game you can exchange this for a flask of alcoholic beverage, which you present to the blacksmith who promptly drinks it. He'll then do you a favour and give you some information.

Even if adventuring isn't really your kettle of fish, Lure of the Temptress may convert you. It's a fresh new approach and a great game in its own right. The series can only improve, so it looks like Lucasfilm have a serious rival at last.

If you're the more patient type of gamer who wants a challenge that will give you several weeks or months of enjoyment, look no further.

Dave

Here's Ewan's shop, on the left. Ewan's the Arthur Daley of Turnvale. Would you buy a – supposedly – fresh mushroom off this man?

VISION

Beautifully drawn backdrops and characters.

AUDIO

Surprisingly good atmospheric effects.

PLAYABILITY

Very enjoyable and easy to use.

ADDICTION

A fair old challenge.

92%

Who's who

You'll meet all sorts of wacky and zany characters on your way. If you follow this handy Gamer guide then you'll find that, er, you'll recognise them.

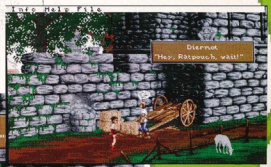
Just think, then you'll be able to say to your friends: "That's that Ewan geezer," before they've asked the character, and you'll be able to bask in the glory and say, "There, told you so!". Or something.

Here's our jolly hero, Diermot. With a name like that, you can't help but feel sorry for the poor chap. He's an OK sort of guy, but he's got no social life, he never gets invited to parties, and everyone sort of says "Hi" and then walks away from him (except Gwyn, and she'll talk to anyone for hours). What a sad, lonely individual Diermot is.

This is the jester chap who guides you through the friendly manual. You rescue him shortly after the start of the game, and from then on he sort of hangs around you like a bad smell. His name's Ratpouch, and when he occasionally attempts to tell a joke you're best just ignoring him. Still, he's useful for picking locks (ooh, major hint there).

This is Gwyn. She visits the shop and buys cucumbers. What an exciting life she must lead. If possible, avoid talking to the daft old bat, because otherwise she'll waffle all day and you'll have a job getting away from her.

For some reason, Diermot wants to talk to that lowly jester type person Ratpouch. Oh dear



Saving Goewin from a fate worse than death... stuck in a room with two of those Skorl things

cheat mode

The Gamer guide to GOBLIIINS

What a bizarre game that Gobliiins is. Not content with having a spookily repetitive name, it also features some of the strangest and most obscure puzzles ever. But, cease and desist all hair tearing, for here comes Cookie Monster from Dual Format to help out.

As well as naming himself after possibly the greatest Muppet creation ever (although Oscar the Grouch comes a close second), he's finished Gobliiins and is ready to spill the beans to you all. Huzzah!

First of all, let's just make it clear that each goblin will be referred to by a number. Number one is the one who picks stuff up, number two is the one with horns who punches stuff, and three is the magic one. Also, each level code starts that level with full energy. OK? Right, here we go...

Room 1 (No code)

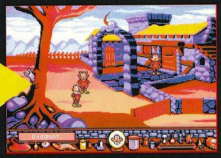
Use 2 to punch the right-hand side of the archway.
Use 1 to pick up and blow the horn that falls down.
Use 3 to cast a spell on the branch that falls down.
Use 1 to pick up the pickaxe.

Room 2 (VQVQFDE)

Use 3 to cast a spell on all the apples.
Use 2 to punch all the apples except the one on the far left.
Use 1 to pick up the two apples (not the middle one).
Use each apple in the gap.
Use 1 to chip the diamond from the cliff face with the pickaxe.
Use 1 to pick up the diamond.

Room 3 (ICIGCAA)

Use the diamond on the door.



Room 4 (ECPQPCC)

Use 3 to cast a spell on the plant nearest the door.
Use 2 to climb the plant.
Use 1 to climb the ladder and pick up the pot on the left (pot 1).
Use the pot on the plant to the right.
Use 1 to pick up the diamond.
Use 2 to punch the book at the end of the table.
Use 1 to use the diamond on the wizard.

Room 5 (FTWKFEN)

Use 3 to cast a spell on the vine in front of Quasimodo.
Use 2 to climb the vine and punch the stone face's right eye.
Move 1 onto the tongue.
Use 3 to cast a spell on the top of the coffin, then run inside the stone head.
When the skeleton is above you, run onto the tongue and use 2 to punch the eye again.
Wait until the skeleton is back in his coffin and punch the eye again.
Use 1 to pick up the mushroom.

Room 6 (HQWFTFW)

Use 2 to climb the rope above the spider and use him on the small rope to the right.
Use 1 to pick up the gun and use it by the steps under the sleeping spider.
Pick up cushion and use it under the spider in the air.
Use 3 to cast a spell on the spider in the air.
Walk over the bottle on the cushion to pick it up.
Pick up gun and use it under the spider guarding the door to the right.

cheat mode

Room 7 (DWNDGBW)

Use 3 to cast a spell on the bag by the tree and 1 to pick it up.
Position 2 to the left of the scarecrow.
Position 3 on the leftmost branch.
Position 1 in front of the scarecrow and use the seeds.
When the birds appear, use 2 to punch the scarecrow.
Cast a spell on the clouds until the flower grows.
Pick up the flower.
Walk up the wizard in the top right corner.

7

Room 8 (JCJCJHM)

Cast a spell on the skeleton.
Cast a spell on the bone.
Use 1 to pick up the pipe.
Use the pipe on the basket to the left.
Use 2 to climb the snake.
Position 3 on the left side of the end plank nearest the front, and make 2 punch the large stones up above to the right of the screen.
Repeat for 1.

8

Room 9 (ICUGCGT)

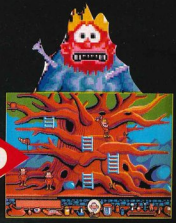
Move 1 around the edge of the screen opposite the dog and pick up the meat.
Meat is smart.
Leave around the edge of the screen.

9

Room 10 (LQPCUJV)

Use meat on the first hole.
Cast a spell on the leaf on the tree.
Position 1 on the new branch.
Position 2 on the blue ball at the bottom right of the screen.
Use 2 on the branch above him to catapult 1 upwards.
Repeat for 3.
Cast a spell on the cork at the top of the tree.
Pick it up and use it on the hole at the top of the tree.
Move 1 onto the end of the branch to the left of the ladder, under the top branch. He will fall off.
Pick up the windsock.
Position 1 at the end of the branch with leaves at the end.
Make 2 catapult 1 up again.
Position 1 at the hole at the top right-hand corner of the tree.
Position 2 at the hole at the bottom right-hand corner of the tree.
Punch the bird when it appears at the bottom hole and catch it using the windsock at the top.

10



Righty then. That's about half-way through the game. You've now got another month to try and do the last 11 rooms. If you can't do it by then, don't worry 'cos we'll be back with the rest of the solution courtesy of Cookie Monster, Xenophobe and The Adventurer from Dual Format. Y'all come back now, y'hear?

11

Room 11 (HNWVGKB)

Use the bird on the dog.
Cast a spell on the dog.
Punch the door to the left of the main house.

Cheat Mode Extra!

Judging by your response to our Gamer survey a few months ago, you think Cheat Mode really is the camel's cobblers. And so, ever receptive to your comments, we've given you a wee Cheat Mode bonus.

As well as the over-generous start of a Gobliiins solution, here're a few other titbits from you game busters out in Readerland.

Very spooky indeed...

Very, very spooky actually. James Crompton of Oxon claims to have found some extra levels on Lemmings. It all sounds a bit strange to us, but give it a go. What have you got to lose? Here's what you do...

Type in "LEMNGFINAL" as the password, then enter "IAMNOTGOOD". Now you can skip levels with the spacebar. Skip the last level, and the 30 identical levels that follow it. They're rated "blue" apparently.

Then skip the ten "playerh"-rated levels and you should find 20 completely new levels. James says that they're fairly easy, but it must be worth having a look. Oooooeeeeeooooooo.

Startlingly crispy

Are you having trouble getting to the later levels of Ocean's cheesy snack-related puzzle game, Pushover? Well, we don't blame you. It is a bit tricky, isn't it?

One person who didn't have any problems is Paul Chapman from Hartlepool. He's sent us the level codes for the first 60 levels. And being generally nice people, here they are. Just for you. Because you're special. Yes you are.

Level	Code	Level	Code	Level	Code
1	00512	21	15878	41	31238
2	01536	22	14854	42	32262
3	01024	23	14342	43	31750
4	03072	24	10246	44	29702
5	03584	25	10758	45	30214
6	02560	26	11782	46	29190
7	02048	27	11270	47	28678
8	06144	28	09222	48	20486
9	06656	29	09734	49	20998
10	07680	30	08710	50	22022
11	07168	31	08198	51	21510
12	05122	32	24582	52	23558
13	05634	33	25094	53	24070
14	04610	34	26118	54	23046
15	04098	35	25606	55	22534
16	12290	36	27654	56	18438
17	12802	37	28166	57	18950
18	13826	38	27142	58	19974
19	13314	39	26630	59	19462
20	15362	40	30726	60	17414

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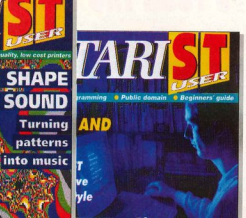

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Send your entry form to: Flight Simulator competition, Atari ST User, Europa House, Adlington Park, Macclesfield SK10 4NP.

Welcome to Aspects of the Atari ST

Atari ST User *brings you six special pages devoted to your very own favourite ST subjects, starting here with Midi and Music*

Emulation.....103
Communication 105
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Rave on!

In spite of the fact that there are around 30 sequencers and scorewriters for the ST, new ones continue to appear. A favourite ploy is for developers to take their up-market sequencer and produce a budget version. The Digital Muse cut down Virtuoso to produce Prodigy and now they've cut down Prodigy to produce Rave.

The really nice thing about Rave is that it's written in machine code and it's fast. After using it, Gem screen redraws seem twice as long as they are – and they seem to take twice as long as they should in any case. However, it has its own graphic interface and won't work with desk accessories.

Rave will run on any ST, even a 520, and it's available in versions for mono and colour monitors. The disk is heavily copy-protected which is a nuisance but, perhaps, understandable in these crime times.

The screen looks similar to Prodigy (which is similar to Virtuoso). The transport controls, counters and so on are on a strip down the right of the screen and a set of menus run along the bottom.

These select seven windows – tracklist, cut/paste, score, event, grid, set up and disk – which appear in the remainder of the screen.

There's a clock in the top right of the screen which is linked to the bar/beat counter and tempo. You can work out how many bars you need to produce x-minutes worth of music at a certain tempo, or you can adjust the tempo in order to make a piece of music last a certain length of time.

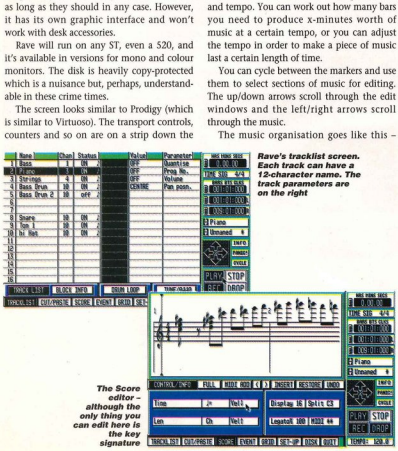
You can cycle between the markers and use them to select sections of music for editing. The up/down arrows scroll through the edit windows and the left/right arrows scroll through the music.

The music organisation goes like this – there are 32 tracks which, together, form a song. To maintain compatibility with its forefathers, the program calls a song a block although, unlike its antecedents, it only supports one block.

A track can be given a 12-character name. Rave is rather big on names and even filenames can be up to 24 characters long (it adjusts the actual filename it uses when saving to disk) which is very nice.

On the right of the Tracklist page are four track parameters – Quantise, Program Number, Volume and Pan Position – although there is a lot of unused space below these which is used in Prodigy and Virtuoso. Each track can be assigned a Midi channel and switched on or off.

The Copy/Paste page has four options – Copy, Insert, Remove and Wipe. These operations take place between the markers and there are Restore and Undo functions just in case...



Rave's tracklist screen. Each track can have a 12-character name. The track parameters are on the right

The Score editor – although the only thing you can edit here is the key signature

Unusual

The Grid editor shows notes on a grid in a piano roll type format which, unusually, runs from the top of the screen to the bottom. Most grid editors seem to run from left to right.

You can add and delete notes here and adjust their On and Off velocities. Note Off velocity is an interesting parameter to include but is not supported by many instruments.

The Event editor shows the notes in an event list. It has a visual filter so you can concentrate on the type of event you want to edit. Chord mode shows notes which play at the same time.

It's nice to see a Score editor in a budget program although this page lets you do relatively little. It shows the score, one track at a time, but you can't actually edit the notes although you can change the key signature.

It tantalisingly displays the edit menus and symbol boxes although none of them actually do anything. Shame.

The Set Up page includes options to set ➤

Midi and Music

Ian Waugh looks at a program that prints out song file data from C-Lab's Creator and Notator

Midi Thru on or off and Internal or External Clock.

You can save tracks and songs but there is no Midi file support which will limit the program's appeal. It means you can't take your songs with you if you upgrade (unless it's to Prodigy or Virtuoso) and you can't play the wealth of commercial and PD Midi files. Shame, again.

The manual is a small in size and not very long. It takes you through basic sequencer principles as it explains how to use the program but there are a couple of features which aren't mentioned at all.

You'll probably want to know whether or not to buy it. Well, there are now at least three sequencers available at around £40 to £50 and a choice really has to be down to personal preferences and requirements.

Rave's major ace is that you can upgrade it by adding full modules similar to those in Prodigy and Virtuoso to give you full Score and Grid editing, Processing and Arrange facilities – and Midi file support.

These cost between £20 and £40 each and allow you to build up your system slowly although you might like to consider how many modules you are likely to want and see what the total bill will be.

Rave is £39.99. More from The Digital Muse, 82 Tachbrook Street, London, SW1V 2NB. Tel: 071-828 9462.

BMF goes trade only

This year's British Music Fair was a trade-only event, reflecting the effect of the recession on the music business. As a leisure industry it's one of the first to suffer.

Some major companies such as Casio and Technics decided not to exhibit but others, such as Akai, returned after a few years' absence. Stands were smaller with few demo booths and without the rows of hands-on equipment to play with.

Still, products announced at Frankfurt were at last available. Interesting new goodies include the Boss DS-330 Dr Synth module from Roland.

It includes 256 GS sounds (Roland's adaptation of General Midi which we discussed in this column in May and June 91 (hope you've got your back issues handy) and eight drum sets. All this for a modest £339. Yamaha's TG500 (3999) is a new expander module based on the SY85 synth with a massive 64-note polyphony. Brand spanking new from Korg is the Wavestation SR (£899), essentially a Wavestation in a 1U high rack-mount format.

Major software news of the show has to be the official, but temporary, reduction of C-Lab's Notator down from £575 to £299 and Creator down from £330 to £199.

This is in response to a price-cutting venture by Evenlode Soundworks, the original Steinberg distributor, who have been "dumping" their stocks of Cubase for £279 although, curiously, if you send a song on disk from your current sequencer, you can buy it for £249!

Harman Audio became the official Steinberg distributor on 1st July and dismissed Evenlode's tactics as a temporary measure. "When their stock is gone," said a Harman spokesman, "they won't be able to get any more."

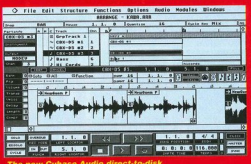
Harman has a long-term plan for Cubase which is now available in Mac and PC versions. Part of the plan includes a permanent price reduction down to £399 which they feel is a more reasonable price. Other Steinberg software has also been reduced. Harman is also in discussion with C-Lab distributor, Sound Technology, and it looks likely that Notator will rise in price after the Evenlode sell-out but only up to the £399 level. Whichever way you look at it, now is good time to buy one of the market leading sequencers, but get in quick!

Other C-Lab software has been reduced, too, including Pohlframe (£191 from £299), the universal editor/librarian, which now comes with support for lots of synths.

Unitor II, the SMPTE synchroniser and Midi port expansion device is down to £229 from £390.

Harman had been keeping quiet about new Steinberg developments until they officially became UK distributors but the BMF brought news of nine new pieces of ST software and hardware. Including a new budget program called Cubase Lite at only £99 (more about this in a later issue of User).

Other programs previewed at The Frankfurt Music Fair are now available including the mega impressive Cubase Audio (£TBA) direct-to-disk recording system; an updated version of Mastercore II (£249); and an updated version of Avalon v2.0 (£299), the universal sample editor.



The new Cubase Audio direct-to-disk recording system – mega!

Other music software news concerns major music book publishers, Music Sales, who are releasing a number of songs in Midi file format complete with songbook. There are eight songs per pack which will retail at under £10.

That's going to throw the bit among the bytes in the Midi song file format community. I believe Music Sales are aiming for around 6,000 song titles! More details about this when I have them.

If you think it may be nice to visit next year's show, get in touch with a dealer friend. It looks like it's going to be trade-only, again!

Sound Technology, Letchworth Point, Letchworth SG6 1ND. Tel: 0462 480000.

Harman Audio, Mill Street, Slough SL2 5DD. Tel: 0753 535306.

Music Sales, 8/9 Frith Street, London W1V 5TZ. Tel: 071 434 0066.

Music update

● You won't believe this but it's true – honest! Heavenly Music have rendered the complete score to Alfred Hitchcock's Psycho into Midi file format!

I hope to have a copy for review next month but don't tell Norman... It will cost £29.95. More from Heavenly Music on 0255 434217. Coming, mother...

● *Lizard (£165), MPI's universal editor/librarian which featured in our Midi Music Show report, supports an increasing number of instruments.*

Driver disks are available for the Emu instruments, Roland JV and R8 series, Korg EX and DW series, Sequential Prophet instruments, Yamaha TG100 and SY99, Kurzweil K2000 and Akai samplers. Discs are £35 each. Effects drivers are also being developed for Yamaha, Alesis, Zoom and Lexicon units. Must get around to reviewing this soon. More from Music Pro Imports (UK) on 081-789 8641.

● Hands On have been busy these last few months. The Roland Sound Canvas Editor mentioned in last month's Music Update has turned up on my desk (more when I manage to borrow a Sound Canvas!) and now Hands On have announced plans to distribute Tran Trax music sequences from America.

These are for the big boys – they assume the user has 64-note polyphony! But having said that, many modern synths have 32-note polyphony, if not more, and even some of Yamaha's humble portable keyboard boast 28-note polyphony. More from Hands On on 0705 221162.

Banishing a printing spectre

I make no apologies for coming back to the subject of printing from the Spectre Mac emulator time and again. The fact is that, brilliant as Spectre is in almost every other respect, achieving decent quality printed output can be a real headache.

Part of the responsibility lies with Apple, of course, for designing the architecture of their machines in a totally non-standard fashion so that printing Mac files from an ST is rarely plug-in-and-go.

For many dot matrix printers and for the Atari laser there are emulators which will treat the device as an Apple ImageWriter, although the output resolution is, of course, somewhat disappointing in the case of the Atari laser, and PostScript (see last month's review of CompoScript) is the only option for 300dpi quality on the SLM804/605.

Selecting a printer resource through the Chooser accessory – the indispensable first step to printing in Macintosh mode

Bulky lasers

Dave Small has never, unfortunately, made good his promise to provide a LaserWriter emulator which would make it possible to utilise the full powers of Atari's lasers from within the Mac environment.

Many ST users these days have turned their back on Atari's bulky lasers anyway, however, preferring instead to get near-laser quality at somewhat lower speed, but also with much less noise and for a lot less money, from the incredibly popular Hewlett Packard DeskJet.

As the DeskJet is also very popular among the Apple fraternity, and simply plugs into the parallel printer port rather than the DMA port, it should not be all that difficult to make it work under Spectre – yet I have had quite a few enquiries from DeskJet owners recently wanting to know exactly how it is done. As I don't own one of these beasts myself, I have had to do some research to come up with an answer, but here it is.

As Mac aficionados will know, you need to install a printer resource from the Chooser desk accessory to drive your output device.

There are a number of such programs available in the commercial sector – MacPrint at over £100, for example – but knowing how many Atari owners suffer from the odd cashflow problem, I had a look in the public domain and found DESKJET.SIT and BATCHPRINT.SIT.

Wrinkles

A number of people have assured me that both work fine with Spectre on the ST, although there appear to be some wrinkles in them – as I said, I couldn't try it myself so maybe some kind soul would write and let us know precisely what the problems with the above are, if any?

I found the files on CiX, but most bulletin boards supporting the Mac, and all the commercial PD libraries, should also list them.

Finally, DeskJet owners should not forget that PostScript clone software such as Freedom of the Press also invariably supports HP printers, and it should therefore be possible to print both text and graphics from within Spectre by this route, too – especially if you're not in a desperate hurry, since PostScript emulation in software can be a sluggish business!

The BAT challenge

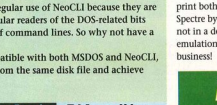
Strictly speaking, of course, the popular NeoDesk desktop replacement is not an emulator at all, although it could be argued that it is capable of emulating both the Mac and the PC at the same time.

Not only does it update the ST's Desktop from the tired old GEM standard to something broadly comparable with – and in some respects even superior to – the Macintosh finder, but there is also a command line interpreter, available separately, which hooks into NeoDesk and offers many of the features of MSDOS.

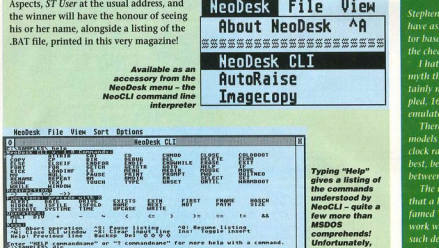
I would guess that few NeoDesk owners make regular use of NeoCLI because they are not familiar with the power of batch files, but regular readers of the DOS-related bits on this page must be well versed in the black art of command lines. So why not have a little competition?

I am looking for the best batch file that is compatible with both MSDOS and NeoCLI, so that it can be executed in both environments from the same disk file and achieve precisely the same effect(s).

Entries to Günter Minnerup, Emulation Aspects, *ST User* at the usual address, and the winner will have the honour of seeing his or her name, alongside a listing of the .BAT file, printed in this very magazine!



Available as an accessory from the NeoDesk menu – the NeoCLI command line interpreter



Typing "Help" gives a listing of the commands understood by NeoCLI – quite a few more than MSDOS comprehends! Unfortunately, as with all command line interpreters, typos only provoke straight-faced error messages

Publish

A tip for DeskJet owners, the truth about processor speeds, and a tricky competition in Günter Minnerup's monthly emulation column

Picking a processor

Stephen Brierley from Hornsey, North London, is not the only one to have asked me recently what, apart from extra speed, a DOS emulator based on the Intel 386 processor has to offer when compared to the cheaper 286-based ones.

I hate to disappoint you, Stephen, but contrary to a widespread myth there is little or no speed advantage as such in a 386 chip, certainly not the 386SX used by the ATonce emulator, which is a crippled, 16-bit version of the full 32-bit 386 – currently not available for emulators.

There are many real 286 ATs which easily outperform 386SX models in raw processing speed because they are driven at a faster clock rate, and on the ST both 286 and 386-based emulators can, at best, be driven at a clock rate of 16MHz, which leaves little to choose between them if speed were the only criterion.

The real advantage of the 386, even in its cut-price SX version, is that a lot of modern PC software requires a 386 to run properly. The famed Windows 3 graphical user interface is a good example – it will work with a 286, even a plain vanilla 8086, but to take advantage of such desirable features as multitasking, a 386 running in "protected mode" is essential.

So my advice is – if it's Windows you're after, go for the 386 (but be aware that, at 16 MHz, Windows will be a bit treacle-ish even on that processor). If not, a 286 AT emulator should be more than adequate for most applications.

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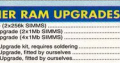

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Doin' the Bart, man!

Not a Simpson in sight as André Willey reveals an international library of ST public domain software

No, don't panic, you haven't opened the magazine at the *Gamer* section by mistake. The "Bart" in the headline refers not to the loveable cartoon character, but instead to Brode's Archive Retrieval Thang.

Hopefully the meaning of the phrase "archive retrieval" will become apparent as you read further, and Brode in this case refers to the system operator, Jon Brode.

However, quite what a "thang" might be will probably remain enshrouded in the mysteries of American culture for the foreseeable future.

In this case, the archive in question is a repository for thousands of public domain and shareware programs for Atari computers, all of which are made available to the world via the Internet electronic mail network.

Spuddy

Most modern conferencing systems – such as CiX and CompuServe – provide access to Internet mail, as do public access services like the Spuddy bulletin board discussed in the August issue. Fidonet BBS users should also be able to contact the atari archive.

Bart is a small program which runs 24 hours a day at the archive site in Michigan, USA. It is responsible for processing requests from Atarians all over the world, and sending them the files they require.

To contact Bart, simply send a short email message to the address atari@atari.archive.umich.edu. The message may contain any combination of five possible commands (see panel), which have been kept as simple as possible to help novices get started with the system. The only initial difficulty you are likely to encounter is that the Internet mail system was not designed for transferring files. When electronic mail was first developed it was used solely for transferring mail messages from site to site, so certain characters were reserved for system use – carriage return, line feed, tab, and so on.

It was also decided not to support the extended Ascii character set with codes ranging from 128 to 255, as these tend to have different meanings to different computer systems.

For example, an IBM PC has a series of lines and corner symbols where we ST users would find some of the Greek alphabet.

In effect, this means Bart can only transmit messages which contain Ascii codes between 32 and 126 – often known as seven-bit data.

So when you want to transmit an eight-bit binary file – such as a program or an .ARC file – it must first be converted to a format which is acceptable to the network.

This task is achieved using a program called "uuencode" – for which the companion "uudecode" utility is required to convert the file back to its original form.

Smaller chunks

These programs are readily available from most bulletin boards. On CiX, look for the file UUCODER.LZH in the atari.st/listings section.

If a file is particularly long, Bart will have to split it into smaller chunks to help smooth its passage over the network. When these multiple messages arrive they should be saved to disk separately, with file extenders .UAA, .UAB, .UAC, and so on.

The uudecode program will then look for these special names when it decodes the file for you.

At the last count there were somewhere around 3,500 files available from the archive, and that number grows daily. You can find the latest versions of virtually any public domain program you care to name plus source files, documentation, demos, Midi files, and so on.

If by any chance the program you require is not available at present, posting a message to the Usenet newsgroup comp.sys.atari.st will usually elicit an upload by some kind soul – most likely from Germany or America.

Finally, remember that the Atari archive is not run as a commercial service by the Atari company. It is operated free of charge by an Atari enthusiast, just like yourself, so please don't abuse the facilities he provides.

Keep your requests down to sensible proportions, and don't swamp the system with file demands – leave some time for the rest of the world to get a look in!

If Bart sends you a message which looks like this, don't panic – it can be quickly deciphered using the uudecode utility

```
 File  Edit  Settings  Options  Dial  BackTALK  Help
0                    STalker"; CIX V32/V42bis  01:45                    1
0                                                                       0
From: atari@terminator.cc.umich.edu
Message-Id: <9201221143.AA12018@terminator.cc.umich.edu>
To: andre@cix.compulink.co.uk
Subject: clipcpx.lzh - part aa of aa
Errors-To: jon@terminator.cc.umich.edu
X-Quota: 2026 and 4 files left
X-File-Requested-By: andre@cix.compulink.co.uk

table
 !"#$%&'()*+,-./0123456789:;<=>?
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
begin 644 clipcpx.lzh
M&@EB2JD).H$OMBP    M_TJQ  !0#)0)0!?;QV\  !@-   HS?XP(,GRJHCZ/+/z
MOMTE$9D MR& @ R5?$!@DCG  I7,9MS$ SM4BDC  MQB5D$10 SPMZXM+9,0Bu
MDRDB.4XL%+$B0)5^E$0.2!(EE>E0B4G8EC H3B ++!5-)MX)1JNXB:E4HY4!+
M0JJKK)4R\*!BCBKE2R0RJB,BKJH0**4B)*+!5?0AX-05I\.I8I2*I,$>IRJ4fW
M,KPCC-:B-= !'KIECZ(X45Y<$J_5Z.0!\(/'BW\,"G1.ZC2JHXX&= "I4DZ7e
MBPBH /P5^YI I-_ !.P -H .  BD>&L?)!EP3%6JE!=B>ME $:P 5HK 4X(&Yu
M!@ HBJ(S_U MC!P0V<&Z2ED<<P B4 :P P9  M3G :3B?HY!\>'H 7P!WT'tt
MF<)5$4M*Q*U\Y_Z1PW'7Q HE%Q>5<P0:B0C XB!!2MCL*Q &<0Y1\%@P6s
ME <.0H5Q>7SPCYIX\#!Z P6JJM ? .7X@(M(N)9ZNX$MWE$D%476P$0,B05'Fr
0                                                                       0
                                                                        1
```

Poor, dumb Bart

Bart, being a poor dumb computer, can only respond to the following commands:

help — *This command tells Bart to send you general help information on using the archive. This will probably be your very first instruction to the system.*

index — *This command tells Bart to send you a full index of the programs available from the archive. This index is rather long, so expect about 150 per cent of mail to be sent back!*

path — *This allows you to specify the Internet path (normally your own email address) to which you wish the files sent. If you don't give such an address Bart will try to return the requested files to you by examining the "From:" or "Reply-To:" lines in your message, but this is not guaranteed to work for all sites.*

send directory /filename — *This is the command that tells Bart which files you wish to be sent from the archive – up to a limit of 400k (or five files) per day. You can find the directory and filename information from the index file. Binary programs are automatically uuencoded before being sent out. Bart does not accept wildcards such as '?' or '*', so don't forget to type the name in full.*

sendb directory /filename — *This is similar to the send command, except that Bart will always uuencode files, regardless of whether it thinks it needs to. For example, to ask Bart to send some help information, plus the file robotz.lzh from the games directory, to your account on CiX you would send the following message:*

```
atari@atari.archive.umich.edu
path yourname@cix.compulink.co.uk help send games/robotz.lzh
```

No Second Prize
2
2
CELAL
THALION

Pedestrian PageStream?

Users of PageStream 2 will be waiting as anxiously as I am to see whether the next upgrade gets rid of the frustratingly slow screen redrawing routines. This lack of speed has become a real obstacle for many users, especially as the program's other features are first class.

There are a number of ways of speeding up PageStream and most of them involve hardly any outlay at all. Screen accelerators help marginally but it appears to be PageStream's repeated interpretation of the font outlines that causes the hold up.

Even on my ST running a Turbo 20/25 accelerator with 4Mb RAM for font caching, PageStream's performance can be tedious.

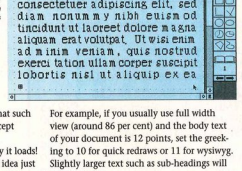
Remedies

Let's look at what can be done. First of all, the program takes about 32 seconds to load on my system after full installation. Why? Renaming the folder called DRIVERS to DRIVERX reveals the answer.

It is the import and export drivers that slow down loading. Without any drivers loaded, PageStream can be up and running in under four seconds – a very healthy figure.

Obviously, you'll need drivers so the best thing is to look closely at what's on offer and discard those you'll never need. If the worst comes to the worst, you can always reinstall them from the master disks.

There are 29 drivers installed in the DRIVER folder on the master disk. Most users will want only three – one relating to their wordprocessor and another two relating to the most common graphics formats, IMG and GEM. If, for example, you use First Word Plus – or a program that saves in this format such as Redacteur – discard all the files except IMG.IMP, METAFILE.IMP and 1STWORD.IMP. Now see how quickly it loads!



Using only the AFM file to display a bitmap representation of a PostScript font, for quick screen updates

If you can be bothered, it's a good idea just to rename the others instead of discarding them. This will leave you free to rename them back again should you need them for a special purpose.

Another tactic is to use the Set Greeking function as much as possible. The manual makes certain recommendations as to the correct figure for the magnification you commonly use.

It suggests dividing the point size of the body text by the magnification that enables you to see the text clearly in normal view but greeked – represented by diagonal slashes – in full page view.

However, if you need to speed up screen redraws, take the body text point size and multiply it by the working.magnification. A greeking figure just below the result will provide you with greeked text in normal view.

Setting greeking just above the result will bring the text back into full wysiwyg mode.

For example, if you usually use full width view (around 86 per cent) and the body text of your document is 12 points, set the greeking to 10 for quick redraws or 11 for wysiwyg. Slightly larger text such as sub-headings will still be visible.

Another very effective trick when using PostScript fonts is to hide the PFB files. These are the actual font outline information files and are the root cause of PageStream's sluggishness.

If only the AFM files are present – AFMs contain only the character spacing information – then PageStream will represent the font with a generic bitmap. The appearance will be pretty poor but the correct word and line spacing will be present.

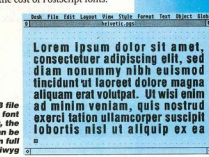
Back to normal

Once you have completed the document and you want to see it in full, quit PageStream, place the PFB file back in the appropriate folder, reload the program and update the font manager. The same file you were working on will now be represented as it will eventually appear in print – in all its PostScript glory.

Still on the subject of AFM files, did you know that you can download the AFMs from CompuServe? There is a long text file in the Adobe conference listing all the Adobe-manufactured AFM files that are available free to interested users.

It includes classics such as Gill Sans and Futura Black and it means you can create documents with these fonts in them, provided you output your work via a PostScript printer or bureau that has the appropriate PFB files (or the Mac version thereof).

It's not ideal because you can't realistically design a document without knowing what it will look like but it does offer some flexibility, bearing in mind the cost of PostScript fonts.



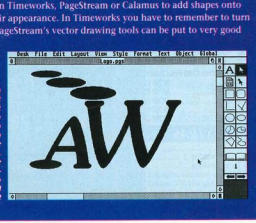
With the PFB file back in the font folder, the document can be displayed in full wysiwyg

Logo design

When designing logos and monograms, it's often useful to "tweak" certain characters to give the result more individuality and add interest.

Many of you will know just what powerful programs such as Didot Lineart and Avant Vector can achieve with PostScript and Calamus outline fonts. For those of you who are on a tight budget or who can't justify the expense for a small one-off job, don't be afraid to experiment.

It's perfectly feasible in Timeworks, PageStream or Calamus to add shapes onto characters to change their appearance. In Timeworks you have to remember to turn off text runaround but PageStream's vector drawing tools can be put to very good use quite easily.



Here we have a PageStream format Souvenir font (available in the public domain) to which has been added a vector graphic or two. Plenty of scope for creativity here – comments on the design are not at all welcome!

If PageStream 2 slows your ST down to walking pace, let Andrew Wright suggest a few remedies

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Flying high

Pat Winstanley shows you how to get your home business off to a soaring start

We've been looking at various ways of making money from your ST over the past few months. Perhaps now is the time to look more closely at what is involved.

Assuming you have at least an ST and a printer, together with a wordprocessing program, you can get started right away.

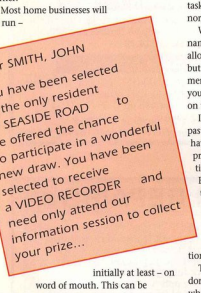
However, there are various aspects which need considering, each of which will be made far easier by the relevant tailored software.

First of all is the need to find customers for whatever it is you'll be offering for sale. Depending on your product you might approach this in a variety of ways.

The first decision to make is where your potential customers are located and who they are. It's no use trying to sell a patented pools forecasting scheme to people whose only gambling activity is an annual ticket in the raffle in aid of the local church funds.

Nor is it useful to sell top quality printing facilities to the low-paid worker round the corner.

Most home businesses will be run –



initially at least – on word of mouth. This can be helped along by judicious local advertising, perhaps with the use of a DTP package to produce "flyers".

These are leaflets which are printed in bulk, probably by your local franchised printer, then distributed door to door. After the local area has been covered in this way, the next step is to target the town.

To save shoe leather this is most easily done by means of a mail-shot. But how do you know who to post your flyers to, and how do you find their addresses? The simplest way of creating a mailing list is to get hold of the electoral register. There, all over 18s are displayed by name and address in all their glory.

From your knowledge of the suburbs of your town or city, and the judicious help of a street map, you should be able to work out where your potential customers live. Once that's done comes the chore of addressing all the envelopes. This is where the ST comes into its own.

Mailing lists

Several programs are available which are dedicated to the task of holding lists of names and addresses – mailing lists. These are really databases which have been modified for the task. and there's nothing to stop you using a normal database if you so wish.

With most of these programs you can enter names and addresses in a form which not only allows you to print out a list of address labels, but also offers the opportunity to do a "mail merge". A mail merge is what you see when you have letters addressed to you like the one on the left.

I'm sure you have had letters like this in the past. The words in capitals are those which have been mail-merged. The skeleton letter is produced with spaces allowed for information filled in.

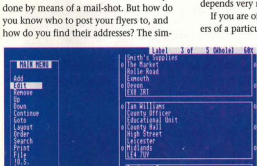
Everyone has exactly the same letter, but the business sending the letter out wants to make it feel personal to you. They therefore grab some of the details of your name and address from the database or mailing list and insert them in the correct positions by means of markers.

The example shows how it shouldn't be done, with the name back to front and lots of white space after the other entries where a fixed area has been allowed to accommodate the longest possible entry.

More intelligent programs take in the data from the database then re-justify the paragraphs to make everything look smoother, as if it had really been written for the individual.

Once you've exhausted local possibilities it's time to go nationwide. How you go about this depends very much on what you are selling.

If you are offering an item of use to followers of a particular hobby, get hold of all the magazines and journals from that hobby. In them you are likely to find names and addresses not only of the general public customers, but also dealers who might be prepared to handle your product on a commission basis. The editors of small circulation magazines might also be prepared to include your flyers with their mailings if they approve of your product.



A specialised database specifically designed to create, sort, maintain and import files of names and addresses

For instance, perhaps you have invented a natty little gadget which can be placed on your keyboard near the function keys, with paper inserts showing what each function key does on particular programs.

If you can supply both the gadget and the inserts, any members' newsletter for the products you support will probably be interested in carrying your flyers as a service to their customers. This one has been done, by the way.

Another way of targeting your customers is to buy mailing lists from brokers. A good place to look for these in the first instance is *Exchange & Mart*.

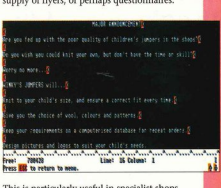
While the mailing lists you buy from there will be pretty generalised, simply by contacting the brokers will see your own name and address entered on the lists which are sold.

This will result in a good deal of junk mail, but in the midst of the rubbish you'll find some contacts which are specifically beneficial to your own business.

Plastered

Another use for flyers is to plaster them over – or rather inside – the windows of all the local shops you can find. Make sure your phone number is prominent as busy shoppers won't have the time to copy down full addresses, and might be reduced to trying to remember your phone number all the way home.

One way round this is to ask the shopkeepers if they have some counter space to stack a supply of flyers, or perhaps questionnaires.



A wordprocessor can be used for a simple flyer – no need for an expensive DTP package to begin with

This is particularly useful in specialist shops. For instance, if you have a system of moulding garden gnomes and the local hardware shop or garden centre could stock your products you would be doing each other a favour with cross-advertising.

Whichever way you choose to advertise, remember that nobody can buy your products unless they know the products exist. Target your market carefully, using the above suggestions together with selective classified advertising, and you'll be well on the way to success.

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ATARI ST User Advertisers' Index

1st Choice 12, 13
ACS Electronics 108
Anologic 65
Avon Micro Centre 110
B-Soft 55
Cambridge Business 108
Care Electronics 35
Computer Connections 24, 25
Computermates 43
Copycare 47
Database Direct 114, 115
Dataplex 55
ESP 36
Europress Software 36
Eurostar Computers 113
Evesham 104
Gasteiner 97
Gate Seven 39
Games HQ 110
GL-PD 110
HCS 59
HiSoft ..... OBC
Kosmos Software 60
Ladbroke Computers 72, 73, 74
LAPD 66
Lazer Distribution 55
Magic Space Productions 113
Marpets Developments ..... IBC
MJC Supplies 40
MT Software 56
PDSSC 111
Penge TV + Video 113
Power Computing 2, 3
Riverdene 60
Rutland Computers 108
Silica Systems 19, 49, 69
Softmachine 52
Special Reserve 6, 7
ST Club 60
Strategy Software Design 110
Take Control 35
The Upgrade Shop 110
Weserve 63

GAMER

Eagle Software 15
Microprose 5

ATARI ST USER BARGAIN OFFERS

Replay 16

At last, a low cost 16 bit sampling system for the Atari ST, featuring full 16 bit input and output in the same unit. The system comes complete with a sophisticated sample making/editing program, superb digital Drum machine program, and a powerful MIDI keyboard emulation program which gives the user the ultimate in MIDI sample control.

£99.95

HARDWARE – The 16 bit sampling unit plugs into the cartridge port of the ST. Audio connections to and from the sampler are provided via standard Phono connectors. An Input volume control is also provided.

SOFTWARE – EDITOR – The sample editor is a highly flexible 'WIMP' style program which allows conversion or editing between any AVR format 8/12/16 bit, Mono or Stereo samples. Sampling rates of up to 48Khz can be used, but the program can re-synthesise samples to practically any other speed.

Features include: • Volume control • Digital filtering and 3D frequency analysis • Cross fade looping • Record • Play • Fast Forward/Rewind with VCR style controls and much, much more...

DRUMBEAT – A 4 voice polyphonic Drum machine with full MIDI control. Up to 30 different samples can be loadedinto a kit at once and 50 patterns can be programmed in either realtime or steptime. Samples can be up to 1Mb in length each.

MIDIPLAY – Flexible keyboard emulator which can cope with up to 128 samples in memory at once. Any sample can be assigned to any note or range of notes in a 9 octave range. Midiplay can play up to 4 VOICE/NOTE polyphonic with 3 levels velocity sensitivity while in single voice mode. An advanced sample loop point editor with AUTOLOOP (Zero Crossing) detection is also incorporated to ease loop point editing.

The system runs on any ST or STE with 500K (1Mb min is recommended), and comes complete with hardware, software and comprehensive manual.

Pro Punter

Pro-Punter is a remarkable piece of software that gives you a much higher than average chance of winning on the horses.

Officially proven to the racing press and other magazines by sending time and date franked letters by Post Office mail, Pro-Punter has shown that it can predict winners with remarkable accuracy.

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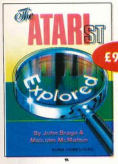

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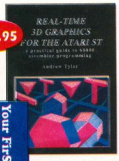

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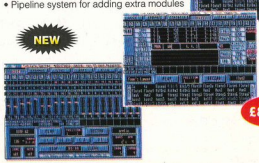
If you've enjoyed using Midistudio, why not upgrade to Midistudio Master? Crammed with features, it has:

- 240 pulses per quarter note, 100 tracks
- Midi standard file compatibility
- Real-time scrolling arrange window
- Fit-time function
- Pipeline system for adding extra modules



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Simm Module

Aries 512K RAM Upgrade (For STE only)

The Aries SIMM Upgrade is a 'plug in' memory upgrade consisting of 2 SIMM boards which will upgrade your STE to 1024K (1 Megabyte) and allow you to run all those high powered business applications or 1Mb games. The upgrade is very quick and easy to fit and comes complete with instructions and test disk.

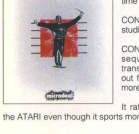
Please note: A very small number of STE's have SIPP boards installed in sockets or soldered directly to the motherboard. This upgrade is not compatible with those machines so users should check the configuration of their machines before ordering.

£14.00

Concerto

THE COMPLETE MIDI SEQUENCING SOLUTION

CONCERTO, a giant step in the world of music allowing you to write your own orchestra, play an enormous drum kit without using your hands, and create any type of music you want from classical to rock and from jazz to house - all with the use of a master keyboard and various types of midi equipment ranging from synths and expander boxes to drum machines and wind controllers.



CONCERTO offers a large range of editing tools and can represent MIDI data in a number of different ways including on a traditional score, on a grid editor, drum machine, step-time editor or even as text in the event editor.

CONCERTO allows you to spice up your music by using the studio-type mixing desk and full sequencing interface.

CONCERTO also gives you 24 tracks, 100 sequence slots, sequence parameters such as ghosting, transposition of pitch and velocity, sample out for STE/TT computers and much much more.

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It rates as the most affordable MIDI package available for the ATARI even though it sports more features than many of its more expensive rivals.

STOS 3D

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Communications – With an inexpensive modem and Mini Office Communications, you can tap into the thousands of ST shareware and PD programs buzzing through the telephone lines.

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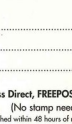

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● Atari 4Mb STE 50Mb hard drive, printer, superior PC emulator, 5 1/4" drive TV/monitor fastback cartridge and £500 of software. £850 Call David after 5 pm Tel 0282 38439

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Installation of the XTRA-RAM *Deluxe* couldn't be easier. Following the instructions laid out in our simple to follow manual which is written with the non-technical reader in mind, you disassemble your STF; STFM or Mega ST, plug in the XTRA-RAM *Deluxe* into two places inside your computer and reassemble it. The whole process takes around one hour and most machines will not require any soldering whatsoever.

The XTRA-RAM *Deluxe* works with all Memory Management Unit (MMU) chip types, whether they are soldered down or socketed. If your ST has a soldered down Video Shifter chip or a 101601 type MMU chip then some soldering will be required.

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Don't restrict your upgrade to just 1Mb. Make sure that you choose the XTRA-RAM *Deluxe* which can grow with your needs. Available today from stock at most leading Atari Dealers, or direct from Marpet Developments.

Here's what the leading Atari Magazines had to say about this top selling upgrade:

Atari ST Review: *"One of the best boards available for the ST."*

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XTRA-RAM *Deluxe*

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The Forget-Me-Clock II is the original and best!

With the Forget-Me-Clock II plugged into your ST or ST^E's cartridge port, the system clock (used by the Control Panel) and keyboard clock will automatically be set at turn on or reset. No longer will you have to waste time setting your ST's clock each day.

Why consider poor quality imitations of the original? The Forget-Me-Clock II remains the top selling clock cartridge - the user's choice! It features a full cartridge pass-thru enabling it to remain totally invisible so that another cartridge can be used as normal.

Installation couldn't be simpler - you just plug it in and turn on your ST. With a full two year warranty, including the long life lithium cell battery, why not join almost six thousand satisfied users?

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Forget-Me-Clock II Cartridge **£17.99**
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Buy the Xtra-RAM ST^E Memory Upgrade!

There are many suppliers of memory upgrades for ST^E machines. Not all cater for your particular needs. Most ST^{E}s require Single In-line Memory Modules, commonly referred to as SIMMs. However, a number of machines require SIPs - these are like SIMMs but use pins instead of an edge connector.

Each and every ST^E upgrade supplied by Marpet Developments contains all that is necessary to upgrade ST^{E}s requiring either SIMMs or SIPs. This is achieved through the use of a special adaptor. With the Marpet ST^E upgrade there is no risk of buying the wrong kit!

The Atari ST^E computer uses 256k SIMMs (or SIPs) at a speed of 150nano seconds; and 1Mb SIMMs (or SIPs) at a speed of 120nano seconds. Buying faster SIMMs or SIPs does not increase performance on your ST^E, but faster ones may be required if you later upgrade to a different computer system. Marpet always supply SIMMs rated at speeds in excess of the ST^E's requirements.

Each ST^E memory upgrade supplied by Marpet carries a full two year warranty. Here's what one of the leading Atari Magazines had to say about this top selling ST^E upgrade:

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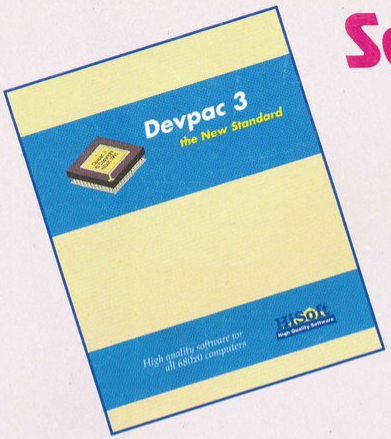
Software that matches the Hardware



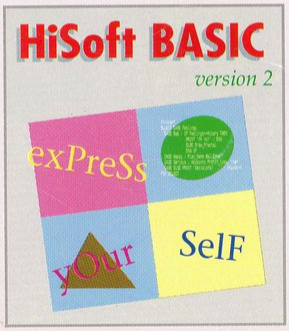
HiSoft is renowned for its range of language systems, utilities and entertainment programs on the Atari ST/STE/TT and, now, the new Falcon. We have been writing for the Atari 680x0 computers since they were first introduced into the UK and thus we know both the hardware and software intimately. Our company policy is always to offer the highest quality software at an affordable price with a complete range of backup support options - in these uncertain, difficult times, we'd like to put a smile on your face.

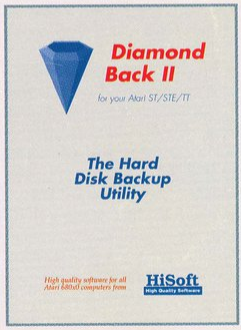
Here at last ... Devpac 3

Our long-awaited sequel to the popular Devpac 2 assembler package is available at last. The all-new Devpac 3 contains the following major enhancements:

- *brand-new multi-window editor with many user-friendly features*
- *68000-68040, 68881/2, 68851 support*
- *30% faster assembly speed than Devpac 2*
- *many new options and optimisations*
- *new linker (borrowed from Lattice C) giving a much faster link time*
- *improved 680000-68040 debugger with true assembler source level debugging*
- *works on all STs including the new Falcon*

There is much, much more than we can possibly talk about here (a totally new manual for instance) so please write or call for more detail.





The BASIC of the 90s

The only BASIC, of UK origin, for all Atari 680x0 computers that is still being improved and supported.

- *easy-to-use, friendly environment*
- *superb high-level GEM toolkit with source*
- *resource construction set & debugger*
- *super-fast compilation to machine code*
- *extensive, two-volume documentation*
- *works on all STs including the new Falcon*

Diamonds are forever

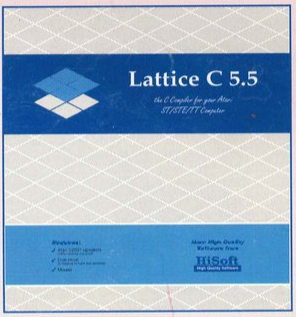
Awarded a 'Format Gold' rating of 92%, Diamond Back II is *the* back-up program.

- *image or file-by-file back-up, including incremental back-up by date or archive bit*
- *extremely fast with optional compression*
- *load and save customised configurations*
- *flexible disk formatting options with support for high-density drives*
- *clear, helpful user documentation*

Kuma Software from HiSoft

HiSoft is now in charge of the majority of Kuma's software products for the Atari computers; these include K-Spread, K-Word, K-Data, K-Comm and more. Existing users of Kuma software can register for technical support and upgrades from HiSoft by joining our Silver Support scheme (£19.95 inc for life, for all products) - please call or write for a registration card.

***Spreadsheets** - K-Spread 3 has many Lotus-compatible functions (including database/statistical/financial operations), multiple worksheets, date/time calculations, loading of Lotus files, more extensive macro facilities etc. while K-Spread 4 offers all this plus live graphing (line graphs, pie charts etc.), forms design, enhanced sideways printing through GDOS and more.*



Please phone or write for upgrade prices from earlier versions of BASIC, Devpac and Lattice C 5

Simply no Competition

This latest version of the already massively popular Lattice C 5 package, confirms it as the market leader in ANSI packages for the Atari 680x0 computers.

- *full compatibility with the STE, TT and new Falcon computers*
- *extended and improved editing environment including a brand-new project manager with 'make' facility*
- *easier-to-use and extended options*
- *improved ANSI support*
- *complete range of maths co-processor libraries including auto-detecting*
- *FSM GDOS, CPX & other libraries*
- *faster linker with common block support, support for DRI format*

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