

ATARI ST USER

The
official
Atari ST
magazine

Volume 2
Number 2
April 1987
£1.50

TUTORIAL

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mysteries of Gem

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world of wonder

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Vol. 2 No. 2 April 1987

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Quoting Ref. 72.MAG001

Telecom Gold: 72.MAG001

Prestel Mailbox: 614568383

Published by:
Database Publications Ltd,
Europa House, 66 Chester Road,
Hazel Grove, Stockport SK7 5NY.

Subscription rates for
12 issues, post free.
£18 UK & Eire (sterling)
£23 Europe
£38 Overseas (airmail)

Writing for Atari ST User: Articles and programs relating to the Atari ST are welcome. Articles should preferably be typed or computer-printed, using double spacing. Unpublished manuscripts, discs etc, should be accompanied by a self-addressed stamped envelope; otherwise their return cannot be guaranteed. Unless agreed otherwise, material is accepted on an all rights basis.

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Atari ST User is an independent publication and Atari Corp (UK) Ltd are not responsible for any of the articles they contain or for any of the opinions expressed.

News trade distribution: Europress Sales and Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings East Sussex TN36 4NR. Tel. 0424 630422.

FEATURES

News

All that's new in the ever-developing Atari ST universe.

5

Show invitation

Save money on advance tickets for the next Atari User Show.

12

Adventuring

Answers to your problems and previews of newcomers.

14

Driving printers

How to design and install 1st Word printer drivers.

51

Mailbag

Three pages devoted to your views, queries and advice.

58

REVIEWS

McEmulator

Does this cartridge really turn your ST into a Macintosh?

19

Epson LX-86

Could this newcomer from Epson be the printer of your dreams?

29

Software evaluations

Championship Wrestling, Wanderer, Skyfox and Alternate Reality.

31

Designing

Become your own architect with Cad-3D.

36

Microdeal clock card

A useful hardware add-on - but what makes it tick?

41

An alternative lifestyle

How to use Microdeal's Alternative keyboard to good effect.

54

Desktop

Quick descriptions of the very latest programs for the ST.

57

UTILITIES

Desk accessory

Programmers will welcome this useful character set reminder.

43

PROGRAMMING

Gem programming

Start of a major new series on getting to understand Gem.

23

Five Liners

Two more short programs to add spice to your ST.

35

Included with this issue:

Complete Guide to ST software and hardware

Don't miss this launchpad for all that's new in Atari computing

ATARI
COMPUTER
SHOW

10am-6pm Friday, April 24
10am-6pm Saturday, April 25
10am-4pm Sunday, April 26

**Champagne Suite, Novotel,
Hammersmith, London**

On display for the first time in the UK will be new Atari products that are set to rock the micro world.

Star of the show will be Atari's IBM PC compatible, offering a radically new design at a price that will revolutionise the PC marketplace. There, too, will be the latest models in the ST range - the Mega ST workstations. Plus the remarkable Atari laser printer, the machine that has broken the price barrier in desktop publishing.

All of these - along with breakthroughs for the ever-popular 8-bit range and hundreds of new software packages - will be on display at the April Atari Computer Show.

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We're on our own...

THIS is the first completely independent issue of Atari ST User, the only professionally-produced authoritative magazine devoted exclusively to the Atari ST range.

Until now we have been tucked inside our parent Atari User. From this month, the two go their separate ways.

Being a magazine in our own right gives us many more pages to satisfy the many and varied needs of Atari ST users. For instance, we will be able to include much longer listings in C and a variety of other languages, including Modula II and Fast Basic.

The new series on programming in Gem, which starts in this issue, is an example of the kind of in-depth treatment we shall now be able to give to subjects that we know our readers want to find out more about.

Ideas for articles and programs will be welcome – and remember we pay well for material we publish.

Here are some points to help intending contributors.

- Mark everything you submit with your name, address and phone number.
- Confirm it is your own work and not submitted to any other magazine.
- Feel free to try out an idea on us before sending in your article.
- Send articles and program listings on disc, plus a printout.
- Lengthy text should be in Ascii format on a single sided disc.
- Enclose a stamped addressed envelope for the return of material.
- Present your submissions in a style similar to the present contents.
- Programs are acceptable in Atari Basic, Fast Basic, Logo, C and Modula II.

Follow these guidelines and you'll not only have a better chance of getting your work published in Atari ST User, but you'll probably become a better programmer or writer into the bargain!

The address to write to is: Features Editor, Atari ST User, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

We can also be contacted on MicroLink/Telecom Gold 72.MAG001 or Prestel mailbox 614568363

Robtek deal means more ST products on way from USA

SUPPLIER Robtek has just concluded a licensing spree in the USA that signals a bonanza for Atari ST users in Europe.

Arriving here hard on the heels of its MS-DOZ Emulator – which in turn follows the highly successful McEmulator – will be a host of new software and hardware enhancements for the ST.

The MS-DOZ Emulator allowing STs to run top-ranked MS-DOS programs like dBase II, Word Perfect and Sellers Dictionary sold more than 2,000 units in its first week on sale in Europe.

The £69.95 software-based product licensed from American developer Paradox Incorporated is said to be 75 per cent compatible with PC software.

The MS-DOZ Emulator won't run Flight Simulator or any other program that accesses the hardware from IBM*, Robtek director Paul Share admitted.

"But it was always primarily intended for business use – and in any case there's already a better version of Flight Simulator available for the ST."

For those who do want more than MS-DOZ provides, Share promises a hardware version will be launched at the Atari Computer Show later this month.

"It's another Paradox product and it will run Flight Simulator, Lotus 123, Symphony – the lot – without any problem", he told Atari ST User.

"It operates at four times the speed of the IBM PC and is 99.9 per cent compatible.

"We're probably going to include a built-in disc drive and sell it for about £199.

"Several points have yet to be decided. The ink on the contract is so fresh we haven't even decided what to call the product over here.

"One thing I can tell you is that this is only the start of our increasing commitment to the Atari ST.

"There is so much good stuff we intend to bring over from the US that we have opened an office in Silicon Valley.

"We'll have a cartridge expander for the ST available in April. This will allow the user to switch between three cartridges at the touch of a button, and cost £49.95.

"We'll also have a pure ST version of the chess program Checkmate in colour or mono for £14.95.

"And we're bringing over a magic monitor interface for switching between colour and mono without turning off, at £19.95.

"In addition we've licensed ST Pool and Shuffleboard for sale on one disc for £19.95, and we'll be selling a 10-game ST compendium for £14.95.

"I reckon that by the time of the Atari Computer Show we will have about 20 ST products on sale with another 40 in the pipeline".

Meanwhile, McEmulator – which has now sold almost 4,500 units in Europe – is available in a new 4.0 version.

AXE POISED OVER MICRO LIVE

TELEVISION's only regular computer programme, Micro Live, faces the axe. Database Publications, prompted by hosts of letters from readers, is determined to ensure the axe will not fall.

The last Micro Live in the present series was scheduled for the end of March. Head of Continuing Education (Television) at the BBC David Hargreaves said: "The present season of Micro Live is its third. We have decided not to plan a fourth for next winter.

"We want to pause, take stock and think about how we ought to be making the best contribution to our understand-

ing of information technology in the future".

Derek Meakin, head of Database Publications, said: "Micro Live has played a leading role in introducing the delights of computing to an ever-growing audience.

"To kill the series now, when so many exciting developments are taking place in the whole world of microcomputing, is a retrograde step".

So, ST User readers, it's time to play your part.

If you want to help save Micro Live write now to: The Controller, BBC 2, TV Centre, Wood Lane, London W12. ▶

Jack Tramiel will be at show

THIS year's Atari Computer Show is proving so popular among exhibitors that the floor space has had to be doubled.

Chosen as the UK launch pad for Atari's new IBM PC compatible machine and Mega ST workstations, the three-day show opens at London's Novotel in Hammersmith on April 24.

Atari chairman Jack Tramiel will be making an appearance at the show.

More than 70 exhibitors will be attending the Database Exhibitions event and many will be unveiling their latest releases.

Haba Systems plans to show off its new video digitisers. Realizer plugs into the ST's cartridge slot and allows rapid digitising of video images in 2, 4, 8 or 16 grey levels. Price £99.99.

Prospero will be demonstrating new versions of its ProPascal and ProFortran compilers. Both feature a four window editor allowing users to compile and run their own programs.

Two new software packages will be on offer from Eidersoft. Sound Designer allows visual screen editing of the Atari sound chip. Price £49.95. Also available will be a communications package which allows data to be downloaded while the machine is in use. The company is also promoting a new hard disc system.

Doors open at 10am until 6pm on Friday and Saturday and 4pm on Sunday. A money-saving advance ticket order form can be found on Page 4 of this issue.

Software boom for the ST

GAMES UPDATE



Shuttle II

LATEST Atari ST release from Microdeal is a simulation of an entire space shuttle mission from planning, through takeoff and orbit to landing.

Shuttle II initially places the user in the role of mission controller, deciding the launch and landing positions and timings while allowing for cloud cover, wind speed and direction.

Then it's into the pilot's seat for the countdown to ignition, lift-off, ejection of solid fuel rocket boosters and tanks, while guiding the craft on its correct flight path into orbit.

After orbit is established the manoeuvring system is used to guide the craft to a faulty communications satellite which has to be taken safely on board.

Once that is done the shuttle must be taken carefully back down through the Earth's atmosphere. Price £24.95.

MEMBERS of Tynesoft's development team are talking in terms of their "best release ever" when discussing their new ST game Plutos.

They describe it as a Uridium-type arcade adventure with action taking place on various levels against a background of scrolling landscape.

Price £14.95.

Tynesoft is also releasing Liberator on the ST. Here the player has to pilot a gunship over scrolling landscape,

avoiding aliens. You then reach a group of captives and set them free.

There are five planets containing captives. Between each is a journey through hyperspace which involves an obstacle course through asteroids.

Price £12.95.

NOW entertainment and utilities software house Gremlin Graphics has entered the ST market with three games.

Typhoon and Karate Master have been licensed from German developer Kingsoft, while Trailblazer is a conversion of Gremlin's own popular dexterity challenge for 8 bit micros.

Typhoon costs £19.95, Karate Master £12.95. The price of Trailblazer has yet to be announced, but is expected to be under £20.



Tai Pan

GAMES specialist Ocean Software is entering the ST market with three major releases.

First is a version of Arkanoid, the international arcade hit from Taito, due out early this month at £14.95.

This will be followed at Easter by Tai Pan, based on the best-selling novel and comprising graphic action skulduggery on the high seas.

Out in May will be a version of an Ocean hit on 8-bit machines, jet fighter simulation Top Gun.

THE ST will be in third place in the software league table within six months, Atari bosses are predicting.

The machine has already become the fourth standard format for authors. Software Manager Bob Katz is claiming.

A number of things had come together to affect the renaissance of the ST.

There was confidence in the new management, serious programmers had been crying out for a long time for the

opportunity to work on a reasonably-priced 16 bit format.

Now that the price of the ST had fallen the price for games had settled at £14.95.

All the major software houses were writing for the machine, he said.

"What's more, software available for the ST goes right across the board. There are now a lot of powerful business programs available, most designed to take advantage of the ST's great graphics".

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The authoritative insider's guide

Abacus Software

ST Internals
(Formerly Anatomy of the Atari ST)
An essential guide to the insider's information on the ST. Written for the programmer wanting a thorough, complete description of the inner workings of Atari's outstanding ST computers. Detailed descriptions of graphics and sound chips, hardware, the Centronics and RS-232 ports, GEM, important system addresses and much more. Included is a compressed BIOS assembly listing. This reference work is a required addition to your ST library. Third printing.

AB 450 446 pages **£14.95**

ATARI ST GEM Programmer's Reference

Abacus Software

GEM Programmer's Reference
An indispensable guide for the serious ST programmer needing detailed information on GEM. Written especially for the Atari ST, it has an easy-to-follow format. Covers choosing the right programming language, introduction to C and assembly languages; a study of the Editor, C-Compiler, Assembler & Linker; programming the Virtual Device Interface (VDI); Application Environment Services (AES); Graphics Device Operating System (GDOS); and interacting to TOS. Many example programs. Cross-referenced VDI/AES calls.

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Keys to revealing the secrets hidden within your Atari ST

Abacus Software

Peek & Pokes
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AB 460 255 pages **£14.95**

NEW
ATARI ST ST Disk Drives

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ST Disk Drives: Inside and Out
The definitive guide to the ST disk drives, including the Atari ST Hard disk. This exhaustive volume not only covers files, file structures and data management, but details both the programming and technical aspects of the floppy drives, hard drive and RAM disk. Includes program listings for several full-length utilities and programming tools that allow you to further explore the capabilities of these drives. Available first quarter '87.

AB 445 375 pages **£16.95**

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SPECIALIST IMPORTS FOLLOW DEAL

SPECIALIST ST utilities from the US are now available in Britain following a new deal clinched by Precision Software. The agreement with Abacus Software also includes upgraded existing titles and a range of books.

New to the UK is Chart Pak, a business graphics package to which you can input data direct or from other software.

It works with Gem and is compatible with Degas among others as well as Abacus's own art program, Paint Pro.

An addition to the latter, Paint Pro Library I is also among the first list of titles being imported. This, too, is compatible with Degas and offers five extra fonts plus hundreds of symbols, borders and such.

PCBoard Designer is a re-release of an interactive CAD system. This enhanced version, being sold at a substantially reduced price, supports plotters. Indeed the whole printer interface section of the program has been improved.

The books include Introduction to Midi Programming, ST Basic to C, 3-D Graphics, and ST Disc Drives: Inside and Out.

Precision managing director John Tranmer said the deal was a natural development for the company.

"Until last year we did about 80 per cent of our business overseas. Then we felt we should be stronger in the home market. We decided to become distributors as well as publishers.

"We took advantage of an opportunity to take over third-party products for CBM. As we have strong links with the US



John Tranmer... "we felt we should be stronger in the home market"

it was natural for us to move into Atari products. We are now hoping to expand this side of our business", he said.

Switching to Atari?

W.H. SMITHS could soon be stocking Atari STs and 65XEs.

The retailer's computer buyer, John Rowland, said: "We like the Atari machines and we are talking with them about the deal."

This possibly signals the end of the Amstrad CPC's presence on Smiths shelves after disappointing Christmas sales figures.

Business support package

A NEW support package for Atari ST business and communications software users has been launched by systems consultancy and software design firm Interlex.

It includes membership of the leading electronic communications network MicroLink and is available through High Street stores and dealers supplied by distributors Softsel and Centrosoft.

The £29.95-a-year package has been designed to cater for the rapidly expanding user base in the business sector created by the arrival of low-cost, sophisticated computers exemplified by the Atari stable.

In addition, MicroLink will provide Interlex users with the bonus of electronic mail, telex and other communications facilities and databases.

Interlex managing director Mike Lane told: "As the trend toward low cost hardware and software has gathered momentum, the traditional dealer network has moved upmarket.

"Consequently the bulk of new business micro users have been left totally unsupported because the High Street and volume sellers supplying them are not geared up for the task. Interlex will fill the vacuum by supplying support at a price the new generation of users can afford.

"Initially this will be provided through a telephone hotline, but we are pushing ahead with plans for an Interlex bulletin board on MicroLink to extend the service to comms users".

Here's your chance to see your name in Atari ST User

FULL and part-time writers are urgently needed for the much-enlarged *Atari ST User*.

If YOU know the Atari ST inside out, can express your ideas on paper - and want to become part of the exciting future that lies ahead for the *Atari ST*, then write now to: The Managing Editor, *Atari ST User*, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

Please include your phone number.

Reader survey T-shirts

TO celebrate the launch of *Atari ST User* as a magazine in its own right Database Publications has decided to double the number of prizes awarded in the recent *Atari User/Atari ST User* reader survey.

The following 25 Atari ST owners have won Atari User T-shirts:

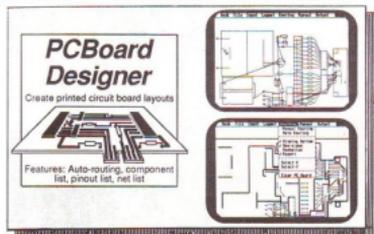
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Atari ST Productivity Software from

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PCBoard Designer

PCBoard Designer is a powerful, interactive computer-aided design tool that automates the layout of printed circuit boards. The remarkable PCBoard Designer drastically cuts the cost, long hours and tedium of producing a working circuit board. PCBoard Designer has a wide range of sophisticated features and remarkable speed found only on systems costing thousands more. Exclusive to PCBoard Designer is its automatic routing capability – all traces are automatically drawn on the screen, and redrawn as you delete, modify your board design. In addition, it has options of 45° or 90° angle traces, different trace widths, routing from pin to pin, BUS, BUS to BUS, as well as two-sided boards.

The rubberbanding feature lets you set the user-defined components during replacement – and you can reposition your components at any time during the design process. PCBoard Designer prints your completed layout to any Epson or Epson-compatible dot matrix printer at 2:1. The high-quality printout is camera-ready for final photo-etching. PCBoard Designer also prints your component layout, and lists every component and connection. Runs on Atari 520S1 or 1040ST computers with monochrome monitor. Epson FX-80 or compatible, Hewlett-Packard plotters, NEC P6/P7 printers, or Toshiba 24-pin printers required for photo-ready traces.

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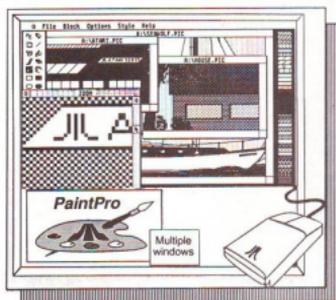
— Randy McSorley

Pacus Report Dec '86

The professional wordprocessing package designed for the ST by professional writers. ST TextPro combines great features with flexibility, speed and easy operation – but at a very reasonable price! ST TextPro offers full-screen editing with mouse or keyboard shortcuts, as well as high-speed input, scrolling and editing. You can create multiple columns of text, and choose up to 160 characters per line. ST TextPro even generates an automatic index and table of contents! Other features include 30 user-defined function keys; flexible printer installation; sideways printing; loading and saving to RS232 port; and much more.

AB 490

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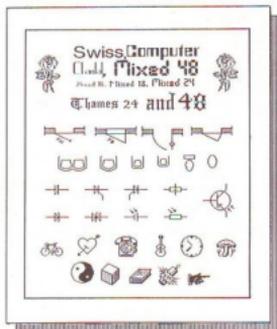


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THE Hanover Show, Europe's largest showcase for the international computer community, is traditionally a major launching pad for Atari. And this year's proved no exception as Mike Cowley reports . . .



From Tramiel with regret . . .

ATARI chairman Jack Tramiel flew in from sunny California to snow-covered Hanover to unveil the company's IBM PC clone - with regret. The reason for his lack of enthusiasm? He insists that the ST is a far superior machine.

"What we are now offering is an inferior product to the ST", he told *Atari ST User*, "and anybody who buys it will be buying the wrong machine. After all, it's old technology".

Yet this was not strictly true as visitors found when they took a close look at the two machines on display.

This soon revealed that at least some of the expertise learned on the ST front had found its way into the Atari PC.

"Just check the wiring inside and you'll see that it's a much better clone than most", said one technical expert.

The Atari PC offers 512k of ram and comes with integral floppy disc drive, serial parallel port, MS Dos 3.2, GWA Basic, Gem, Gem Write, Gem Paint and a mouse.

It has an XT style detachable keyboard, and boasts built-in IBM Enhanced Graphics Adapter compatibility, which is not available in most clones.

The Atari PC's degree of IBM compatibility will also be far higher than its competitor machines, in that it has a switchable processor capable of running

Atari boss unveils his IBM PC clone (right), but says the ST is so much better

at 8MHz, or the 4.77MHz used by the IBM PC.

Provisional prices are \$499 (£399) without monitor and \$699 (£599) with. However there may be some price variation by the time the first machines are scheduled to arrive in the UK this summer.

Yet even while he was announcing the new PC, Jack Tramiel could not avoid revealing his personal distaste at the decision dictated by current market demand.

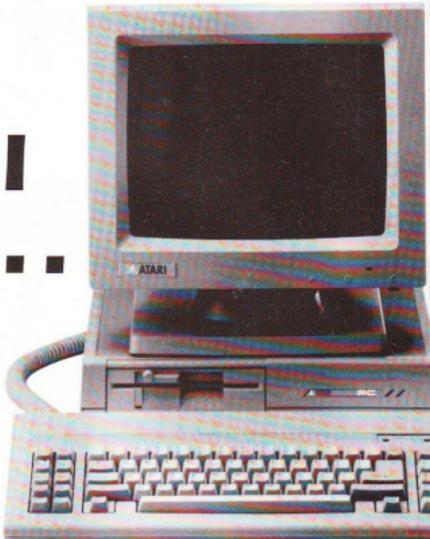
"We are going to provide them because people want them for the moment", he said, "and we give people what they want." But the Atari boss predicts that the booming PC clone market will be short-lived.

"Look at what's happening in Britain", he said. "The youth there don't want to buy PC clones, they want new technology like the ST. And that's where the future lies".

Though not entirely happy with Atari's entry into the IBM PC market, Jack Tramiel was quick to point out that the company still means business.

"If we are going to be in the clone business, then we'll be better, cheaper and sell more than anybody else", he told *Atari ST User*.

"And that's a promise".



Firm finances

ATARI is now in a healthier financial position than Commodore was at any time during its heyday.

That was the message from Jack Tramiel, the man who built Commodore into a billion dollar company and has now dragged Atari off its knees.

"We are not only debt free, having paid everybody off, but we also have \$70 million in the bank", the Atari boss disclosed at the Hanover Show. "At my previous company, I never had so much cash available".

Atari has just announced record corporate results. Sales for the year ended December 31, 1986, were \$238,131,000 against \$141,987,000 for 1985, an increase of 81.8 per cent.

This resulted in a profit of more than \$25 million compared to a loss of in excess of \$14 million for the previous year.

"Our strong performance in 1986 is the result of growing consumer awareness of the value of the ST personal computers", said Atari president Sam Tramiel.

COMPUTER buffs in the UK will get their first opportunity to see the new IBM clone at the forthcoming Atari Computer Show in London.

It will be a feature attraction along with the new Mega STs and the revolutionary laser printer at the Novotel, Hammersmith, April 24 to 26.

Mega drive in summer

THE first wave of the most powerful machines to date from Atari will be on sale in the UK by July. Known as the Mega STs, they made their European debut at the Hanover Show as the Far East manufacturing facility ramped up to meet world-wide demand.

And the new machine (pictured right) is expected to play a key role in Atari's plan to double the ST user base this year.

Such has been the interest generated by news of the first two models – the two megabyte and four megabyte – that Atari predicts that they will soon account for 20 per cent of all ST output.

Apart from bigger memories, the Mega STs will sport detachable keyboards and, most important of all, the revolutionary Blitter chip.

Providing the most stunning of graphics, this chip is eventually to be offered for the 1040 ST as an upgrade



through recognised dealers.

Aimed at the top end of the market – described by Atari boss Jack Tramiel as the power users – the Mega STs will be much sought after in professional applications.

Though a firm price tag has yet to be

A PREDICTION that the new Mega ST workstations will be found in homes throughout Britain in three years time has come from Atari chairman Jack Tramiel.

"Whatever we are selling primarily for business today will be sold for homes in three years time", he said. "Such are the advances in technology".

attached to the Mega STs, it is anticipated that the range will cost between £700 and £1,200.

"The new models are all part of our plan to ensure that the ST becomes the new industry standard", says Atari president Sam Tramiel.

Top of desk tops

ATARI is poised to become the front runner in the multi billion dollar world desktop publishing market. It intends to take over from Apple – currently number one in the field – with a package based on the new two megabyte ST.

For Atari will combine this with its new laser printer – seen for the first time in Europe at Hanover – in a special package costing £2,400.

"We are going to take over from Apple", said Atari president Sam Tramiel.

Despite his optimism, this is not likely to happen overnight for the one stumbling block at the moment lies in software problems.

Once these are overcome though, most observers believe that Atari cannot fail to topple Apple from its number one position.

After all, the new Atari desktop system, while capable of producing almost identical results to its Macintosh based rival, costs just one third of the price.

Race to complete new ST database

A LEADING British business software house worked round the clock to complete a new database for the ST in time for the Hanover Show.

The Atari version of Superbase Personal was not due out until April 1, but the back room boys at Precision Software pulled out all stops so it could be launched in Germany.

"We were well aware that this event has long been regarded as the major European vehicle for Atari", said Nigel Lovett-Turner, Surrey based Precision's sales director. "That's why it was so important for us to have Superbase there".

Precision Software made its name originally in the Commodore market, with sales of more than 100,000 database packages and 350,000 word processing units worldwide.

Superbase Personal for the ST, which costs £99.95, has been designed



Nigel Lovett-Turner... "Fair is a major European vehicle for Atari"

specifically to take advantage of the Gem environment.

It is a powerful database which places no limits on the number of fields or on the size of the record. And as many files as

needed can be opened up to build up a relational report.

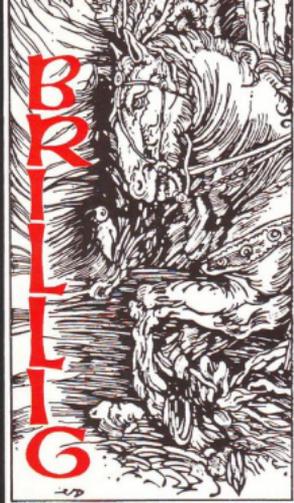
This multi-file database incorporates all the latest user friendly techniques. Data manipulation is achieved by the click of a mouse on video recorder style symbols on screen.

The package has been developed as a "very visual" data management system and offers a special facility for coordinating pictures and text.

Its graphics management capability allows pictures to be retrieved and displayed, and there is even a built-in automatic slide show picture sequence.

Such is the growing importance of Precision Software that the company was represented on not one but four stands at the show.

"We have been at Hanover before, but never in such strength", said Lovett-Turner, "and this reflects the importance we place on the ST market". □



With tongue firmly in cheek...

WELCOME to what I hope will be the first of many meetings of mind and spirit as we delve each month into all things adventurous. And what better way to start than to take a peek at one of Infocom's latest and best ever releases for the ST adventurer.

The cheap liquor was taking its toll and my bodily attributes being no better than the average human's, I was compelled to answer the irresistible call of nature. Looking back, maybe I could have saved myself from the hair-raising events that were to follow if I had stayed put in the Men's Room but then who would have saved Earth from the unspeakable habits of the Leather Goddesses of Phobos?

As it happened, no sooner had I adjusted my dress and stepped back into Joe's Bar than a bunch of Martians jumped me and whisked me off to Phobos, one of the moons of Mars. Seems the Leather Goddesses, an alien race of neo-Amazon warriors, wanted a few human specimens to practice on before turning their naughty attentions to the rest of humanity. Their aim was to turn Earth into a sexual playground of their own making.

And so here I was, caught up in yet another superb Infocom text adventure. Leather Goddesses is a delicious spoof of all those 1930s pulp science fiction stories - you know, the ones with the lurid covers that usually depicted scantily clad females, bronze-muscled males and a seven-headed, multi-tentacled gargoyle, with a flying saucer or two thrown in for good measure.

The game was written by Steve Meretzky, whose earlier Infocom adventures include, among others, the zany Planetfall and the co-authored Hitchhikers' Guide to the Galaxy. Like those, Leather Goddesses is also very funny, but this time the humour is aimed well and truly at adults.

With its tongue planted unerringly in

its cheek, the game offers three levels of playing, tame (yawn), suggestive and lewd. The higher the level, the more risque the text. Bawdy it may be, but certainly no more so than you would expect of typical adult humour seen and heard on TV any night of the week.

For example, if you're not careful, the giant venus fly-trap that devours you "secretes an enzyme which stimulates the pleasure centres of their victims. Hence, you experience multiple orgasms as your flesh is quickly dissolved away. What a way to go".

Once on Phobos, you may well escape the clutches of the aliens and meet up with a friend of the same sex. Together you can explore the planet by means of black circles which will transport you to different regions.

Your chief task is to collect certain components which, when assembled, will form a powerful weapon in your struggle - the super-duper, anti-Leather Goddess attack machine.

You can play the game as a male or female - your gender is determined by which of the two lavatories you visit in Joe's Bar at the start of the game. The sex of at least one other participant in the adventure will depend on which sex you have chosen.

There are many moments of high comedy. What would you do with a frog wearing a crown? You're joking - kiss a repulsive creature with swollen eyes, oozing warts, slimy skin and a grating croak? I should cocoa - and so does the author.

Giving this particular frog a smacker has all the hallmarks of the famous Babel fish problem from Hitchhikers. It even makes a passing reference to it, too.

Others include resisting the promptings of your bladder at the start of the game, peering into the aliens' Examination Room, where another captive is being experimented on, and an encoun-

ter with a loony boffin ("You feel uneasy as the mad scientist locks the door behind you and dissolves the key in a vat of acid").

Ever been turned into a gorilla and imprisoned with another of the opposite sex? You will if the mad professor gets his hands on you. Just wait until you find out what he's got in mind for you.

The ever-immaculate packaging includes a 3D comic and a scratch and sniff card. The game prompts you when to use the latter - not only can you imagine the well-described scene but smell it as well. I must confess to feeling not a little apprehensive when the program first told me to scratch and sniff the card as I was standing in the gen's at the time. But I needn't have worried, it wasn't what I feared (thank goodness) but just the first of many



Amusing anecdotes, computer novels

Activision, which took over Infocom last year, tells me that another superb Infocom spoof should be with us by the time you read this. It is called *Hollywood Hijinx* and is a zany tribute to those old Hollywood B movies.

In the game you have to claim a large inheritance by locating 10 treasures stashed away around the Malibu home of your uncle Buddy Burbank, Hollywood mogul and producer of many outrageous second rate films.

The treasures are actually goofy props from Burbank's old movies, while the house is full of pure Hollywood kitsch and comes with flashy circular bed and Oscar-shaped

bathroom taps.

Amusing anecdotes about your childhood with your wacky uncle, your aunt Hildegarde and cousin Herman and descriptions of the way-out plots and paraphernalia of those unforgettable films add to the entertainment.

Sounds great fun - can't wait to play it. Watch this space for a review.

Activision is also about to release *Portal* which is described as a computer novel. Set in the year 2106, the story concerns your efforts to unravel

the mysteries of a peaceful but deserted world. As you delve into Worldnet databases to examine the records of vanished civilisations you revive the sole survivor of this desolate world, a biological computer named Homer.

The database is so large that the game is being issued on multi-discs, and unlike the more traditional puzzle-solving adventures, *Portal* apparently lets the player dictate his own research and control the experience in an innovative way.

Sounds intriguing, doesn't it? As soon as I get my hands on it, I'll give you more to whet your appetite.

moments of mischief that the program delights in.

In case you're new to Infocom adventures, let me briefly say that they are text only (but with text as lavish, imaginative, intelligent and witty as this, who needs graphics?), respond instantly to your commands, have about the most sophisticated command analyser (parser) on the market and include a massive vocabulary. All of these features make it a sheer joy to play an Infocom adventure.

The program is magnificent. I would not have thought it possible for Infocom to surpass its own very high standards but it has been done with this one. *Leather Goddesses* is achingly funny, marvelously entertaining. As the late Dick Emery would have said, "Oohh, you are awful... but I like you!". Encore!

Weaving a tangled web

Just released for the ST is an adventure from that doyen of the genre, Scott Adams. While not rivalling Infocom for depth, wit or sophistication, Adams' adventures provide an entertaining experience. This one features Spider-Man who, as every fan should know, is one of the many bizarre characters from the famous Marvel comics.

As the Marvel writers' fertile imagination had it, a freelance photographer by the name of Peter Parker was once accidentally bitten by a massively irradiated spider. As a result, the poor chap suddenly found that he could shin up walls, toddle across ceilings, spin webs and had enormous strength and speed.

Parker decided to put his new-found abilities to good use in the fight against crime. Whenever the need arose, he would, like Superman, find a convenient unoccupied phone booth or niche and surreptitiously swap his boring journalist's pin stripe for the outrageous blue and red Spider-Man outfit. Thus clad, he was ready to strike fear into the evil hearts of mankind's foes.

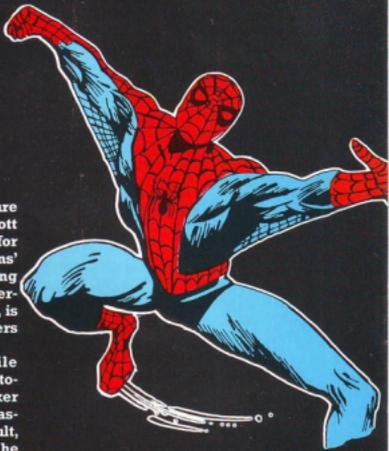
And in this adventure, those foes are even stranger than old Spidy himself. There's *Electro*, who acts like a walking National Grid and Sandman, able to convert his body into a form as hard as sandstone or become as vulnerable as a child's sandcastle.

Then there's *Mysterio*, a master hypnotist and illusionist, *Lizard*, a reptilian

humanoid, *Doctor Octopus*, who has four electronically powered, telescopic tentacles (only half an octopus, really), *Hydro-Man*, who can turn his body into water (one of the original Wets), and *Ringmaster*, showman extraordinaire. As surreal and scurrilous as a crew as ever stalked the screens of an adventure, I'm sure you'll agree.

Spidy has a couple of pals, though. *Madame Web*, a medium, is herself rather arachnoid (if that's the word I want) and spends most of her time meditating in the middle of an orb web. The Chief Examiner (probably Scott Adams himself) is the mysterious overseer who appears from time to time to offer encouragement and advice (usually when you've just been exterminated).

Spider-Man's main objective in this >





◀ adventure is to collect umpteen gems that have been scattered around a skyscraper block where much of the action takes place.

This is a text and graphics adventure. The graphics are not up to the standard of Rainbird's *The Pawn*, but many of the pictures are animated. For example, a pile of sand transmutes into Sandman before your very eyes and elsewhere Spider-Man will pull apart a pair of lift doors while you watch.

The vocabulary is reasonably large (a full list of all words the adventure understands can be found in a Readme file on the disc) and the parser can cope with more than the verb-noun type of input (but really that is all you need in an adventure of this type).

There is no sound – it would have been nice to have had a title tune, at least – and the text descriptions are terse. In Adams' adventures the puzzles are the thing. The pictures can be turned on or

off, or pulled down or up the screen at the touch of a key or the mouse button.

Games can be saved for later restoration and you can print out the script as you go. About the only feature I didn't like was having to say Look for a full description of the current location – the game doesn't give it unless you ask.

I admit to a soft spot for Scott Adams. He was the first to introduce adventures to a wide audience and many of his earliest works including *Adventureland*, *Pirate's Adventure* and *Ghost Town*, are still regarded as classics. As I said earlier, puzzles are the essence of an Adams' adventure and atmosphere, detail and realism take a back seat.

HITCHHIKERS' GUIDE TO THE GALAXY

Beast baffling you?
LAIR OMEM ENOT SDNA SEHT TAKO OL
?EMA NRUC YROF UOYK SATS AEBE HTSE ODYH W
DAED YDAE RLAE RAUO YTAH TMH ECNI VNOC

THE PAWN

Dragon blocking your way?
1. SWOD AHST AKOO L
SEPA HSTA ETIH WENI HS
SEPA HSTA TNIO P
HTRO NOG

Spider-Man has plenty of puzzles, the graphics are fun and the whole game is eminently playable. Although the adventure is not in the same league as any from Infocom or Rainbird, it is certainly unusual and well worth playing. □

If you know of any bugs or mistakes in any ST adventures, or you just want some help with a tough problem, why not write to me at Adventures, Atari ST User, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

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Back-Pack

A cartridge-based pack of general purpose utilities for every ST owner. When plugged into the cartridge port of any ST, all Back-Pack facilities are available whilst using GEM compatible applications and, because it resides in ROM, it occupies no valuable RAM space.

Scientific calculator

More comprehensive than most real calculators - this offers all the usual features such as Sin, Cos, Tan, Log, r, X^Y, X^{1/X}, a memory store, etc. However, it also has programmer's features such as operation in Hex, Binary and Octal, plus logical operations. The result can easily be transferred into the current application.

Price: £49.00
incl.

ROM
CARTRIDGE

Clock and alarms

Analogue/digital clock showing time and date. Two time zones, four separate repeatable alarm settings, etc.

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A comprehensive diary allowing categorised entries on any day of the year. Simple controls make it easy to move forward or backward one day, month, or year.



Note pad

Thirty selectable pages of any information can be stored in the note pad, with cursor controlled editing and the ability to transfer information back to the current application or accessory in use.

DISC

Linked to the memory editor are many other useful features, including: Copy memory block, Print block, Save block, Fill block, Search for any character or string of characters, Memory map - showing a pie chart of memory usage.

Disc editor

Similar to the memory editor described above, this allows any disc sector or complete file to be loaded into free memory and examined/edited. Other related features include: Fast disc formatting, File recovery, Print file contents, Save a file, Join files, Search disc or file for a specified string, Show free disc space, delete file, Show file size, move to and examine any specified track and sector.

Price: £19.55 incl.



Computer Concepts

Typewriter

A simple utility allowing direct output to a printer at any time.

Printer Buffer

Uses memory to 'queue' output for the printer, leaving the computer ready to use, whilst Back-Pack feeds the printer when it is ready.

Address book

A computerised database of names, addresses and telephone numbers, allowing fast 'search' facilities to locate any entry.

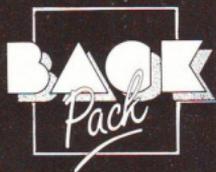
Ramdisc

Uses an area of memory, of specified size, to act as an extremely fast disc drive. A startup disc is easily configured to copy any list of files into the Ramdisc automatically.

Key recorder and editor

This unique facility allows up to ten sequences of key-presses to be stored and assigned individually to specified keys. For example, common command sequences can be typed once and stored, one per function key. When required, pressing the function key will 're-play' the stored sequence. Any sequence can be later edited, deleted, replaced, saved to disc, re-loaded from disc, etc.

Supplied with fully illustrated instruction manual.



ROM
CARTRIDGE

&

DISC



SOFTWARE
FOR
THE
ATARI
ST
(ALL MODELS)

The box that turns an ST into a Mac?



THE ST was originally envisaged as the poor man's Apple Macintosh. Jack Tramiel's Atari set out to create an easy-to-use computer on the lines of the Mac with its windows, icons and mouse in early 1985. It was not without reason that many dubbed the ST the Jackintosh because of its close resemblance to the Mac. The debate continues today - Is the Mac a better buy even though it costs three times as much?

Now via Robtek in England comes the McEmulator from David Small's Data Pacific company in Denver, Colorado. Alternatively called the Mac Emulator or Magic Sac, the McEmulator is a combination of cartridge and software which will turn your ST into a reasonable facsimile of a Mac.

In theory, the McEmulator should give you access to more than 800 extra programs, most of which are extremely well written and are not yet available for the ST. In practice, life isn't so straightforward.

For your £169.95, you are supplied with

*Product: McEmulator
Supplier: Robtek Unit 4, Isleworth Business
Complex, St. Johns Road, Isleworth
Tel: 01 847 4457
Price: £169.95*

*Product: Apple Macintosh roms
Supplier: Eaglesoft, 48 Charles Street,
Cardiff CF1 4EF
Tel: 0222 330286
Price: £29.95*

But Andrew Ralston finds it's not quite as simple as it seems

an empty cartridge, a boot disc, a transfer disc, transfer cable, a battery-backed clock and a 28 page manual.

The two empty sockets in the cartridge must be filled with 64k Mac rom chips, and this is where the first problem arises. The original idea was that the roms would be supplied with the cartridge, but Apple in the States put an understandable stop to that idea by threatening legal action.

Not many companies have the resources to take on Apple with its \$8 billion turnover, so it was decided that purchasers of the McEmulator would have to obtain the roms elsewhere.

Possible sources include your Macintosh and Apple dealers who might have a few spare rom sets. Apple has stated that any dealer supplying roms to non-Apple customers could be in trouble and lose his dealership. Taking the roms from your own Mac would only be feasible if the McEmulator was able to run all Mac programs - something it cannot do at present.

One unfortunate side effect of this shortage of roms is that Robtek has been suggesting that owners get their roms from Apple itself, their Mac or their local dealer, which has caused many problems to owners who haven't been warned

properly by Robtek of the problems.

This will hopefully end now that Robtek has found Eaglesoft of Cardiff who will supply original Apple roms to anyone who buys a McEmulator from Robtek for an additional £29.95.

Installing the roms in the cartridge is further complicated by the fact that a misprint in the manual advises that you insert the two roms in the wrong sockets.

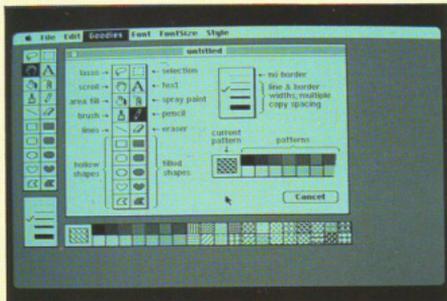
If you manage to overcome this hurdle, you now have a complete McEmulator cartridge, but are still short of some of the software required before you can start using Macintosh software.

Firstly you need a copy of the Macintosh's Finder and System Folder - the equivalent of the ST's Gem routines and disc operating system. The McEmulator works fine with any Finder version up to 4.1. This and all other Mac software which you wish to run must be ported across from a Mac.

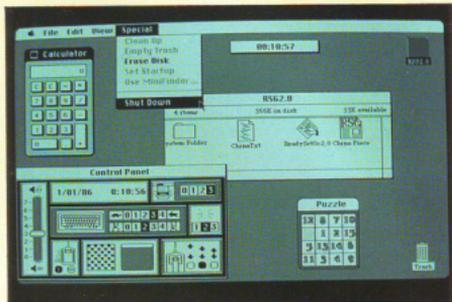
You cannot simply place a Macintosh disc in your ST drive, because the formats of the discs are incompatible. So you must first transfer each program and data disc individually by connecting the Mac and ST together using the supplied cable and running a transfer program on the Mac and a receive program on the ST.

The transfer process is quite straightforward and takes around 12 minutes per disc.

On the Macintosh side, the transfer program is in fact a bit copier which should be able to copy most discs. The data then passes down the supplied cable and the receive program >



The information screen in MacPaint, showing off all its facilities. Notice the blank area to the right and below - some programs such as Ready Set Go (see cover) expand to fill this extra space.



The Macintosh's desktop showing clock, calculator, control panel, puzzles and a directory of the disc.

<reconstructs the data on to the disc in your ST drive.

Programs which are copy protected, using the fact that the Mac drive varies its speed as it reads a disc, simply won't work. Even those protected in other ways are not guaranteed to work.

Data Pacific hopes to have a special Macintosh-compatible drive which will simply plug into the ST and run Macintosh discs without having to go to the trouble of transferring them. This drive will be a separate unit and not an add-on to your existing ST drive and will cost in the region of £200.

When all these problems are overcome, how well does the ST run Mac programs, and are there any benefits?

There are three main benefits of running Macintosh software on your ST. Mac programs run about 20 per cent faster on the ST because of its slightly faster processor and disc drives.

APPLE launched the original Macintosh in 1984 to the sort of rave reviews which have continued during its development from its original 128k version to the present 1Mb machine costing £1,995.

The flagship of the user-friendly micro revolution, and the first machine to offer a WIMP environment, it has sold more than a million units in less than three years.

The machine's innovative software - so easy to use it almost makes manuals redundant - now includes the best packages on the market today.

And worldwide interest in desktop publishing development has further enhanced the machine's reputation.

When the Macintosh Plus arrived last year it offered even more advantages over earlier models - including new features to improve speed, storage and peripheral expandability.

The ST's black and white monitor has a higher resolution than the Mac's and any Mac programs that are written following Apple guidelines can take advantage of this extra screen space. Lastly, you get the chance to have extended use of a Macintosh without having to go to the expense of renting or buying one.

There are five possible configurations for your ST-based Mac - 128k, 256k, 512k, 896k and 512k with motivator. The latter option sets up a ram disc which takes the place of drive A, which McEmulator thinks is the Mac's internal drive.

The more memory that you set aside for the McEmulator, the more chance there is of more programs working correctly. Although Robtek claims that you can use up to 4Mb with the McEmulator, the current version does not support any memory past 896k.

According to the latest list from Data Pacific, the McEmulator will run the programs listed in Figure 1. How well it will run all of them remains to be seen.

There are certain differences between ST and Mac in hardware terms which cause the McEmulator to crash when the Mac would recover gracefully.

When the McEmulator crashes, a diagnostic display appears and you are asked to reboot the system. This means that all of your work is lost, along with any data stored on the motivator ram disc.

Version 3.5 of McEmulator software supports colour monitor and television displays in medium resolution. Because medium resolution is only 200 pixels high, more problems can arise if a Mac program expects a minimum 312 pixels.

David Small has overcome the problem of the smaller screen size by allowing you to scroll the screen to allow you to see the complete display.

Version 4.0, available from the end of March, supports more titles, including some of those in Figure 2 which don't currently work with the McEmulator. As David Small says, the fact that a certain program doesn't work with the McEmulator now doesn't mean that it

won't with a future version.

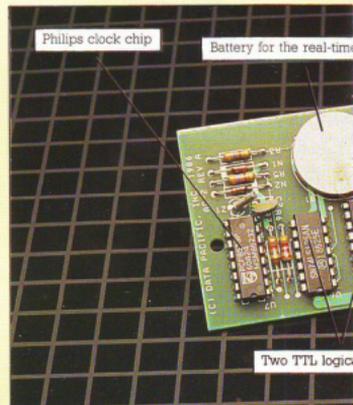
Is the McEmulator worth £169.95? If you are interested in seeing what the Mac can do and whether it truly is better than the ST, then you should consider buying the McEmulator.

If you want to run one or two particular Mac programs, perhaps you should make sure that they run well using the McEmulator.

At present I would hold back on trying to do a lot of serious work on the McEmulator. Data Pacific continues to improve the product, and it is certainly getting better.

In the near future it could certainly start to be a complete Macintosh emulator which will run 80 to 90 per cent of Macintosh software, and will therefore be a viable alternative to buying a complete Macintosh system.

The McEmulator is an innovative and exciting product and we will be keeping you up to date in the pages of *Atari ST User* about future developments. □



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Opening up Gem for the programmer

YOU can't use your ST without using Gem, which is advertised as an easily learnt user interface. However, if you are interested in producing your own programs for the ST, Gem emerges as something far from simple to use.

This is the first of a series of articles which will open up Gem to those who would like to delve into it.

So let's take an overall look at Gem's structure and how it appears to the programmer. Later we'll look in more depth at some of the available facilities.

The ST consists of a Motorola 68000 microprocessor, 512k or 1024k bytes of main memory, a number of specialised chips to deal with input and output, and some more memory known as rom.

The rom, or read-only memory, contains the software retained when the power is switched off. This is the machine's operating system. It provides all the facilities to read discs, run programs and deal with the system's hardware by controlling all the specialised chips. In the ST it also provides the graphical software that deals with drawing windows and controlling the mouse and menus. It is this graphical part that is really Gem.

Underneath Gem is a library of simple routines which provide the facilities, necessary on any computer, known as Gemdos. If you added a simple command line interpreter which could call these routines you would have a system that looked very similar to MS-Dos on an IBM PC. Gem itself sits on top of Gemdos and provides the more sophisticated user interface we are used to.

Ray Jackson begins a new series with an overall look at Gem

Gem is then subdivided into several main sections, seen in Figure 1, which also shows that there are yet more software modules between Gemdos and the hardware. These modules deal with the ST specific hardware.

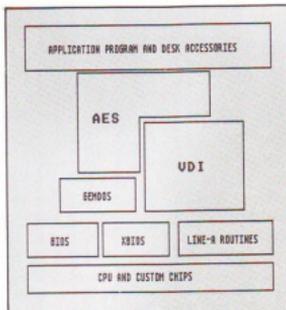


Figure 1. Main sections of Gem

All the other modules, including Gemdos, should be identical for any other 68000 and Gem based computer. The hardware specific modules are the Basic Input/Output System (Bios), which

provides a dozen features which are the minimum required to implement Gemdos, the Extended Bios (Xbios), which adds many more ST-specific functions, and the line-A routines, which provide a set of primitive graphics operations.

It is quite possible to write programs that only use Gemdos facilities and do not take advantage of Gem. Such programs are denoted by the file extenders .TOS or .TTP instead of the .PRG or .APP of a Gem-oriented program.

The additional features offered to the programmer by Gem are split into two main groupings, the Virtual Device Interface (VDI) and the Application Environment Services (AES).

VDI provides a set of graphics operations that should be available on any Gem-based machine, and AES provides facilities to handle the windows, mouse, menus, desk accessories and dialogs.

Let's start our more detailed look at Gem with the AES, which is divided up into a number of libraries for Application, Event, File Selector, Form, Graphics, Menu, Object, Resource, Scrap, Shell and finally the Window Library.

Our first program demonstrates how easy it is to use some of the simpler features provided by Gem. One of the most common features of a Gem program is the alert box.

Alerts are used to convey simple messages to users and to get from them either a simple confirmation that they have read the message or at most one of three selections.

The alert always appears centred on >

```

/* Listing 1 - Alert boxes */

main ()
{
  char message[300];
  int button ;

  appl_init();

  /* Firstly a simple case using a quoted string */
  button = form_alert(1,["Hello World"][Hi]);

  /* For longer messages the string can be built up in a char
  /* array. This example shows buttons overflowing the space
  /* available.
  */
  strcpy(message,["3][A narrow message(may allow parts of)");
  strcat(message,"buttons to be lost");
  strcat(message,[" button 1 | button 2 | button 3"]);

  button = form_alert(2,message);

  /* Text widened to allow space for buttons. No default button */
  strcpy(message,["1][A narrow message(may allow parts of)");
  strcat(message,"buttons to be lost");
  strcat(message, " - so make the message wider");
  strcat(message,[" button 1 | button 2 | button 3"]);

  button = form_alert(0,message);

  appl_exit();
}
  
```

<the screen and can have one, two or three exit buttons which the user can click the mouse on.

The message can consist of up to five lines of up to 40 characters each. Each button also has text in it which most Gem documentation claims can be up to 20 characters. However in practice this would appear to be untrue, as any more than 10 characters cause the button texts to interfere with each other.

Finally you can specify one of three icons to be drawn in the top left corner of the box. These are the note icon, which is an exclamation mark, the wait icon, a question mark, and the stop icon which looks just like a stop sign at a road junction.

A final word of caution on laying out your own alert boxes: Gem sizes the alert box on the basis of the lines of text. If the button texts are long enough to make the full set of buttons wider than the space allowed, then one or more of the buttons will fail to be drawn.

This can be avoided by padding lines of text with spaces to make them wider. This can be seen in the second box drawn in the example listings.

When programming the alert box you can specify that one of the buttons should be the default, to be triggered by pressing the Return key as well as by clicking on it. It is given a thicker border on the screen.

We will use both Computer Concepts' Fast Basic and C for all of our examples. The C compiler is the Megamax version,

but it should be straightforward to run the examples under any C compiler for the ST.

Unfortunately ST Basic cannot easily be used for Gem calls, and although there are techniques to permit such facilities, they are somewhat tedious and result in a large number of cryptic POKE operations.

Listing I is our alert example in C. A quick examination will show you that it is quite short and simple, and secondly we seem to have acquired two extra Gem calls not so far mentioned.

These are taken from the AES application library and are needed to inform AES that our program is running and it would like to use Gem.

We must also tell Gem when we exit that we are about to do so. This allows it to tidy up in preparation for the next program that gets control, usually the desktop.

The two calls used are `app1_init` (application initialise) and `app1_exit` (application exit).

So why should we tell Gem the program is running when it should know anyway? The answer is that Gem doesn't start programs. The desktop can be used to do so, and there are other methods. All, including the desktop, make a `Cemdos` call to run the program.

This means that nobody has told AES that the main application has changed and a new program is running in place of the desktop, or whatever else initiated the program. Since AES passes messages

to applications it needs to know that the new application is present and also needs to know when it exits.

The Fast Basic example in Listing II is a little simpler, as Fast Basic calls `app1_init` when starting up, and it is not necessary to repeat the call.

In both examples the first alert box is specified by a string constant in quotes. This is the easiest way to use alerts and can be very useful for warning messages when debugging a complex program, because the alert does not interfere with any other screen output.

For larger amounts of text, as in the second and third cases in the listings, it becomes necessary to build the format string in stages.

In Fast Basic this is done by adding the strings together: In C it is necessary to use library functions to copy and add strings together. These are standard library functions and they, or their equivalents, should be available in most C compilers.

The second alert box in the listings demonstrates the effect of the button strings being too large for the width of the box. One of the buttons is not drawn at all.

The final example is similar to the second. It has some additional text on the last line of the message which increases the box width and allows the buttons to be drawn correctly. It also doesn't have a default button so the only way to exit from the alert is to use the mouse.

Many programs need to access disc files, and often you need to choose the file yourself. This can be achieved by a prompt for a complete file name including its path or directory. However it is simpler to use the standard Gem file selector box.

Listing III shows the method of calling the file selector from C and Listing IV is the Fast Basic version. The file selector takes two strings as inputs, the initial path and the initial file name. The file name may be an empty string as in the examples, or could specify the name that will be used unless you want to change it.

The path should be initialised to specify at least the disc and a wildcard file name such as `"A:*.*)" or "B:*.TXT"`. These two strings must be large enough to hold a full file name or a deep folder level as they will also be modified by the selector and used to pass your final selections back to the program. In addition the selector returns an indication of whether the OK or Cancel button was used to exit from the selector.

In the case of the C call it is important to note that `fsel_input` takes the actual memory addresses of the string variables as arguments and therefore requires the use of the `&` symbol, unlike the form `alert` call which did not require it.

When an alert box is removed from the screen Gem repairs the part of the

```

REM Listing II - Alert boxes
REM
REM Firstly a simple case using a quoted string.

button% = ALERT("[]Hello World[]Hi",1)

REM
REM For longer messages the string can be built in stages
REM in a string variable.
REM This example shows what happens if there is not enough
REM space for the buttons to be drawn.

message$ = "[3][A narrow message may allow parts of]"
message$ = message$ + "buttons to be lost"
message$ = message$ + "[ button 1 | button 2 | button 3 ]"

button% = ALERT(message$,2)

REM
REM Finally with the text widened to allow the buttons room.
REM No default button in this one.

message$ = "[1][A narrow message may allow parts of]"
message$ = message$ + "buttons to be lost"
message$ = message$ + " - so make the message wider"
message$ = message$ + "[ button 1 | button 2 | button 3 ]"

button% = ALERT(message$,0)

END

```

Listing II: Alert boxes in Fast Basic

```

/* Listing III - File selector */
#include <string.h>

main ()
{
  char path[40]; /* directory path string */
  char name[40]; /* filename string */
  char message[500]; /* message string for alert */
  int button; /* button used to exit fsel */

  appl_init();

  /* Set up initial search path and file name then call fsel_input */

  strcpy(path,"A:*.*");
  strcpy(name,"");
  fsel_input(&path,&name,&button);

  /* Now output the results in an alert box including which button
  /* was used to exit the file selector */

  if (button)
    strcpy(message,"[1][OK selected]");
  else
    strcpy(message,"[3][Cancel selected]");
  strcat(message,"Final path is:");
  strcat(message,path);
  strcat(message,"Filename is:");
  strcat(message,name);
  strcat(message,"[ok]");

  form_alert(1,message);

  appl_exit();
}

```

Listing III: File selector in C

```

REM Listing IV - File selector

path$ = 'A:\*.*.
name$ = ""

REM Save screen contents in area filled by selector box
REM These numbers are for high resolution, y values should
REM be approximately halved for colour modes and x values
REM halved for low resolution

GRAB 155,15,330,315
FSELECT path$,name$,button%

REM Restore saved screen contents. Coordinates must match GRAB
PUT 155,15,3

REM Now output the results in an alert box including which button
REM was used to exit the file selector.

IF (button%) THEN
  message$ = '[1][OK selected]'
ELSE
  message$ = '[3][Cancel selected]'
ENDIF
message$ = message$ + 'Final path is:' + path$
message$ = message$ + 'Filename is:' + name$
message$ = message$ + '[ok]'

button = ALERT(message$,1)

END

```

Listing IV: File selector in Fast Basic

screen which was obscured by it. Unfortunately it does not do this for the file selector. Instead it sends redraw messages for each open window.

In the C example there is nothing on the screen to be overwritten by the selector so it does not appear to be a problem.

In Fast Basic however, the cartridge software will have opened several windows. Fast Basic responds to redraw messages on all except the output window. The output window is considered to be the concern of the programmer to do with as he wishes.

If we do nothing about this problem the file selector form will not be erased from any part of the screen that falls within the output window. The solution is provided by two built in Fast Basic procedures 'GRAB and PUT. GRAB will take a snapshot of a specified area of the screen, which can later be restored by PUT. This can be seen in Listing IV.

In both listings the results from the file selector are output in an alert box. Clearly this would not normally be a particularly sensible use, but we wish to demonstrate that the selector call is working. Before you can use the results from the selector you must perform a little more processing on the strings.

The path string will probably still have some sort of wildcard file name at the end of it. It is necessary to locate the end of the path specification and the start of the wildcard file name.

This is done by searching through from the start to the end of the path string looking for the backslash character. When the last one has been located the remainder of the path string can be discarded and replaced by the file name string. This will give a full file name which can be used in an open file library call.

Finally here are a few tips for using file selector boxes in other people's programs. If you wish to swap the disc in the drive after the selector has been displayed you should click on the title bar above the file list to reread the directory and update the display.

Clicking once on a folder name will display its contents, while clicking on the close box will return to the previous level.

If you type in a new path string you can select a different disc - say a hard disc or ram disc - or change the search specification, such as *.TXT. If you do this it is best to click on the scroll bar beside the file list to update the display.

If you double click on a file name you will exit immediately as if you had clicked on that file and then on the OK button. □

● Next month we will look at the more complex and more flexible facilities provided by Gem to draw dialog boxes customised to suit your application.

EG & C

520 STF SYSTEM BY A.S.&T.

The new 520 STF from ATARI has been an instant hit since its announcement. The design has gained from experience with earlier ST and STM machines and the result is a practical and superbly engineered computer that will easily find its place in your home as well as in your business.

MEMORY:

The basic 520 STF has 192K bytes of ROM, an optional 128K bytes of plug-in ROM cartridges and 512K of RAM. The MEGAPAC 520 STF has bigger memory — a full ONE MEGABYTE of RAM, like the 1040 STF.

DISC DRIVES:

The basic 520 STF has a built-in single-sided disc drive. The MEGAPAC 520-STFM comes with two drives, one internal and one external. The latter is double-sided, offering twice the capacity (720K) of the built-in drive (360K). Your disc bill can be cut by almost half when compared with that of basic 520 STF users.

PROCESSOR:

The Central Processor unit (CPU) is a Motorola 16/32 bit 68000 chip, running at a clock speed of 8 MHz. It is further enhanced by Atari's own custom ICs providing a Direct Memory Access (DMA) channel for fast data transfer with other peripherals such as the ATARI SH204 Winchester drive or the Atari Laser printer (available soon) and a real time clock.

DISPLAY:

The 520 STF can display 40 or 80 column text on any domestic TV or colour monitor such as the Philips CM8533 or the dedicated ATARI SM125 high resolution monochrome monitor. Graphic is 600 x 400 pixels on the SM125, 600 x 200 pixels in colour or 320 x 200 pixels in 16 colours on a colour monitor or TV. The colour palette contains 512 possible colours. Some ATARI software indeed uses the exceptional display hardware to produce stunning graphics with up to 256 colours at once.

FULL ONE YEAR GUARANTEE

MIDI INTERFACE:

The 520 STF has 3 programmable sound voices and a Musical Instrument Digital Interface (MIDI) to allow direct connection to a wide range of musical organs and synthesizers such as the Casio CZ230S.

MOUSE:

The 520 STF has its own dedicated mouse as part of its standard hardware.

PERIPHERAL CONNECTORS:

The 520 STF can be easily expanded by plugging in 'add-ons' through its ports. They will accept printer (Centronics ports, Laser (RS232 port), musical instruments (Midi port), sensors (joystick port) and fast intelligent devices such as network, Winchester, Laser printer etc (SCSI port).

BUILT-IN SOFTWARE IN ROM:

The 520 STF has 192K bytes of permanent software in ROM. This comprises GEMDOS, the disc operating software which is now becoming the dominating standard for 16 bit computers, and GEM, the Graphic Environment which uses pictures and drawing instead of cryptic messages to communicate with the user and the electronic Mouse in place of the keyboard to enter the user's commands.

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The MEGAPAC 520 STF comes with 5 discs, containing an impressive collection of software by any standard:
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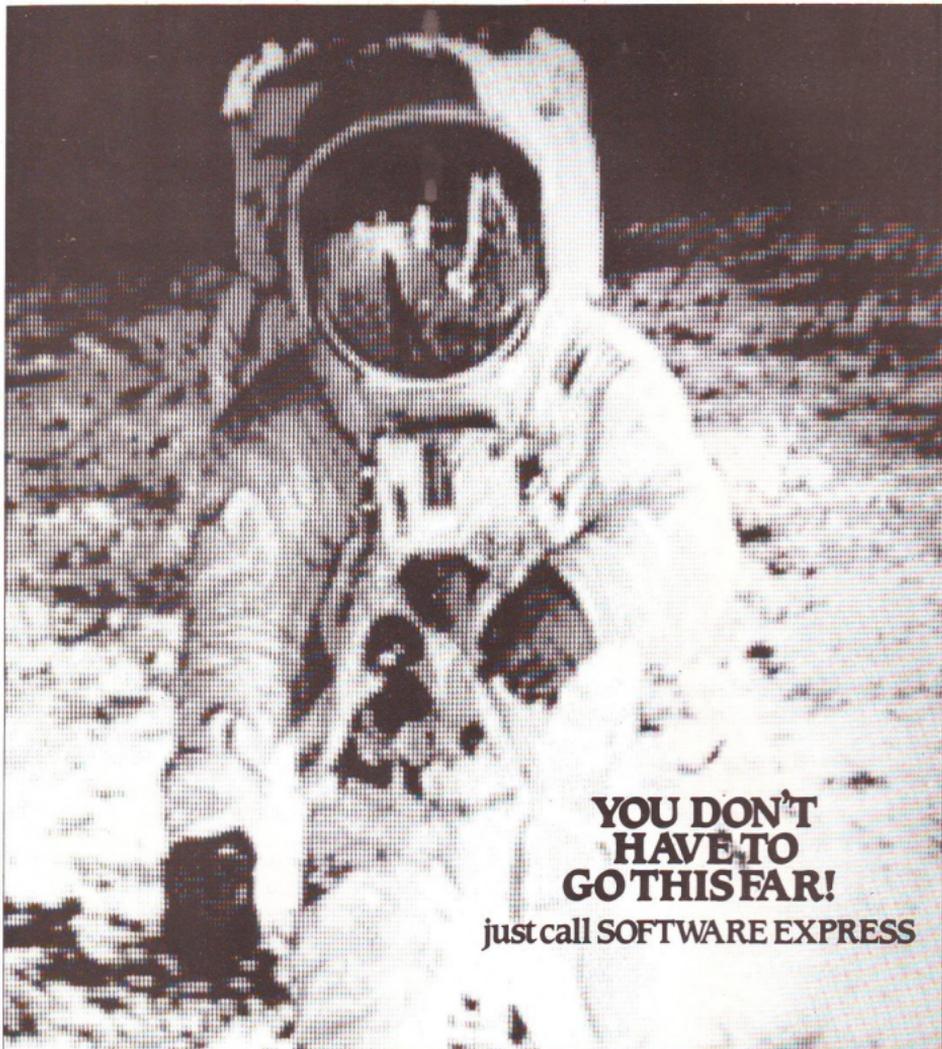
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Setting the standard

**Ian Byfield reviews
the latest low-cost
addition to the
Epson range**

WHEN the new Atari ST owner turns his attention to peripherals, printers will be the first to come to mind so that he can have a paper copy of text and graphics from the screen.

In the world of printers the most successful UK manufacturer is Epson.

Recently reported as having more than 45 per cent of the home printer market, the company now sets the standard for others to follow. Any middle-market machine worth its salt claims to be Epson compatible, and Atari designed the ST with this in mind.

Combining the machine with Epson's popular dot matrix printer, the LX-86, is simple. It is easy to connect and just as easy to drive as the ST's screen dump routines are completely compatible.

The LX-86 shares with its predecessors the RX-80 and LX-80 the doubtful honour of being the least featured and cheapest printers in the range.

They are aimed specifically at the classroom, study or small business.

The LX-86 offers draft text at a speed of 120 cps and near letter quality at 30 cps. There is also a special fast draft print quality at 132 cps offered as standard. This allows the user to prepare documents in almost-finished form and then correct or revise before printing out the final version.

Print can be in any of seven sizes made up from combinations of NLQ, pica, emphasised and elite.

It offers roman for correspondence and pica and elite for drafting.

The usual bold, italic, enlarged, underline and super and subscript print modes are also available.

All the various modes can be selected using control codes sent from the ST.

Each of the LX-86's resident typefonts can also be switched on and off using a combination of the three selectype buttons on the front of the printer.

To aid this typestyle versatility, the LX-86 offers word processing functions - text justification and centring - which are software controlled.

Charts and diagrams can be combined with text to illustrate financial information, for instance, or to enhance sales statistics or even illustrate mathematical concepts.

There is a special buffer to allow the creation of logos, letterheads and sym-



bolis to give correspondence a personal touch.

It is possible to print on computer paper using friction feed mode, but this isn't as accurate as tractor feed and most people will buy one as part of the package.

You should be able to find a dealer who will sell the pair at a discount on the full Epson prices.

Also available is a sheet feeder which takes up to 100 sheets of A4 paper.

Certainly an improvement on hand-feeding paper, it makes the printing of mail shots and letters much easier.

The sheet feeder can be selected using control codes or via one of the DIP

switches located in a small recess at the rear of the machine.

Is it better than Atari's SMM804 which we reviewed in the January issue of *Atari ST User*?

If your main printing needs are for letters and perhaps mail shots, there couldn't really be a better choice than the LX-86. It is certainly well worth the extra cost. □

Product Epson LX-86 Printer
Price £316.25 tractor feed £23 cut sheet
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Supplier Epson UK, 388 High Road,
Wembley, Middlesex HA9 6UH
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Sample output. The LX86 supports a variety of styles

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SOFTWARE
REVIEWS

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Grunting, groaning
and grappling

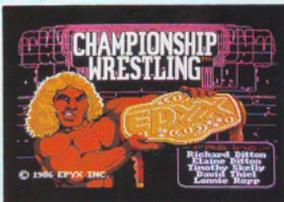
Program: Championship Wrestling
Price: £24.95
Supplier: Epyx c/o US Gold, Units 2/3 Hol-
ford Way, Holford Birmingham B6 7AX
Tel: 021-356 3388

THE Berserker, Howling Manslayer and Prince Vicious are not a pretty sight but they are well-named. As you might expect, these gentlemen are not poets, philosophers or saints – they are mashers, maulers and manglers, all murderously intent on transforming your body into something closely akin to the consistency of a jellyfish.

In short, they are wrestlers, and they all appear in Epyx's new sports simulation, Championship Wrestling.

As grunt, groan, grapple and groin-throw games go, this could very well turn out to be king of the ring. Eight of the biggest, badhat bruisers have been lined up for your entertainment in a no-holds barred wrestling elimination contest.

There are two modes of play. In practice mode you can select your wrestler and his opponent from any of the eight



supplied and proceed to have a trial bout. The computer will control your opponent's moves.

In competition mode the game allows you to choose any of the eight and pit him against the rest in a one to one knockout tournament. Your opponents can either be computer controlled or you can let up to seven other players take over the persona of the remainder of this bone-crushing crew.

Immediately before each bout starts, two large close-ups of the contestants' faces appear above the ring. While the theme tune of each wrestler plays (Prince Vicious' particular air is the Dance of the Sugar Plum Fairy), each animated face scowls and grimaces in a truly horrendous but extremely funny fashion.

The player's view of the ring is from above and across one of the corner posts



Select your wrestler
from one of the
eight supplied

so that the ring appears diamond shaped. Behind the two farthest sides sits an enthusiastic crowd of spectators.

Although they don't move and you can't hear them, they show their unrestrained feelings by hoisting banners bearing such erudite expressions as 'Bum', 'Kill', and 'Get a job'. I would have loved some digitised booing and cheering – the atmosphere would have been even better.

Above the ring a large card continually marks the progress of the bout by displaying the time countdown and the score and strength (the latter by reducing bars) of the two wrestlers. Scoring is based on complexity of moves and fighter's strength.

The animation has been cleverly done and the wrestlers go through a wide variety of movements.

You control your character using a joystick. Because of the number of moves, some have to be executed serially to achieve the desired effect, so it takes some time to master the game.

And even when you are thoroughly familiar with the moves, you've still got to master seven skilled and mean opponents.

Among the moves available to you are bouncing off the ropes, pins, headlocks, punches, kicks (including a useful flying drop kick), drops, suplexes, pile drivers, body slams, throws and airplane spins.

According to the instructions, you can also hurl your opponent out of the ring and into the crowd, although I've not yet survived a bout long enough to achieve this.

Each of the eight supplied wrestlers comes with his own motto, set of skills and speciality move. There's the charming Zeke Weasel ('When ah'm dun, yer face'll be hog slop') whose block and tackle

(punch, hook to the neck and flip) is renowned.

Or how about the vainglorious Prince Vicious ('Ooooh! You look good enough to smash!') who likes nothing better than to put his opponents into an airplane spin followed by an atomic drop. The other wrestlers are K.C. Colossus, Purple Hays, Colonel Rooski, Zantoklaw, The Berserker and Howling Manslayer.

Championship Wrestling is not the easiest of games to play. It's fast, and there are more than 20 moves to learn. You've got to be fairly accurately positioned to



use the serially executed moves properly. Even so, the game is fun and certainly manages to capture all the razzamatazz and ballyhoo of the real thing.

Sound effects are reasonable (the tunes are good but there's not much else) and the overall atmosphere is first rate. This is definitely another top-class sports simulation from Epyx and clearly worth adding to your collection.

Bob Chappell

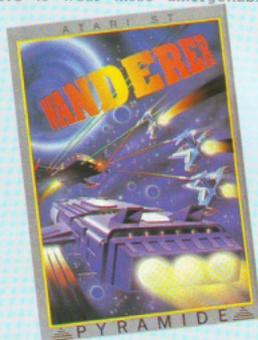
Sound	8
Graphics	9
Playability	8
Value for money	9
Overall	8

Amassing moggies

Program: Wanderer
Price: £24.95
Supplier: Pyramide, c/o Rio Promotions, 28
Waverley Grove, London N3 3PX
Tel: 01-349 2764

WANDERER would be a pretty run-of-the-mill space shoot-em-up were it not for one very unusual feature. The game attempts to use real 3D relief – just like the stuff you used to get in comics and, occasionally, in the cinema.

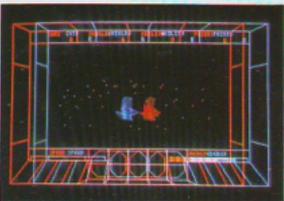
And just like the comics and films, you have to wear those unforgettable



cardboard spectacles with the red and blue lenses. Take the glasses off while playing and all you'll see will be a load of double images. Mind you, even with the glasses on it takes some time for your brain to cotton on to the fact that it's supposed to be converting said twin images into 3D relief.

Perseverance pays off, and given the right conditions (lights off, glasses perched firmly over ears with the lenses close to the eyes, TV contrast up high and, above all, forgetting about trying to see in 3D) then with luck it all comes good.

The game has the screwiest plot ever. In fact, it's so daft I can't help but think that the French designers must have had les tongues firmly in les cheeks when they wrote it.



The preposterous idea you have to swallow is that interplanetary pirates are kidnapping all the moggies in the galaxy (Hahl Catnapping). To apprehend the villains, you will need to collect 8,000 cats of your own or, just as silly, collect a full poker hand of cards, before you will be allowed to confront them.

You amass moggies or gather your poker hand by visiting various parts of the galaxy and shooting down enemy craft (which is really what the game is all about). There are a reasonable number of differently styled alien craft to pot away at – in fact, other than simple steering and pressing the fire button, there's precious little else to do.

The 3D effects are not bad once your eyes and brain have sorted themselves

out. Trouble is, too long a game really makes the old orbs throbb.

A demo mode at the beginning is particularly good and lets you settle yourself in. Sound effects are pretty nifty, too.

If you're looking for something novel and your eyes can take the strain, then Wanderer deserves your attention. Low marks for gameplay but top marks for boldly going where, to my knowledge, only one software house has gone before.

Bob Chappell

Sound	8
Graphics	7
Playability	6
Value for money	6
Overall	6

Search and destroy

Program: Skyfox
Price: £24.95
Supplier: Ariolasoft, 68 Long Acte, Covent
Garden, London WC2E 9JH
Tel: 01-836 3411

SKYFOX is about the best thing Ariolasoft has ever released. Produced by Electronic Arts, this flight-cum-battle simulation puts you in the cockpit of a powerfully-equipped fighter aircraft.

The objective is to seek out and destroy enemy planes and tanks before they destroy you and your installations. The program looked and played good on 8 bit machines. On the ST it is even better.

The game starts with an animated title screen showing Skyfox, your fighter, skimming over the landscape to the accompaniment of a stirring theme tune. Then the screen switches to a neatly-designed and slick-to-use options screen.

By positioning the mouse pointer on a diagram representing the four cursor control keys, you can select from any of 15 scenarios and five skill levels, and elect to use joystick or mouse to control your plane.

The skill levels range from Cadet (the easiest) to Ace of the Base (the toughest). Two tank training scenarios give you an opportunity to hone up on your air-ground combat techniques. Similarly, three plane training scenarios let you test your aerial abilities. Each of the scenarios in these two groups of training modes stretches your skills successively further.

Then there's High and Low training which supplies you with alternate waves of tanks and planes, or you can try combo



training with the waves consisting of both tanks and planes.

When you've had enough practice, you may wish to choose to encounter a Small or Full Invasion. The former challenges you to knock out a mothership which is launching bags of planes and tanks at your fighter, bases and other installations.

The Full Invasion scenario ups the enemy forces to three motherships, while an aptly named Massive Onslaught scenario pits six of these war machines against you.

And if that's not sufficient choice, there's always the Halo, Alamo, Wall, Chess and Cornered scenarios to keep you out of mischief. Each of these is a multiple mothership invasion and each has its own particular shape and pressure.

Once you have decided on your rank and scenario, the base computer appears onscreen, which can also be called up at any time during the game. The display contains a tactical grid map revealing the whereabouts of your installations and enemy vehicles. You can move a cursor

around this map and zoom in on any area for a more detailed view.

You can also move the cursor to any position and then, using the autopilot feature, head directly there. If, when in battle, you select autopilot without calling up the tactical map, the computer will automatically fly you to the nearest enemy-occupied zone.

On request the base computer will also provide you with a report on your installations and a score summary.

A couple of presses of the mouse or joystick button moves you to the launching tube and then sends you hurtling on your way. Skyfox provides two combat arenas: High (between 30,000 and 40,000 feet) and Low (below 1,000 feet). You can move between the two at will by pressing U for up or D for down. Enemy planes only fly in the High arena, and moving up to that zone exacts a heavy cost in fuel.

Your view is straight ahead from Skyfox's impressively instrumented cockpit. Speed can be increased up to 3,000 mph or decreased by a press of any numeric key (0 stops the plane dead). Finer tuning of speed can be accomplished by use of the + and - keys. A quick thrust can be achieved by pressing the spacebar to engage the plane's afterburners.



The impression that the plane really does shift is conveyed by the reasonably smooth and very fast changes of scenery and images (mostly green fields, mountains, blue skies, and the solid tanks, planes and bases) seen through the cockpit window.

The instrumentation contains X and Y coordinate readings, speed, shield, altitude and fuel indicators, radar scanner display (showing your own heading and the position of nearby enemy craft), clock, auto pilot indicator, and counts of heat-seeking and guided missiles.

A heat-seeking missile is armed or disarmed by pressing H and can be fired providing a target is in view through the cockpit window. A guided missile is armed or disarmed by pressing G and

can be fired if a target is on the scanner. Messages are overlaid on the scanner as confirmation of your actions.

Your main weapons are the twin mounted laser cannon which fire responsively and turn any enemy plane or tank into a sudden red puff of flame.

The action is fast and furious and there's lots to think about. At times there seem to be so many enemy craft potting away at you that you wonder how long you can last. Being able to land and recharge fuel and shields at your home base helps.

Of course what Skyfox actually boils down to is another flying and shooting game, but the use of sharp graphics, fast movement and explosive sound effects make this a pretty exciting game.

If you like your games fast, professionally produced, responsive, noisy and action-packed and prefer as wide a variety of options as possible, then Skyfox has got to be right up your alley. You won't be disappointed.

Douglas Wooller

Sound	8
Graphics	9
Playability	9
Value for money	8
Overall	8

Program: *Alternate Reality: The City*
 Price: £19.99
 Supplier: US Gold, Units 2/3, Holford Way,
 Holford, Birmingham B6 7AX.
 Tel: 021-356 3388

THERE have been a number of role-playing fantasy games on the Atari ST and *Alternate Reality* has points in common with many of them - you are wandering around in a maze, gaining and losing various hit points and other character statistics.

The scenario starts where you have been kidnapped by an alien spaceship and transported to the City of Xebec's Demise. I have no idea who Xebec is (or presumably was) but I don't suppose it matters at the moment. It isn't my choice of a holiday resort.

Your kidnappers can't be all bad because you do have adequate clothing, some food and water, and a small amount of money. The amount of cash varies, but it is usually enough for you to buy a compass (easily available at all shops and very useful) and a basic weapon if you bargain with the Smith.

Be careful, however. If you annoy the Smith in your bargaining you can get thrown out and he has a long memory.

You start the game in a "room with only one exit". Through a crackling energy screen you can just see a city. Above the screen are constantly changing numbers in boxes labelled HP, WIS, INT and so

Character building

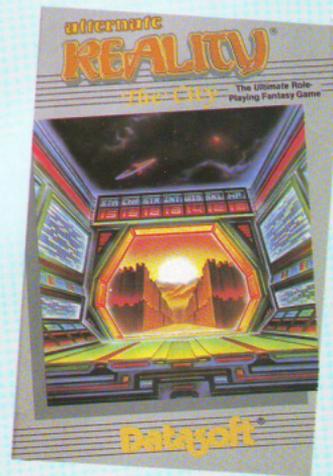
forth. Any key press freezes the numbers and thus determines the vital statistics of your character.

It is possible to influence the starting variables a little. Most of the numbers are changing slowly enough for you to aim for a high figure. Hit points in particular don't tax your reaction time too much, and I've managed up to a 23 - which, since they go as low as 3 and a single blow can cost you 4 points of damage, can alter your chances quite considerably.

Charisma points are harder to be selective with, but it is interesting to aim for a high skill or intelligence level to see where it gets you. Unfortunately I found this usually meant I ended up with a low number of hit points, so it never got me very far.

Your displayed characteristics are not the only variables in the game. If you choose to kill off all the innocent commoners and walk away from nasty muggers your character will be labelled "bad" and this will have consequences for future encounters.

I suspect that other more subtle records of your interactions are also being kept, but Xebec's Demise doesn't have a "freedom of information" arrange-



gement.

The object isn't as straightforward as "kill the princess and rescue the evil sorcerer" because *The City* is only the first of a seven-part series. The ultimate scenario is *Destiny*, where you have to decide whether to return to Earth or take revenge on your kidnappers.

In *City* you are aiming to build up one or more characters in order to take part in the next episodes. Apparently you >

need at least a level 10 character to bother with the second scenario, the Dungeon, and I would guess that you had better buy more suitable clothing before you try the elevated social status of the Palace.

You enter the City with neither experience nor weapons, which makes you fairly vulnerable. Fortunately the other

and can be drawn on a 64 x 64 grid which is included in the manual, with some already mapped out for you.

US Gold sent me the Alternate Reality newsletter, which told me that by squinting at the small display through which you view the City you can just make out vertical lines along the walls, each line corresponding to one square on the grid.

more, and you use the keyboard to respond to the various interactions – however you are prompted on-screen at the appropriate time. This was a welcome change from games which either expect you either to memorise 26 or more different commands, or spend all your time reading the manual.

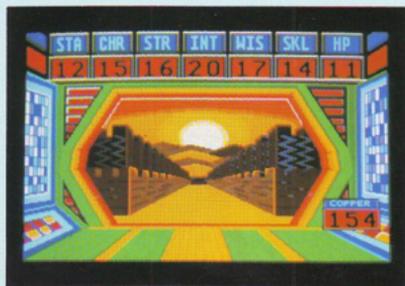
On your travels you are going to meet various lifeforms. In fact, the easiest way to meet them is to just stand still and wait. Your interaction is varied by who sees whom first, who saw whom the quickest, and so on.

"Good" forms are heralded by a lively tune and should be left alone if you want to develop a saintly character. Evil forms are heralded by ominous notes and should be exterminated if possible.

Apart from the advantage to your experience level there is the possibility of finding treasure, particularly if you venture out at night.

The music is described as "original". There are various ways of interpreting that I hated it, especially when I found myself humming it in Sainsbury's. The other shoppers were fortunate that I had not learned the words which appear on-screen in time to the music.

The graphics are quite good, and the scrolling around the 3D maze is smooth.



Determining your characteristics at the Gateway to the City

inhabitants seem similarly incompetent at first.

It is possible to overcome a swordsman wielding a long sword bare-handed, but this is not recommended. Unfortunately their weapons usually vanish on the owner's death, so it's not an easy way to build up an arsenal.

Each blow you land successfully gains you experience points, with an extra bit when your opponent dies. At about 300 points your character progresses to a level 1 status, but you have to double your points to get to each successive level. Level 10 is going to take a lot of points.

You can either work with a temporary character or create a new being which can then be saved. A temp is fine to get around with and get the feel of the city, but you can't keep going indefinitely.

The City is a large maze of streets, alleyways, concealed areas and one-way traps. There are a number of shops, banks, smithies and other vital facilities which you need to be able to find. When night falls you need to know where the nearest inn is, assuming you can afford the board.

The whole City needs to be mapped

Mapping the City is not only important in order to find various establishments while building up your experience. Access to future scenarios is via the City and you need to find the entrances to

Wandering round the city, by clicking on the direction arrows using the mouse



them with it.

Also you need to use City facilities like banks and healers, so the game will not be relegated to the back of the shelf once you've built up your version of Rambo.

Movement is controlled with the

The hi-res screens inside buildings are very detailed and a welcome change after wandering the streets.

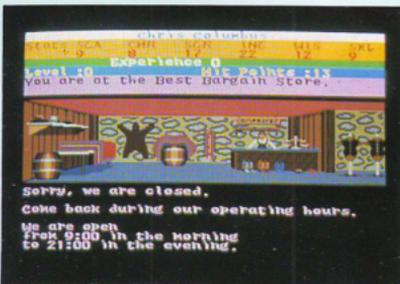
Alternate Reality: The City is a large game. On its own it could keep you playing for some time, but the whole series could be a very long commitment.

It is impossible to mention everything in a review, and like all games it has its good and bad aspects.

On the whole, I enjoyed it and will carry on playing it even after writing the review. I also look forward to having a go at the next episodes.

Maybe by the time they arrive I'll have a strong enough character to play them.

Denise McKnight



Inside one of the shops – however it's closed for business at this time of day

Sound	6
Graphics	8
Playability	8
Value for money	7
Overall	8

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ST Five-liners, Atari ST User, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.



NON-Ascii keys, which include the cursor keys and function keys, cannot normally be used in Atari Basic, but this routine uses the Gem routine Evtnt_Keybd to solve the problem. The Evtnt_Keybd routine waits for a keypress and then returns a 16 bit value in the Cintout variable. The upper 8 bits of this value represent the scan code of the key, while the lower 8 bits give the Ascii code of the key. The program separates the scan and key codes and then prints the results.

- Line Breakdown**
- 10-20 Declares variables for the Gemsys call.
 - 30 Calls Gem Evtnt_Keybd routine. Processes the 16 bit word into scan code and Ascii code.
 - 40 Prints information about the key press.
 - 50 Checks for the Esc key (scan code=1). Exits if Esc is pressed or loops back to line 30.

```

10 FULLW 2 :A=#GB :CONTROL=PEEK(A#) :GLOBAL=PEEK(A#+4) :GINTIN=PEEK(A#+8)
20 GINTOUT=PEEK(A#+12) :ADDRIN=PEEK(A#+16) :ADDRROUT=PEEK(A#+20) :CLEARW 2
30 GEMSYS(20) :K=PEEK(GINTOUT) :SCAN=K AND 65280)/256
40 ASK=K AND 255 : PRINT"KEY "CHR$(ASK),"ASCII "ASK,"SCANCODE "SCAN
50 IF SCAN=1 THEN PRINT "END" :FOR D=0 TO 500 :NEXT D :END ELSE GOTO 30
  
```

SCAN
CODE

from

JOHN GUNDRY

SHAPES

from

KIERON LEECH

THIS five liner plots interesting three dimensional shapes on the screen using Atari Basic. The program is written for the high resolution black and white monitor, but you can run it in low and medium resolutions by changing the values of h and v in line 10.

Other interesting functions can also be plotted by changing the function in line 10. The following give some very interesting results:

```

fnfn(r) = (1-r)**4
fnfn(r) = sin(r*3)
fnfn(r) = cos(18*r)*(r-1)**2
  
```

```

10 def fnfn(r)=(r-1)*sin(r*12):fullw 2:clearw 2:h=615:v=344
20 x1=h/2:x2=x1*x1:y1=v/2:y2=v/4:v1=v/10:for x=0 to x1:x4=**x:my=-y1
30 a=sqr(x2-x4):for i=-a to a to a step v1:r=sqr(x4+i*1):x1=y1/5+fnfn(r)*y2
40 if y>my then my=y:y1-y=b*x1-x:linef b,y,y,b:y=b*x1+x:linef b,y,y,b,y
50 next: next
  
```

Line Breakdown

- 10 Defines the function to be plotted and clears the screen.
- 20 Starts the loop to plot along the x axis.
- 30 Calculates the y coordinates.
- 40 If the z position is greater than the current z position, plot it on both sides of the screen.
- 50 Ends the two loops.

Enter the ST architect

Kev Bulmer uses Cad-3D to help design Europa House, Database's new HQ.

As soon as I heard about Cad-3D I wanted to get my hands on it. Impressive pictures and the fact that it was written by Tom Hudson, author of *Degas* and *Degas Elite*, were all I needed to convince me it was worth buying.

I put it to intensive use over the following months. It is not "a full, three-dimensional modelling station for your ST" as the adverts proclaim. You can do a lot with Cad-3D, but there is a lot more that you can not do.

Any project which involves Cad-3D should be planned very carefully before you even load the program. You have to compromise between the easiest way to make the constituent parts of the model and the way which involves the fewest joins.

Database, publishers of *Atari User* and *Atari ST User*, had commissioned architects to design their new headquarters. To really put the package through its paces I set about creating the new Europa House on the screen, so that the management could view it from different angles and elevations.

The impressive building is composed of two wings of identical length, placed at right angles to each other, and made up of equally-sized modules divided by sculptured pillars. The easiest way to generate these shapes seemed to me to be to extrude the outline of a wing of the building, including the roof and gutter, and add the pillars and other details. Then I would create a duplicate and join the two together.

Joining is an essential and potentially powerful feature of Cad-3D which everyone ends up bashing their head against sooner or later.

Product: Cad-3D

Price: £49.95

Supplier: Electric Software, Unit 8, Cromwell Business Centre, New Road, St Ives, Cambs PE17 4BG

Tel: 0480 66433

Why join anything? There are several reasons. Firstly, the package allows a maximum of 20 individual objects so joining two together allows you to position an extra item in your universe.

Secondly, the routine which calculates how objects interact is at its best with objects which are joined. If two models are placed one in front of the other, then the further of the two can appear through parts of the nearer object if they are not joined.

However it doesn't always work, especially if it's a complex shape. The really bad thing about this is that the attempt to do a join takes literally hours. I pulled the plug on one very complicated join after waiting eight hours for it to happen, but usually it takes around 20 minutes.

Another reason for taking the time to plan your task is that Cad-3D supports two different colours for objects. You can even join differently coloured models and have the relevant parts retain their individual colours after they link up.

If you intend to take advantage of this ability, decide before you start what objects are to be what colour. Although Cad-3D contains a reshade feature which allows you to change the colour and reflectivity of an object, you cannot reshade parts of a joined object.

There are two ways in this utility to manufacture a shape. These are spin and extrude. Spin allows you to draw a segment of an object and the program then rotates it through a selectable number of steps until it is a round object.

This method is perfect for producing bottles, bowls, goblets - in fact anything which is uniformly round. The extrude facility allows you to draw an outline and the program stretches it into a three dimensional shape.

You can call up a grid to help you draw accurately and you can select the number of segments from which the item will be made.

You cannot specify the Z dimension which the program will create for your object. You do this by opening one of the three windows which show elevations of your shape and then stretching it along any axis by a percentage until you have the size you want.

There is also a scale feature with which you can shrink or enlarge any or all



objects to half or double size in one degree increments.

My first step was to rule a grid on to the plans to make it easier to transfer the data into the computer accurately.

I then drew the outline of the building on the extrude grid, chose five segments for the object and asked the computer to manufacture it.

At this point you are presented with a small window which asks you to name your new object and to decide which colour it should be and how much light it will reflect.

I called my object Wing-A, set it to colour one with a brightness of five. I intended to add windows later. These would be in colour two with maximum surface brightness to contrast with the walls. In a few seconds I was looking at my new object.

There are several ways in which you can view an object in Cad-3D - as a wireframe model, with hidden line removal, as a solid object with light and shade or as a solid object with all edges outlined in black.

The best way to develop anything but the simplest of shapes is in wireframe mode - the computer has to perform fewer calculations in order to draw the picture, so it is on the screen far quicker, which speeds up development time.

I was happy with what I had made and dragged a duplicate object out of my Wing-A calling it Wing-B. I was pleasantly surprised to find that the last outline extruded is memorised and is available



The new headquarters of Atari ST User, due for completion at the end of 1987. One view, saved in Degas format, was embellished using Degas Elite

every time you call on the extrude option.

It is easier to drag a copy of an object out of one you have already created than it is to extrude a new copy, but you may want two marginally different objects which is when this feature becomes useful.

I now had the two wings of the building on the screen in front of me. I used the rotate facility, which permits rotations by one degree increments, to turn one of the forms 90 degrees clockwise. Using the mouse I then dragged the newly-oriented object into position next to its partner so that I could join them together.

The join heading covers a multitude of features. You can add objects together, which is self-explanatory. You can subtract one object from another, which is how you would create the dimples on dice. You can "and" objects together.

After doing this you have a new object which consists of the space which both of the shapes had previously shared. Or you can stamp an object onto another. This allows you to create embossed lettering effects.

My first join was to be a subtract. A 45 degree chunk had to be cut off the end of each wing so they they could be stuck together.

I generated a cube and scaled it up, rotated it 45 degrees and tried to subtract it from Wing-A. The dreaded 'This join is too complex' dialog box sprang up. I clicked on its response button, moved the cube one pixel left and tried again and this time it worked.

I followed the same procedure for the other wing, only to be confronted by the same dialog box. With one mighty click I disposed of it and then moved the cube as I had done with the previous join. The dialog box returned with a vengeance. Each failed attempt took two and a half minutes.

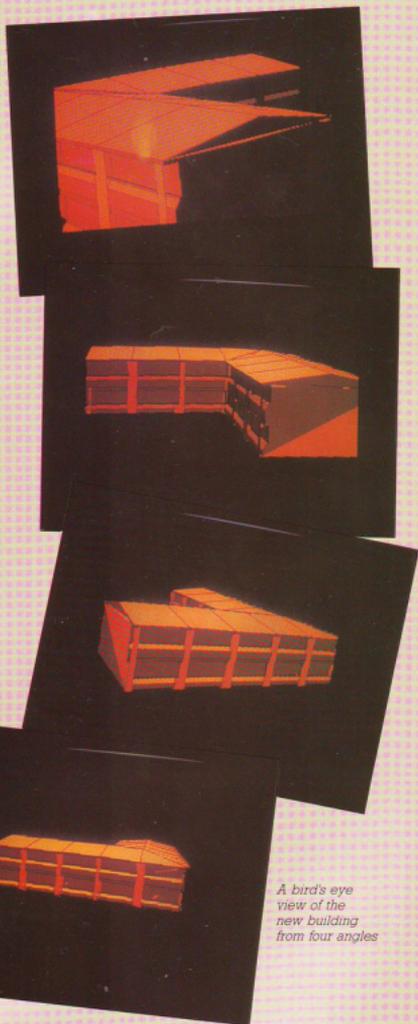
After two hours of re-scaling and re-positioning, the dialog box got the better of me and I surrendered.

When working with the join option in Cad-3D ALWAYS make back-up files. A successful join destroys the two original

shapes. By successful, I mean a join that the computer could actually do, which may not be what you thought you had asked it to do. You can only undo a join by loading your back-up file.

The secret of doing any successful work with this program, I have found, is to always make the window you are working in into a full screen window. The objects are all scaled up and any positioning you do is obviously more accurate.

If possible, use a monochrome monitor as the higher resolution allows for still >



A bird's eye view of the new building from four angles

◀more accurate positioning.

The next day I loaded my backup file and continued on my quest. After 35 minutes I had managed to cut Wing-A at 45 degrees and started on Wing-B.

Nearly four hours later (give or take a join) Wing-B was successfully cut! I now tried to join the wings together. This worked the second time and the join took 20 minutes.

At this point I noticed what could be called a bug in the program. Wing-B was marginally lower than Wing-A but on all of the positioning screens they appeared level.

This problem seems to be a direct result of Cad-3D's friendly user interface. By allowing you to drag things into position with the mouse and making this the only way to move things, accuracy is limited to the width of a pixel.

Since the program is so detailed, its internal representation of things is of a

join the struts to the main building. I carefully positioned them and spent a few hours doing battle with the ferocious dialog box.

Finally, overcome by hunger, I decided that the join really was too complex and that the dialog box had been telling me the truth. The walls, alcoves, pillars and roof were all now in position, although not joined.

All that remained was to cut off the corner of the building where the doorway should be. This cut was going to be a difficult one I knew, because it had to match the details on the side walls. I began by extruding a cuboid and scaling it up larger than the height of the building. The building itself was then positioned slightly overlapping the new block and finally subtracted from it.

Through this method I hoped to achieve a negative mould with which I could make the end face. Unfortunately, I

file which contained a close up view of the doorway.

The final step was to set up the lighting. The implementation of the light feature in this program had me stumped for a few weeks. The trick is to rotate your viewpoint 90 degrees to the left before setting up your lighting. If you do not do this, right on the light menu actually means front, left means back and so on. Unfortunately, while the program accurately shades objects, it does not calculate shadows.

It also contains two animation facilities. Method one consists of turning on Animate on a drop down menu, setting up a camera angle and clicking on Record. When you have finished, a separate program allows you to view your sequence.

The drawback is that unless you save wireframe pictures of simple shapes, each screen takes a long time to draw and the illusion of movement is broken.

The advantage is that it saves information relating to your viewing angle, light sources and viewing mode and takes up considerably less disc space than the next method.

The manual recommends that for fast detailed animation you use the Neo-Chrome slide show program (included on the disc) to load them in off ramdisc or hard disc.

The disadvantage of this method is that you are limited by the memory in your ST or by the cost of a hard disc. The advantage is that it works!

I set up a sequence of views of the finished building and saved them to disc. When viewed from the ramdisc in a 1040ST you zoom along the ground towards the building, take off at the last minute and fly over it before returning to the start position and going through the whole show again.

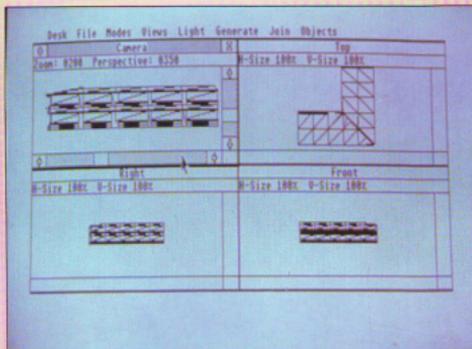
For my purposes, despite its weak points, Cad-3D is excellent, producing accurate three-dimensional pictures which can be saved out in Degas, Neo or Color Object Editor formats.

It proved invaluable in the many meetings about the new building, and as a result a number of modifications were made to the final plans.

I would like to see Tom Hudson return to Cad-3D as he did with Degas and produce a CadElite. It should be able to move objects, perhaps with the cursor keys, by increments of one unit instead of one pixel, generate shapes from contours, mirror an object, and enter x,y,z coordinates for a model.

The speed of the program, or the lack thereof, suggests that it may have been written in C. If this is the case some of the time-critical routines might benefit from being translated into pure machine code.

In summary, there are a lot of applications for which I would recommend Cad-3D. As a graphics tool it is an essential companion to Degas or Degas Elite. It is easy to use, comes with a clear, helpful manual and the price is very reasonable. □



Four views of the building in Cad-3D

higher resolution than the monitor. Any serious CAD package must provide its user with a means of entering and controlling data right down to the smallest unit it understands.

Unfortunately, in any system where the number of pixels does not match the available "universe", the keyboard has to be used to enter data. The same problem obviously occurs horizontally as well as vertically.

Having finally completed the basic shape, I started to generate some of the details. The first things I wanted to add were the pillars which are positioned down each side of the building.

I generated a cube, turned the building off and used the slide boxes on the windows which contained the elevations to distort the cube into a long pillar. I then dragged duplicates out of this shape and positioned them in relation to each other. These shapes were all joined together.

The best sort of join to do in Cad-3D is to join two objects which do not actually touch! The next stage would have been to

uncovered a strange quirk of the program which I had not previously noticed.

It would appear that if you remove part of a joined object from a model, any part of the joined object which is not in contact with the model being worked on will actually be added to it. This meant that my template had an extra bit on it.

I tried several times to cut this extra bit off, but the program kept telling me it was not there.

I eventually decided that the extra bit did not matter, and attempted to cut the template off the building. The data for Europa House was merged in from my backup file and my cutter was turned 45 degrees. This cut also was too complex for Cad-3D.

I spent a number of hours trying to re-scale the cutter and re-position it to achieve a successful cut, but to no avail. I even tried to cut a plain cube from the building, but this was also too complex.

I realised that perhaps the project I was attempting was a little too ambitious for this utility. Instead I quickly created a

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William Grey looks at an add-on that keeps on going – with or without power

HOW many times have you wished that the ST had a battery-backed clock?

Having the ST's clock set at the correct time can be extremely useful, not least because the current time and date is saved when you store a file on disc.

Certainly, setting the clock every time you boot your ST can be extremely annoying.

But now help is at hand from Microdeal in the form of a device which connects a battery to the ST's internal clock circuitry and keeps it running even when your computer is turned off.

The main drawback with previous ST clock cards has been that most of them plug into the cartridge port, thereby making it inaccessible to such cartridges as Computer Concepts' Fast Basic and Back-Pack.

Microdeal's card, on the other hand, simply fits snugly under the keyboard inside your ST.

A detailed manual explains how you open your ST, unplug the keyboard chip from its socket, plug in the Microdeal circuit board and plug the chip into the empty socket on the Microdeal board.

And you don't have to open the shielding inside your ST, because the keyboard chip sits just outside it.

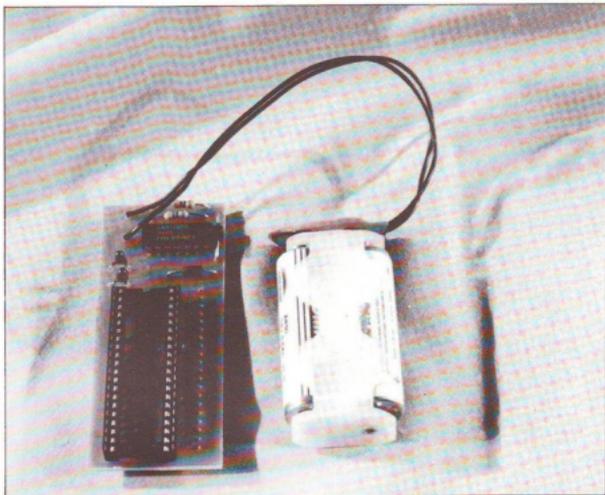
The circuit board holds the keyboard chip, another smaller chip and several components. It is connected to a holder which houses two AA rechargeable batteries. These are recharged every time you use your ST and the charge will keep the clock running for up to a week without you turning your ST on.

There is no soldering involved in the installation – you only need to stick the battery holder on to the ST's shielding with the sticky pad provided.

Fitting couldn't be easier and should take even the most hamfisted beginner no more than half an hour.

The card comes with several utility programs which set the clock initially, and a couple of desk accessories which display the time either in a window or at the top right hand corner of the screen.

The new MegaSTs have a battery-



Battery-backed timekeeping

backed clock as standard and Microdeal's card gives owners of the older machines the chance to have the same capability.

Is it worth £34.95? A clock card tends to be one of those things which you install and then forget about, but which you badly miss when forced to do without.

Try to imagine all those times when you couldn't remember which version of a file

was which because you forgot to set the clock.

Then you'll start to realise that Microdeal's card is worth every penny. □

Product: Microdeal Clock Card

Price: £34.95

Supplier: Microdeal, PO Box 66, St Austell,

Cornwall, PL25 4YB.

Tel: (0726) 68020

PSSSST!

Window clicking

NORMALLY when you have more than one directory window open on the desktop and you want to run a program in an inactive window, you have first to click on the window and then double click on the program.

There is an easier way. You can manipulate files in inactive windows by clicking the left hand mouse button as normal – while also holding down the right hand button.

For example, to delete a file in an inactive window, move the mouse over that file, hold down the right hand mouse button and left-click and drag the file into

the trash can. This is an interesting effect to be built into the Gem desktop. All the rules say that programs shouldn't be written in this way. Obviously the ST's programmers decided to add this helpful feature, but then perhaps felt ashamed at not following the rules and the trick was left undocumented for the ever resourceful ST community to discover.

● If you have any useful tips which you would like to pass on to your fellow ST users, then why not send them to: PSSSST, Atari ST User, 68 Chester Road, Hazel Grove, Stockport.

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In search of a character

ONE problem that affects experienced programmers and rank novices alike is trying to remember character codes.

These are used in many areas of daily computer use from programming to writing printer configuration files. This program has been specially written to solve the problem.

Character Set is a desk accessory which is accessible from the desktop or any other program which supports Gem menus.

When you call it up from the Desk menu a window containing the entire ST character set will be displayed in the centre of the screen.

This window can be moved, covered and closed just like the Atari Control Panel which comes with the ST.

The program makes full use of Gem's window, mouse and event routines. An examination of Listing I should be useful for those of you who want to know how to write such programs in C.

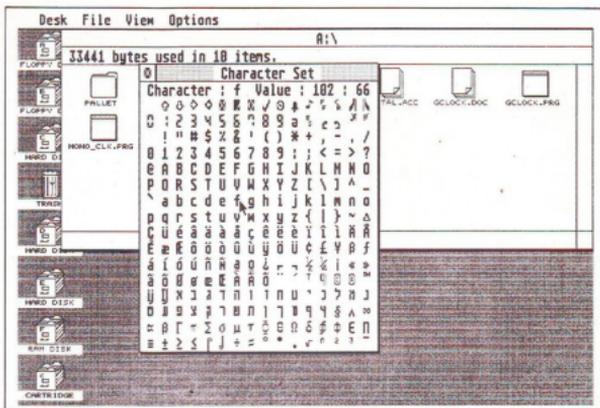
Click the mouse on any character in the display window and its code will be displayed in decimal and hexadecimal at the top of the window.

Listing I is the C source code for the Character Set desk accessory. It was written using the developer's Alycon C, but can be easily adapted for use with the C compilers from Metacomco, Megamax and Mark Williams.

You should link the program with the accessory start object file rather than the normal program start file, because accessories need some extra routines to work correctly.

The link line for the developer's C is:

```
link68 [u] 11.68k=accstart,11,
gens,vdibind,aesbind,genlib,libf
```



The desk accessory in action

By Richard Phillips

Once the program has been compiled and linked you must change its extender from .PRG to .ACC and place it on your boot disc.

Now type in Listing II and run it in Atari Basic. It will create and save the resource file which the Character Set desk accessory uses. You must also copy this on to your boot disc.

Now when you boot up your ST you will find an extra option on the Desk menu, which will start the Character Set desk accessory.

Subroutine breakdown

Main: The program's entry point which installs the desk accessory and starts the main program loop.

Initialise: Installs the desk accessory on to the Desk menu, loads the resource file and initialises the variables.

Do-accessory: Contains the main loop which can never be exited. It waits for an Aes event and then either calls a subroutine which deals with the message event or one which deals with a mouse event.

Do-message: Deals with the various message events.

Do-mouse: Deals with a mouse event.

Listing I

```
/*
Character Set Accessory
By Richard Phillips
*/
/* Include any other files needed */
/* Include the I/O header */
#include <stdio.h>
/* Include the GEM definitions */
#include <gemdefs.h>
/* Include the form structures */
#include <obdefs.h>
/* Include the IBM portable header */
```

```
#include <portab.h>
/* Define a macro for use with the window functions :
It splits a longword address into two word length addresses
for use by the DR window routines in the GEM library
( If used in Lattice C the equations on either side of the
comma must be swapped over ) */
#define ADDR(a) ((long)a)&&0xffff,((long)a)>>16
/* Define the resource set indicies */
/* The form which contains the character set */
#define CHARFORM 0
/* The box which surrounds the character strings */
#define CHARSBBOX 0
/* The box which surrounds the character and it's values , it's a
sub-tree */
#define VALBOX 1
```



```

        chars.on = TRUE; /* Form now on screen */
    }
}
break;
case WM_MOVED: /* Window has been moved */
    if ( buffer[3] == wind_handle ) /* Yes it's me */
    {
        /* Move the window */
        wind.set ( wind_handle,WF_CURRTYWH,buffer[4],
            buffer[5],buffer[6],buffer[7]);
        /* Now reset the forms X and Y coordinates */
        wind.calc ( 1, NAME: 1,CLOSE: 1,MOVE:buffer[4],
            buffer[5],buffer[6],buffer[7],&wbox.g.x,
            &wbox.g.y,&wbox.g.w,&wbox.g.h);
        char.set[CHARSBOX].ob.x = wbox.g.x;
        char.set[CHARSBOX].ob.y = wbox.g.y;
    }
break;
case WM_CLOSE: /* Window has been closed */
    if ( buffer[3] == wind_handle ) /* Yes it's me */
    {
        /* Draw a shrinking box, close the window and
        workstation */
        wind.get ( wind_handle,WF_CURRTYWH,&wbox.g.x,
            &wbox.g.y, &wbox.g.w, &wbox.g.h );
        form.dial ( FWD_SHRINK,0,0,16,16,wbox.g.x,
            wbox.g.y,&wbox.g.w,&wbox.g.h);
        wind.close ( wind_handle );
        wind.delete ( wind_handle );
        w.clsvk ( handle );
        chars.on = FALSE; /* Form isn't on screen */
    }
break;
case WM_REDRAW: /* Window has to be redrawn */
    if ( buffer[3] == wind_handle ) /* Yes it's me */
    {
        /* Get first rectangle from rectangle list */
        wind.get ( wind_handle,WF_FIRSTTYWH,&wbox.g.x,
            &wbox.g.y,&wbox.g.w,&wbox.g.h);
        do
        {
            /* redraw the form */
            objc.draw (char.set,0,0,wbox.g.x,wbox.g.y,
                wbox.g.w,&wbox.g.h);
            /* Get next rectangle from rectangle list */
            wind.get ( wind_handle,WF_NEXTTYWH,&wbox.g.x,
                &wbox.g.y,&wbox.g.w,&wbox.g.h);
            /* If it has no size then finished */
        }
        while ( wbox.g.w && wbox.g.h );
    }
}
}
/* Procedure to deal with an AES mouse button event */
do_mouse ()
{
    int row_selected,selected_char;
    /* Over my window */
    if ( wind.find ( mousex, mousey ) == wind_handle )
    {
        /* Get character row selected */
        row_selected = objc.find ( char.set,0,0,mousex,mousey);
        /* Is it a row of characters */
        if ( row_selected == FIRSTROW && row_selected
            << LASTROW )
        {
            /* Yes it's a row */
            /* Get low order nibble of ASCII character code
            by finding horizontal character offset from
            first character in the selected row */
            selected_char=(mousex - (char.set[FIRSTROW].ob.x +
                char.set[CHARSBOX].ob.x))/2)/char.w;
            /* Add in the high order nibble by multiplying the
            selected row by 16 */
            selected_char = ( row_selected - FIRSTROW ) * 16;
            /* Make various strings reflect character choice */
            char.string[0] = selected_char;

```

```

        sprintf ( dec_string, "%d", selected_char );
        sprintf ( hex_string, "%x", selected_char );
        /* redraw the sub-tree containing the strings */
        objc.draw ( char.set, VALBOX, 1,
            char.set[CHARSBOX].ob.x + char.set[VALBOX].ob.x,
            char.set[CHARSBOX].ob.y + char.set[VALBOX].ob.y,
            char.set[VALBOX].ob.width,
            char.set[VALBOX].ob.height );
    }
}

```

Listing II

```

20 REM *****
21 REM *
30 REM * BASIC program to produce a resource file *
40 REM * for the character set desk accessory *
50 REM *
60 REM *****
70 counter = 1
80 open "R", 1, "chars.rsc", 1
90 field #1, 1 AS filedat$
100 read dat$
110 byte = val ( dat$ )
120 if byte = -1 then goto 180
130 files = chr$( byte )
140 list filedat$ = files
150 put 1, counter
160 counter = counter + 1
170 goto 100
180 close 1
190 end
1000 DATA 0, 1, 2, 72, 2, 72, 2, 72, 2, 72, 2, 72
1010 DATA 2, 72, 0, 36, 2, 72, 2, 72, 4, 36
1020 DATA 0, 24, 0, 1, 0, 0, 0, 0, 0, 0
1030 DATA 0, 0, 0, 0, 4, 148, 67, 184, 97, 114
1040 DATA 97, 99, 116, 101, 114, 32, 58, 32, 0, 88
1050 DATA 0, 86, 97, 108, 117, 101, 32, 58, 32, 0
1060 DATA 57, 57, 57, 0, 32, 58, 32, 0, 102, 102
1070 DATA 0, 32, 32, 1, 32, 2, 32, 1, 32, 4
1080 DATA 32, 5, 32, 6, 32, 7, 32, 8, 32, 9
1090 DATA 32, 10, 32, 11, 32, 12, 32, 13, 32, 14
1100 DATA 32, 15, 0, 16, 32, 17, 32, 18, 32, 19
1110 DATA 32, 20, 32, 21, 32, 22, 32, 23, 32, 24
1120 DATA 32, 25, 32, 26, 32, 27, 32, 28, 32, 29
1130 DATA 32, 30, 32, 31, 0, 32, 32, 33, 32, 34
1140 DATA 32, 35, 32, 36, 32, 37, 32, 38, 32, 39
1150 DATA 32, 40, 32, 41, 32, 42, 32, 43, 32, 44
1160 DATA 32, 45, 32, 46, 32, 47, 0, 48, 32, 49
1170 DATA 32, 50, 32, 51, 32, 52, 32, 53, 32, 54
1180 DATA 32, 55, 32, 56, 32, 57, 32, 58, 32, 59
1190 DATA 32, 60, 32, 61, 32, 62, 32, 63, 0, 64
1200 DATA 32, 65, 32, 66, 32, 67, 32, 68, 32, 69
1210 DATA 32, 70, 32, 71, 32, 72, 32, 73, 32, 74
1220 DATA 32, 75, 32, 76, 32, 77, 32, 78, 32, 79
1230 DATA 0, 80, 32, 81, 32, 82, 32, 83, 32, 84
1240 DATA 32, 85, 32, 86, 32, 87, 32, 88, 32, 89
1250 DATA 32, 90, 32, 91, 32, 92, 32, 93, 32, 94
1260 DATA 32, 95, 0, 96, 32, 97, 32, 98, 32, 99
1270 DATA 32, 100, 32, 101, 32, 102, 32, 103, 32, 104
1280 DATA 32, 105, 32, 106, 32, 107, 32, 108, 32, 109
1290 DATA 32, 110, 32, 111, 0, 112, 32, 113, 32, 114
1300 DATA 32, 115, 32, 116, 32, 117, 32, 118, 32, 119
1310 DATA 32, 120, 32, 121, 32, 122, 32, 123, 32, 124
1320 DATA 32, 125, 32, 126, 32, 127, 0, 128, 32, 129
1330 DATA 32, 130, 32, 131, 32, 132, 32, 133, 32, 134
1340 DATA 32, 135, 32, 136, 32, 137, 32, 138, 32, 139
1350 DATA 32, 140, 32, 141, 32, 142, 32, 143, 0, 144
1360 DATA 32, 145, 32, 146, 32, 147, 32, 148, 32, 149
1370 DATA 32, 150, 32, 151, 32, 152, 32, 153, 32, 154
1380 DATA 32, 155, 32, 156, 32, 157, 32, 158, 32, 159
1390 DATA 0, 160, 32, 161, 32, 162, 32, 163, 32, 164
1400 DATA 32, 165, 32, 166, 32, 167, 32, 168, 32, 169
1410 DATA 32, 170, 32, 171, 32, 172, 32, 173, 32, 174
1420 DATA 32, 175, 0, 176, 32, 177, 32, 178, 32, 179
1430 DATA 32, 180, 32, 181, 32, 182, 32, 183, 32, 184
1440 DATA 32, 185, 32, 186, 32, 187, 32, 188, 32, 189
1450 DATA 32, 190, 32, 191, 0, 192, 32, 193, 32, 194
1460 DATA 32, 195, 32, 196, 32, 197, 32, 198, 32, 199

```

1470 DATA 32, 200, 32, 201, 32, 202, 32, 203, 32, 204
 1480 DATA 32, 205, 32, 206, 32, 207, 0, 208, 32, 209
 1490 DATA 32, 210, 32, 211, 32, 212, 32, 213, 32, 214
 1500 DATA 32, 215, 32, 216, 32, 217, 32, 218, 32, 219
 1510 DATA 32, 220, 32, 221, 32, 222, 32, 223, 0, 224
 1520 DATA 32, 225, 32, 226, 32, 227, 32, 228, 32, 229
 1530 DATA 32, 230, 32, 231, 32, 232, 32, 233, 32, 234
 1540 DATA 32, 235, 32, 236, 32, 237, 32, 238, 32, 239
 1550 DATA 0, 240, 32, 241, 32, 242, 32, 243, 32, 244
 1560 DATA 32, 245, 32, 246, 32, 247, 32, 248, 32, 249
 1570 DATA 32, 250, 32, 251, 32, 252, 32, 253, 32, 254
 1580 DATA 32, 255, 0, 255, 255, 255, 0, 1, 0, 23
 1590 DATA 0, 0, 0, 0, 0, 0, 0, 17, 240
 1600 DATA 0, 0, 0, 0, 33, 0, 17, 0, 0
 1610 DATA 0, 2, 0, 0, 20, 0, 0, 0, 0
 1620 DATA 0, 0, 17, 112, 0, 0, 0, 0, 33
 1630 DATA 0, 1, 0, 3, 255, 255, 255, 255, 0, 28
 1640 DATA 0, 0, 0, 0, 0, 0, 36, 0, 1
 1650 DATA 0, 0, 0, 12, 0, 1, 0, 4, 255, 255
 1660 DATA 255, 255, 0, 28, 0, 0, 0, 0, 0
 1670 DATA 0, 49, 0, 13, 0, 0, 0, 1, 0, 1
 1680 DATA 0, 5, 255, 255, 255, 255, 0, 28, 0, 0
 1690 DATA 0, 0, 0, 0, 51, 0, 16, 0, 0
 1700 DATA 0, 8, 0, 1, 0, 6, 255, 255, 255, 255
 1710 DATA 0, 28, 0, 0, 0, 0, 0, 0, 60
 1720 DATA 0, 24, 0, 0, 3, 0, 1, 0, 7
 1730 DATA 255, 255, 255, 255, 0, 28, 0, 0, 0
 1740 DATA 0, 0, 64, 0, 27, 0, 0, 0, 3
 1750 DATA 0, 1, 0, 1, 255, 255, 255, 255, 0, 28
 1760 DATA 0, 0, 0, 0, 0, 0, 60, 0, 30
 1770 DATA 0, 0, 2, 0, 1, 0, 9, 255, 255
 1780 DATA 255, 255, 0, 28, 0, 0, 0, 0, 0
 1790 DATA 0, 71, 0, 1, 0, 1, 0, 31, 0, 1
 1800 DATA 0, 10, 255, 255, 255, 255, 0, 28, 0, 0
 1810 DATA 0, 0, 0, 0, 0, 103, 0, 1, 0, 2

1820 DATA 0, 31, 0, 0, 11, 255, 255, 255, 255
 1830 DATA 0, 28, 0, 0, 0, 0, 0, 0, 135
 1840 DATA 0, 1, 0, 3, 0, 31, 0, 1, 0, 12
 1850 DATA 255, 255, 255, 255, 0, 28, 0, 0, 0
 1860 DATA 0, 0, 167, 0, 1, 0, 4, 0, 31
 1870 DATA 0, 1, 0, 13, 255, 255, 255, 255, 0, 28
 1880 DATA 0, 0, 0, 0, 0, 0, 199, 0, 1
 1890 DATA 0, 5, 0, 31, 0, 1, 0, 14, 255, 255
 1900 DATA 255, 255, 0, 28, 0, 0, 0, 0, 0
 1910 DATA 0, 251, 0, 1, 0, 6, 0, 31, 0, 1
 1920 DATA 0, 15, 255, 255, 255, 255, 0, 28, 0, 0
 1930 DATA 0, 0, 1, 0, 7, 0, 1, 0, 7
 1940 DATA 0, 31, 0, 1, 0, 16, 255, 255, 255, 255
 1950 DATA 0, 28, 0, 0, 0, 0, 0, 0, 1, 39
 1960 DATA 0, 1, 0, 8, 0, 31, 0, 1, 0, 17
 1970 DATA 255, 255, 255, 255, 0, 28, 0, 0, 0
 1980 DATA 0, 1, 71, 0, 0, 0, 0, 0, 31
 1990 DATA 0, 1, 0, 18, 255, 255, 255, 255, 0, 28
 2000 DATA 0, 0, 0, 0, 0, 1, 103, 0, 1
 2010 DATA 0, 10, 0, 31, 0, 1, 0, 19, 255, 255
 2020 DATA 255, 255, 0, 28, 0, 0, 0, 0, 0
 2030 DATA 0, 135, 0, 1, 0, 11, 0, 31, 0, 1
 2040 DATA 0, 28, 255, 255, 255, 255, 0, 28, 0, 0
 2050 DATA 0, 0, 0, 0, 1, 167, 0, 1, 0, 12
 2060 DATA 0, 31, 0, 1, 0, 21, 255, 255, 255, 255
 2070 DATA 0, 28, 0, 0, 0, 0, 0, 0, 1, 199
 2080 DATA 0, 1, 0, 13, 0, 31, 0, 1, 0, 22
 2090 DATA 255, 255, 255, 255, 0, 28, 0, 0, 0
 2100 DATA 0, 1, 0, 231, 0, 1, 0, 14, 0, 31
 2110 DATA 0, 1, 0, 25, 255, 255, 255, 255, 0, 28
 2120 DATA 0, 0, 0, 0, 0, 0, 2, 7, 0, 1
 2130 DATA 0, 15, 0, 31, 0, 1, 0, 0, 255, 255
 2140 DATA 255, 255, 0, 28, 32, 0, 0, 0, 0
 2150 DATA 2, 39, 0, 1, 0, 16, 0, 31, 0, 1
 2160 DATA 0, 0, 2, 72, -1

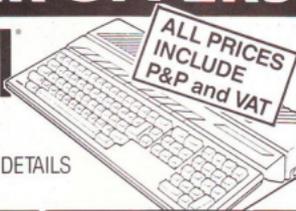
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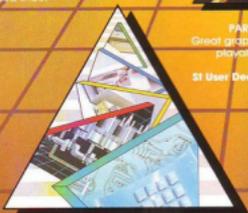
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F A S T ST
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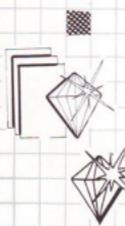
FAST BASIC features:



Speed
One of the fastest BASICs available for any Micro. Programs can run many times faster than older more traditional BASICs. For example floating point operation can be 10 times faster than BBC BASIC



ROM Cartridge
The FAST BASIC interpreter is large and very comprehensive without occupying any RAM. It also starts up instantly since there is no loading from disc.



GEM editor
Probably the best editor available for any language. This fast scrolling GEM based editor works within sizable windows. Features such as mouse selection of regions which can then be cut, copied, pasted, printed, or moved to the clipboard etc. Up to 10 programs can be edited each with its own window. Selectable text size.



GEM based
The whole FAST BASIC environment is GEM based, using pull down menus, windows and icons in the standard GEM way. This ensures that using FAST BASIC is intuitively simple to use

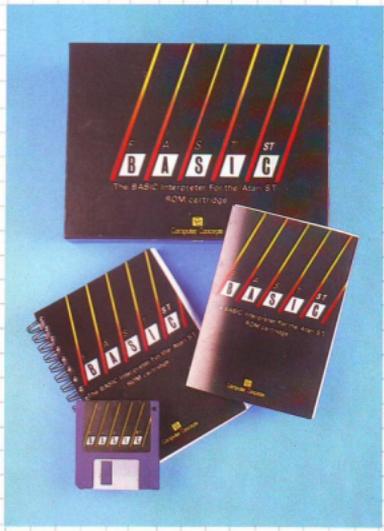


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Allows 68000 assembly language to be mixed with BASIC. Not only does this allow speed critical routines to be written in assembler, but enables it to be used as a complete assembly language development system. Assembles at over 50,000 lines per minute making it the fastest available assembler.

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Review

"The Fast BASIC package provides a complete system for the home programmer; the language is beautifully structured."

"The cartridge spans the gap between high level and low level programming languages and combines some excellent high level structures...It seems to have the advantages of languages like C and Pascal, without the restrictions."

"Bear in mind the fact that the cheapest assembler for the ST costs £39.95, this can only leave you to conclude that Fast BASIC really is phenomenal value for money."

ST User magazine



Debugging

A unique variable tracking facility allows constant monitoring of variable values. In addition, a program tracking feature moves the cursor through the BASIC program as it executes.

/BASIC/

Modern structured BASIC

Based on BBC BASIC, but with extensions from languages such as Pascal and C.

CASE..ENDCASE and multi-line IF..THEN..ELSE, named procedures and functions, WHILE..ENDWHILE and REPEAT..UNTIL

Run time disc

This allows Fast BASIC programs to be run without the cartridge being present. Providing many of the advantages a compiler, this creates .PRG programs that can be double-clicked started from the desk-top like normal application programs. These programs can be given to others (or sold) and will run on STs with or without the cartridge being present.



ST features

Written specifically for the ST, FAST BASIC allows easy access to virtually all GEM and operating system features. For example a huge range of graphics commands are provided. It is also possible to write programs, using GEM, that present the user with a standard GEM interface with sizeable windows, pull down menus etc. Examples are included.

Example disc

This includes a range of demo programs including one using GEM with sizeable windows, pull down menus etc. The disc also includes a speech synthesizer machine code module that, when loaded, allows Fast BASIC programs to speak.



Documentation

A 400 page spiral bound manual details every keyword, and includes sections on the assembler, the editor, and using GEM from BASIC. A wipe clean quick reference card is also supplied.



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The following table compares some of the features of FAST BASIC and the German produced GFA Basic.

Feature	GFA Basic	Fast BASIC
Amount of RAM occupied by interpreter	55K	None
Size of BASIC interpreter	55K	128K
Multiple programs at once	✗	✓
Supports GEM desk accessories	✗	✓
Built in 68000 assembler	✗	✓
Start-up time	10 sec	Instant
Manual	300 page	400 page
Quick reference card	✗	✓
GEM examples	✗	✓
Speech synthesizer	✗	✓
Maths precision (No. of digits)	11	7 or 15
Integer size	16 bits	8, 16 or 32 bits
GEM based editor	✗	✓
Mouse controlled cut/copy/paste	✗	✓
Variable tracking	✗	✓
Program cursor tracking	✗	✓
Number of keywords	220	380
Named multi-line functions	✗	✓
CASE/SWITCH construct	✗	✓
Package includes	1 disc Manual	2 discs Manual Quick ref. card ROM cartridge



Run-time disc
Now supplied free of charge with all packages.



Don't miss this issue!

Anyone interested in the ever changing world of Atari computers should certainly not miss the April issue of *Atari User*. Now separated from its ST fledgling, it concentrates solely on the 8 bit range – the 400/400 series and 800XL and 103XE.

There's lots of up-to-the-minute features and software reviews, plus some exciting news from the Hanover Fair.

Also featured in this new bumper sized issue:

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Design your own printer driver

TO use different printers with either 1st Word or 1st Word Plus on the Atari ST requires the design of separate printer drivers which will allow the word processor to print documents properly and to the best effect using all your printer's capabilities.

After you have designed such a driver it must be installed so that the word processor is able to recognise it. I'll show you how to design your own drivers and install them, taking as an example the Brother HR15 printer, although the techniques used will be same for all printers.

It must be said that printer manuals are normally in a league by themselves in terms of user-unfriendliness, and there seems to have been a determined effort to ensure that printer codes are not 100 per cent compatible with each other. Consequently this article by necessity is full of detailed figures, codes, and hex explanations.

Once you have loaded 1st Word, open up the printer folder and you will see a number of files with HEX extenders. These are the raw data files which you can edit to fit your particular printer.

It is usually best to select the ASCIIHEX driver when preparing your own, as this is based on a standard minimum specification, which can be modified for individual printers.

When this file has been loaded you will see that it breaks down into different sections, preceded by a title line. Modify this for your new driver. The first main sec-

Andrew Ralston tells you how to get 1st Word to handle its printers

tion, Miscellaneous Configurable Variables, is shown in Figure 1.

The setting of the first parameter will determine whether the next four are ignored or not. For the Brother HR15 and some other daisywheel printers you would set:

0,0,0,0,1

Assuming that you want to pause between pages. Printing justified text in bold with the Brother HR15 can give a very uneven result. This is because the HR15 prints in 1/180 inch increments, whereas it receives commands in 1/120 inch increments, so it is constantly rounding up or down.

To solve this problem, the first par-

ameter is set to 0, pretending that the Brother is a dot matrix machine. This causes 1st Word to send the bold command straight to the printer with no horizontal offset, and the printer itself does the necessary carriage shifts.

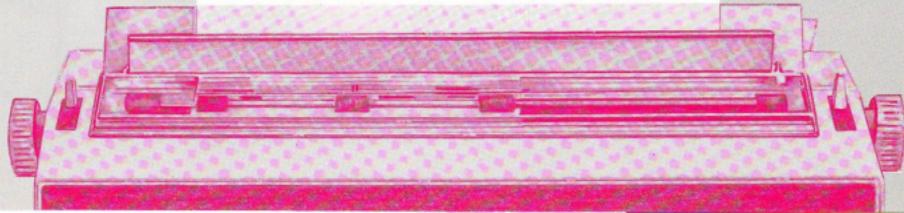
However this can have certain implications which I shall discuss later. For a more normal daisywheel printer you would set the parameters 1, C, 8, 30, 1, 1 given in the example.

The next set of figures in the driver file is concerned with the various printer characteristics, for example underlining. For these you will have to refer to your printer manual to obtain the correct codes. They have to be entered as hex values - normally supplied in the manual. Hex is a numbering system based on 16, running from 0 to 9 then A to F, thus the normal decimal value of 13 has a hex value of D.

The value 27 (hex 1B) is used a lot because it is the Escape character and is a means whereby printer manufacturers can provide a great number of codes by >

Number	Description	Example and details
1	Printer type	1 1=daisywheel, 0=dot matrix (N.B. if zero, rest of values are zero)
2	Character width	C (Hex) = 12/120 = 10 characters per inch
3	Line height	8 (Hex) = 8/48 units = 8 lines per inch
4	Aprox. middle of Carriage after FF	30 Centre of carriage after form feed
5	Carriage shift for bold overstrike	1 Backspace amount of bold effect
6	Pause between pages?	1 1= sheet feed, 0=continuous

Figure 1
Miscellaneous configurable variables



< sending Esc as the first control code.

The situation is further complicated by the fact that some manuals give their codes in terms of Ascii values. Every key on the computer has an Ascii value, in which the letter A is 65 and its lower case version is 97. Translated into hex A is therefore 41, and a is 61.

Digits have Ascii codes as well. For example the digit 5 is Ascii value 53 and hex value 35. Fortunately most of the comparison chart so you can work out what the appropriate code should be.

Figure II shows a part of this sequence, set up for a Brother HR15. It is important that each line starts with a value greater than the previous line - so make sure that line 6 is before line 7. Any line that starts with a * is simply ignored by 1st Word.

You will note that I have set the near letter quality (NLQ) codes, even though these aren't available on the Brother. This is simply to show how they are set for those of you who own a dot matrix printer which supports NLQ.

Line 1 determines what will happen when your printer reaches the end of a line. If you have the DIP switches on your printer set to give a line feed (Hex value A) automatically then you would only have:

1, D

D being the Hex value of the Return command. However if you have not set the DIP switch you must use:

1, D, A

otherwise all your text will be printed on one line. The converse is true, namely that if you have your DIP switch set and use:

1, D, A

then you will get all your documents double spaced, with blank lines between each line of print.

Lines 2 and 3 control whether the printer will print bi-directionally, which is faster than simply printing in one direction. Looking in the Brother manual revealed the forward code as Esc+5. This translates into the Escape Ascii character mentioned earlier as having an Ascii value of 27 (hex 1B), and the digit 5 - Ascii value 53 (hex 35). Thus the line is entered as:

2, 1B, 35.

The reverse print is Esc+6 and therefore the line is:

3, 1B, 36.

The only other lines that may need explaining are the final two in this section. Line 21 sends the codes to reset the printer completely, given in the manual as Esc+Carriage Return+P, hence the code:

21, 1B, 0D, 50

with 50 being the hex value of P. The final line is a 0, known as the termination byte, to tell the printer installation routine that it has reached the end of this section.

The final section, Figure III, concerns the translation table. Unfortunately there is no standard for how keyboards symbols are to be interpreted by different printers. The most famous problem involves the hash (#) which can be printed out as many different symbols, including the pound sign (£). It is extremely confusing to see one symbol on the keyboard and screen, and then have it printed out as something completely different. Several factors control what happens.

- The key you select.
- The code this sends to your printer.
- How your dot matrix printer's DIP switches are set.
- If you have a daisywheel printer, what daisywheel is in use.

No wonder that many people give up and simply correct the problem letters with a ball point pen!

Once again, a Brother printer will be used as an example, because it uses the Diablo standard followed by many manufacturers. My wheel is the UK Ascii type, and the chart accompanying it showed

that it has both a # and a £ symbol. So far so good, because the Atari keyboard also has both symbols (some computers don't).

The troublesome Ascii value is 35 (hex 23), because if the Brother receives this value with the UK Ascii daisy, it prints the pound sign. The hash is also assigned the value 35 in American Ascii which the ST uses. However there is an extra Brother printer code, namely:

1B, 59

which will give the correct hash sign. Thus in the translation table the only changes made were firstly to line 23, (added after line 19 because in my ASCII.HEX file there were no lines 20 to 22). It became:

23, 1B, 59

and secondly to line 9C which should read:

9C, 23

I didn't make any other changes, because the other symbols were not important to me. However those who require, for example, accented characters can send codes for them, causing the printer to backspace and overprint (assuming your printer is capable of doing this).

Finally select the Save As option and give it a suitable filename, ending with a .HEX extender and then quit 1st Word.

You must now install this as a printer driver, and here the process is slightly different for owners of 1st Word or 1st Word Plus. 1st Word only allows one of each type of driver - dot matrix or daisywheel.

Thus if you are in the fortunate position of having a dot matrix and a Brother HR15 (which you have set up as a dot matrix printer to get the bold typeface correct), then you must install the latter file on a separate disc. Otherwise it will overwrite your present dot matrix driver.

Consequently copy the entire Printer folder to another disc, along with your 1st Word files. Note this does not need to be done if you intend to install a daisywheel printer as a daisywheel printer.

Double click on the Install program, and select your newly-written file. The appropriate driver will be created and if you test it by reloading 1st Word your files should be printed correctly.

1st Word Plus owners are more lucky, because it will allow for many different printer drivers. Install it by running the Install program and selecting your newly written file. To change drivers, simply click on the line displaying the driver title on the 1st Word Plus opening screen, and you will be presented with a list of your different drivers.

If you had a problem installing a particular printer, which you have now solved, why not write in to *Atari ST User* and we'll print your solutions to help those having similar problems. □

* Printer characteristics	
*	
* This table specifies the printer command sequences.	
* If the top bit of a code is set, then this indicates the position of a parameter passed to the printer. The code whose top bit is set in this table is added to the parameter passed before being sent to the printer. It is not used in all command sequences, only in those where the printer requires a variable value such as the length of a vertical tab.	
*	
* 0	* Character width
1, D	* RETURN WITHOUT LINEFEED
2, 1B, 35	* Forward print
3, 1B, 36	* Reverse print
* 4	
* 5	* Absolute horizontal tab
6, 1B, 57	* Draft bold on
7, 1B, 58	* Draft bold off
8, 1B, 57	* Near Letter Quality (NLQ) bold on (LX80)
9, 1B, 58	* NLQ bold off
* A	* Draft italic on
* B	* Draft italic off
* C	* NLQ italic on
* D	* NLQ italic off
* E	* Draft light on
* F	* Draft light off
* 10	* NLQ light on
* 11	* NLQ light off
12, 1B, 44	* Draft superscript on
13, 1B, 55	* Draft superscript off
14, 1B, 44	* NLQ superscript on
15, 1B, 55	* NLQ superscript off
16, 1B, 55	* Draft subscript on
17, 1B, 44	* Draft subscript off
18, 1B, 55	* NLQ subscript on
19, 1B, 44	* NLQ subscript off
1A, 1B, 45	* Draft underline on
1B, 1B, 52	* Draft underline off
1C, 1B, 45	* NLQ underline on
1D, 1B, 52	* NLQ underline off
1E, C	* Formfeed
1F, D, 1B, 2F	* Horizontal initialisation
* 20	* Vertical initialisation
21, 1B, 0D, 50	* Termination: printer reset
0	* NULL termination byte

Figure II. Printer characteristics

* Translation Table

* This table provides translation from single Atari input bytes into multiple Epson printer codes, and is useful for printing extraneous characters such as accented characters etc. All characters are subjected to translation, but if there is no entry in the table for a particular code, then the original code is sent to the printer.

* The entries must be arranged in ascending order of Atari input code. The table is NULL terminated.

0	* NULL: print a space
1, 1B, 52, 0, 7C, 8, 5E	* Up arrow: USA I backspace USA *
2, 1B, 52, 0, 7C, 8, 7E	* Down arrow: USA I backspace USA v
3, 2D, 8, 3E	* Right arrow: - backspace >
4, 3C, 8, 2D	* Left arrow: - backspace <
5	* No close box
6	* No size box
7	* No full box
8	* No tick
9	* No clock
A	* No bell
B	* No musical note
E	* No LH Atari symbol
F	* No RH Atari symbol
10, 30	* LCD 0
11, 31	* LCD 1
12, 32	* LCD 2
13, 33	* LCD 3
14, 34	* LCD 4
15, 35	* LCD 5
16, 36	* LCD 6
17, 37	* LCD 7
18, 38	* LCD 8
19, 39	* LCD 9
23, 1B, 59	* # from USA fount
* 24, 1B, 24	* \$ from USA fount
40, 1B, 52, 0, 40	* @ from USA fount
5B, 1B, 52, 0, 5B	* [from USA fount
5C, 1B, 52, 0, 5C	*] from USA fount
5D, 1B, 52, 0, 5D	* ^ from USA fount
5E, 1B, 52, 0, 5E	* _ from USA fount
60, 1B, 52, 0, 60	* ` from USA fount
7B, 1B, 52, 0, 7B	* from USA fount
7C, 1B, 52, 0, 7C	* ~ from USA fount
7D, 1B, 52, 0, 7D	* from USA fount
* 7E, 1B, 59	* ~ from USA fount
* 7F, 1B, 59	* No triangle
80, 43, 8, 2C	* Capital C cedilla: C backspace
81, 1B, 52, 2, 7D	* Lower case u umlaut from German fount
82, 1B, 52, 1, 7B	* Lower case e acute from French fount
83, 61, 8, 1B, 52, 0, 5E	* Lower case a circumflex: a backspace USA *
84, 1B, 52, 2, 7B	* Lower case a umlaut from German fount
85, 1B, 52, 1, 40	* Lower case a grave from French fount
86, 1B, 52, 4, 7D	* Lower case a boll from Danish 1 fount
87, 1B, 52, 1, 5C	* Lower case c cedilla from French fount
88, 65, 8, 1B, 52, 0, 5E	* Lower case e circumflex: e backspace USA *
89, 65, 8, 1B, 52, 1, 7E	* Lower case e umlaut: e backspace French umlaut
8A, 1B, 52, 1, 7D	* Lower case e grave from French fount
88, 69, 8, 1B, 52, 1, 7E	* Lower case i umlaut: i backspace French umlaut
8C, 69, 8, 1B, 52, 0, 5E	* Lower case i circumflex: i backspace USA *
8D, 1B, 52, 6, 7E	* Lower case i grave from Italian fount
8E, 1B, 52, 2, 5B	* Capital A umlaut from German fount
8F, 1B, 52, 4, 5D	* Capital A boll from Danish 1 fount
90, 1B, 52, 3, 40	* Capital E acute from Norwegian fount
91, 1B, 52, 4, 7B	* Lower case ae diphthong from Danish 1 fount
92, 1B, 52, 4, 5B	* Capital AE diphthong from Danish 1 fount
93, 6F, 8, 1B, 52, 0, 5E	* Lower case o circumflex: o backspace USA *
94, 1B, 52, 2, 7C	* Lower case o umlaut from German fount
95, 1B, 52, 6, 7C	* Lower case o grave from Italian fount
96, 75, 8, 1B, 52, 0, 5E	* Lower case u circumflex: u backspace USA *
97, 1B, 52, 1, 7C	* Lower case u grave from French fount
98, 79, 8, 1B, 52, 1, 7E	* Lower case y umlaut: y backspace French umlaut
9A, 1B, 52, 2, 5C	* Capital O umlaut from German fount
9B, 1B, 52, 2, 5D	* Capital O umlaut from German fount
9B, 63, 8, 1B, 52, 0, 7C	* c cent: c backspace USA I
9C, 23	* Pound sterling from UK fount
9D, 1B, 52, 8, 5C	* Yen from Japanese fount
9E, 1B, 52, 2, 7E	* Eszett from German fount

9F, 66

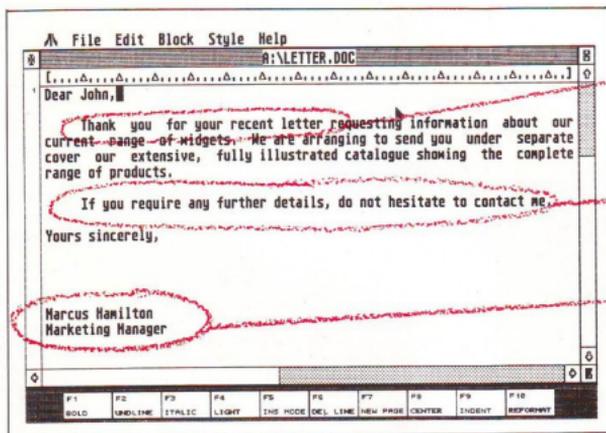
A0, 61, 8, 27
A1, 69, 8, 27
A2, 6F, 8, 27
A3, 75, 8, 27
A4, 1B, 52, 7, 7C
A5, 1B, 52, 7, 5C
A6, 61, 8, 5F
A7, 6F, 8, 5F
A8, 1B, 52, 7, 5D
A9
AA
AB
AC
AD, 1B, 52, 7, 5B
AE
AF
B0, 61, 8, 1B, 52, 0, 7E
B1, 6F, 8, 1B, 52, 0, 7E
B2, 1B, 52, 4, 5C
B3, 1B, 52, 4, 7C
B4
B5
B6, 41
B7, 41
B8, 4F
B9, 1B, 52, 1, 7E
BA, 27
BB
BC
BD
BE
BF
C0, 79, 8, 1B, 52, 1, 7E
C1, 59
C2
C3
●
●
●
●
D8
D9
DA
DB
DC
DD, 1B, 52, 2, 40
DE
DF
E0
E1, 1B, 52, 2, 7E
E2
E3
E4
E5
E6
E7
E8
E9
EA
EB
EC
ED
EE
EF
F0, 3D, 8, 5F
F1, 2B, 8, 5F
F2, 3C, 8, 5F
F3, 3C, 8, 5F
F4
F5
F6, 3A, 8, 2D
F7
F8, 1B, 52, 1, 5B
F9
FA
FB
FC
FD
FE
FF
0

* Lower case swash f: print f
* Lower case a acute: a backspace
* Lower case i acute: i backspace
* Lower case o acute: o backspace
* Lower case n tilde from Spanish fount
* Capital N tilde from Spanish fount
* Lower case a underline: a backspace underline
* Lower case o underline: o backspace underline
* Inverted ? from Spanish fount
* No top left corner
* No top right corner
* No 1/2 fraction
* No 1/4 fraction
* Inverted ! from Spanish fount
* No *
* Lower case a tilde: a backspace USA *
* Lower case o tilde: o backspace USA *
* Capital crossed O from Danish 1 fount
* Lower case crossed o from Danish 1 fount
* No lower case oe diphthong
* No capital OE diphthong
* No capital A grave: print A
* No capital A tilde: print A
* No capital O tilde: print O
* Umlaut from French fount
* Acute: print '
* No dagger
* No paragraph symbol
* No copyright symbol
* No Registered symbol
* No Trademark symbol
* ij ligature: y backspace French umlaut
* Capital IJ ligature: print Y
* No Hebrew...

* Section mark from German fount
* No dropped circumflex
* No infinity
* No alpha
* Eszett from German fount
* No Greek...

* Equivalence: = backspace_
* ±: ± backspace_
* >: > backspace_
* <: < backspace_
* No integral top piece
* No integral bottom piece
* Division sign: : backspace -
* No ≈ symbol
* Degree symbol from French fount
* No superior bullet
* No inferior bullet
* No square root sign
* No superior n
* No superior 2
* No superior 3
* No macron

Figure III: The translation table



String along with the Alternative

THE Alternative is a simple-to-use desk accessory that allows you to store strings of up to 60 characters on each of the 36 different alphanumeric keys.

Any of these stored strings can be used in an application by pressing the Alternate key together with the key on which the required string is stored.

So if you are using 1st Word to write a letter, you can store the word Alternative on the A key. And every time you press Alt+A, "Alternative" rolls out neatly on to your screen, at about the speed a good typist would manage. It's very straightforward really – but it's an absolute boon. But even with the best of utilities there are some limitations and The Alternative is no exception.

The program's main limitation is that generally you can only enter the char-

Chris Quekett has a listing that makes a useful desk accessory even better

acters that are engraved on the keytops. Therefore my first task is to find a way around this.

Summon up the Alt editor on your screen. Enter an A against the A key, a B against the B and so on all through the available keys, then save the result.

You now have a file on your disc with a Alt extender which will serve as a template for creating .Alt files containing characters which the keyboard will not return.

Next reach for your copy of MichTron Utilities and examine the file you have just created.

Simply edit the file by entering the Ascii codes in hex for the characters you require instead of the hex codes that you see for A, B, C and so on.

If you haven't got a copy of MichTron Utilities, Listing I (in Basic) will create .Alt files for you.

Like me you probably dislike typing in Basic programs. But now that you have a copy of the Alternative life is easy.

Type in the first lines using the AUTO command to number them for you. Next call up the Alt editor and store the following string on a convenient key – 0 for example:

```
"DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00"
```

Here comes the clever part: terminate your string with a carriage return, which will display as a carriage return. Just keep pressing Alt+0 until you reach line 1800, then add the last two lines and those given in Listing I.

Save this program and you have a template which is easy to edit to create any Alt file.

Listing I has the codes entered in the DATA statements for A to Z and 0 to 9 so that you can see on which key the string will be stored and where to start entering your own codes.

For example if you want the Alt+B combination to return the trade mark

Product: *The Alternative*
Price: £29.95
Supplier: Microdeal, PO Box 68, St. Austell,
Cornwall, PL25 4YB.
Tel: 0726 68020.

symbol, change \$42 in line 210 to \$BF.

If you now edit the program to produce eight successive .ALT files with different names containing 32 characters each from \$00 to \$FE, you will be in the enviable position of being able to return any

The program has applications too for communications packages. With some terminal emulators like K-Comm you can define the function keys to return character strings.

However, if you need more than 10, or longer strings, or would like to hide your password in a less obvious place, the Alternative is the answer.

It is excellent for storing quite unhackable and totally forgettable passwords. If you're very paranoid, you can even spread them in small bits across several keys, each segment containing control characters and chained to the next segment several keys away.

Ascii character directly from your keyboard.

Here follow a few suggestions to help the Alternative earn its keep:

- Since we all have different printers connected to our STs, I can't give detailed instructions and you may well have to write more than one printer driver to exploit all the possibilities.

And in some examples what you get will most certainly not be what you saw.

- Do you want to write in a foreign lan-

guage? Forget that table on the right of the screen with all the exotic characters.

Simply edit the program to allow the Alt editor to return the characters that you require (\$80 and above) - the same applies if you constantly have a craving to type large volumes of mathematical formulae.

- Do you need to construct tables of figures with neat boxes round them? Look at your numeric keypad. It makes a logically arranged box constructor for tables and figures.

If you enter the printer code for a top left corner on the 7, bottom left corner on the 1, two lines intersecting on the 5 and so on, then you only need two other keys on which to store the horizontal and vertical line codes.

- If you need text strings longer than 60 characters, the instructions tell you how to chain strings together to give you a theoretical maximum of 2088 characters from one key.

- It's easier to use the Alt editor rather than the Layout facility if you want a lengthy header, or one in bold or underlined type.

It's a good idea to insert enough Control+Ms at the end of your string to take the cursor down to the line where you wish to start typing.

One hint is to insert a space after the last word in your string so that the cursor is advanced ready to type the next word.

Another is to store your strings on memorable keys. An example might be to place "demand characteristic" on the D, otherwise you can waste time trying to

remember which key is which.

- We have already used the Alternative to make light work of typing in a Basic program. Additional time and effort can be saved by storing frequently used Basic commands on handy keys, such as GOTO on the G or DATA on the D.

Really I would like to see a version 2.0 of The Alternative. This would allow the creation of .ALT files containing a full

I think I desperately need a half hour with the Hitchhiker's Guide after this - and the program comes into its own again. I just press ALT+A for Again, ALT+L for Look, ALT+I for Inventory and so on.

It certainly cuts the frustration of being told "I don't know that word", because you made a typing mistake at 4am.

range of high bit characters from within the accessory, and allow strings to be stored on any key, not just the alphanumeric ones.

The Alternative takes up about 60k of memory and these days I'm often pushed for space with a humble 520ST, but nothing's ever free. Unfortunately I understand from Microdeal that no such plans are afoot.

Having said that I can't see how I managed for eight months without the Alternative and I'm fairly certain that you will soon feel the same way. □

```

10 REM: PROGRAM TO CREATE AN ALT FILE
20 REM: EDIT NEXT LINE TO CHANGE DRIVE OR NAME OF .ALT FILE
30 OPEN "R",A:NAME.ALT,16
40 FIELD#1, 16 AS HOLDS
50 CS=""
60 FOR N=1 TO 16
70 READ XS
80 IF XS="" THEN 160
90 C=VAL("2H"+XS)
100 CS=CS+CHR(C)
110 NEXT N
120 LSET HOLDS=CS
130 ENT=ENT+1
140 PUT 1, ENT
150 GOTO 50
160 DATA 41,4c,54,20,76,31,2E,30,20,20,20,20,20,20,20,20
170 DATA 41,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
180 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
190 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
200 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
210 DATA 42,00,00,00,00,00,00,00,00,00,00,00,00,00,00
250 DATA 43,00,00,00,00,00,00,00,00,00,00,00,00,00,00
290 DATA 44,00,00,00,00,00,00,00,00,00,00,00,00,00,00
330 DATA 45,00,00,00,00,00,00,00,00,00,00,00,00,00,00
370 DATA 46,00,00,00,00,00,00,00,00,00,00,00,00,00,00
410 DATA 47,00,00,00,00,00,00,00,00,00,00,00,00,00,00
450 DATA 48,00,00,00,00,00,00,00,00,00,00,00,00,00,00
490 DATA 49,00,00,00,00,00,00,00,00,00,00,00,00,00,00
530 DATA 4A,00,00,00,00,00,00,00,00,00,00,00,00,00,00
570 DATA 4B,00,00,00,00,00,00,00,00,00,00,00,00,00,00
610 DATA 4C,00,00,00,00,00,00,00,00,00,00,00,00,00,00

```

```

650 DATA 4D,00,00,00,00,00,00,00,00,00,00,00,00,00,00
690 DATA 4E,00,00,00,00,00,00,00,00,00,00,00,00,00,00
730 DATA 4F,00,00,00,00,00,00,00,00,00,00,00,00,00,00
770 DATA 50,00,00,00,00,00,00,00,00,00,00,00,00,00,00
810 DATA 51,00,00,00,00,00,00,00,00,00,00,00,00,00,00
850 DATA 52,00,00,00,00,00,00,00,00,00,00,00,00,00,00
890 DATA 53,00,00,00,00,00,00,00,00,00,00,00,00,00,00
930 DATA 54,00,00,00,00,00,00,00,00,00,00,00,00,00,00
970 DATA 55,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1010 DATA 56,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1050 DATA 57,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1090 DATA 58,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1130 DATA 59,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1170 DATA 5A,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1210 DATA 30,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1250 DATA 31,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1290 DATA 32,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1330 DATA 33,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1370 DATA 34,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1410 DATA 35,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1450 DATA 36,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1490 DATA 37,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1530 DATA 38,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1570 DATA 39,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1580 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1590 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1600 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
1610 DATA #
1620 CLOSE 1
1630 END

```

BITS

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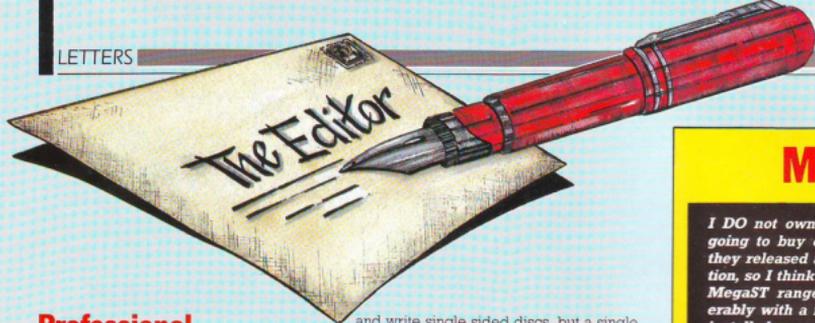
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Professional programming

I RECENTLY brought a 520ST and was very pleased with it except for its basic which might have been OK if it wasn't for the four windows.

I would have bought Fast Basic from Computer Concepts, but after five years of using the language I wanted a change.

I tried machine code and assembly language but that nearly seriously damaged my mental health!

I decided upon C for numerous reasons including the fact that Degas was written using it. With a large selection of C compilers available I am unsure which to buy. I am willing to spend almost £150. I want to use the compiler for serious work rather than just as a toy.

I would also like you to recommend a good beginners' guide to C. Even though I don't think that I am being unrealistic about C, I know that it won't be easy. My decision will be based on what you have to say on the subject. — **Joel Hughes, Pontypool.**

● Most commercial ST programs are written in C, but have assembly language subroutines where extra speed is needed. Certainly the most professional C available for around the £150 mark is Megamax C. This includes a huge and detailed manual and was reviewed in the September 1986 issue of Atari ST User. Another to look out for is Mark Williams' C which we will be reviewing in an upcoming issue.

Good books on C are more difficult to come by. You should look out for the Abacus range and also The C Programming Language, which was written by the "inventors" of C — Kernighan and Ritchie.

Single sided management

Please could you tell me if it is possible to copy a single sided disc in a single sided drive to a single sided disc in a double sided drive?

How can you remove folders from a disc, but at the same time keep the files that they hold on the disc?

Finally have you any idea when Marble Madness, Star Raiders or Battlezone will be released for the ST? — **A. Scott, Loftus, Cleveland.**

● Quite a bumper bundle of questions! A double sided disc drive will happily read

and write single sided discs, but a single sided drive will refuse to use double sided discs. Therefore you shouldn't have any problems backing-up single sided discs using one double sided and one single sided drive.

Normally if you remove a folder from a disc by placing it into the trash can, all the files in that folder are also lost. The only way around this is to first copy all the files to the original directory of the disc by moving them on to the disc icon on the desktop.

When all the files have been copied into the main directory, simply delete the folder and the copies will be left intact.

According to our sources at Atari, Star Raiders and Battlezone should be in the shops soon. Skyfox is reviewed in this issue and Electronic Arts are producing an ST version of Marble Madness for release by early summer.

Arabic word processing

I AM looking for a word processing package for my 520ST which will handle both English and Arabic at the same time, being able to switch between the two languages whenever necessary.

As I am sure you are aware, there are some obvious difficulties involved in this. Apart from the total difference in characters, Arabic is also written right to left.

Does such a package exist? If not can you suggest any way in which I might be able to integrate two programs to achieve what I need, even if it will be a somewhat tedious task? — **Peter Savage, London N19.**

● A company in Sheffield called Micro-Praxis produces an Arabic word processor for the ST and hopefully should be able to help you.

Printing gibberish

I HAVE a problem with an Atari 520ST and would be very glad if you could throw some light on it. When I try to print from the RS232 port using the Qume printer driver provided with 1st Word to the Qume Sprint printer, it sometimes works perfectly, but for most of the time merely prints a single line of gibberish.

The dealer from whom I bought it cannot help — they sell mainly 8 bit games

Making the

I DO not own an Atari yet I was going to buy one in January, then they released all that new information, so I think I shall wait until the MegaST range is available, preferably with a full 32 bit 68020 chip installed.

I don't want to wait, as I would like to learn C, but I may as well have the most up to date machine available. I've seen the ads in your magazine by AS&T of Southend selling 4Mb 1040s. Should I buy one of these or wait for the proper versions? Atari really does confuse me. Help!

This issue is only the second I have bought, so I am not aware of what has been covered in the past, in which case you may have published articles on what I should like to read, as follows:

Communications: This is my main interest, I would like to see packages compared and info on how things work.

● In this industry it is always possible to say that you're going to wait until the next computer comes along, and Atari hasn't really helped in the confusion by being so prolific.

A full 32 bit, Unix running 68020 ST is unlikely until very late in the year. It might be announced soon, but delivery will be a very different matter.

Buy an ST now. The prices have just come down and Atari has always promised that older machines would be upgradable to be able to take such things as blitters.

The MegaST might be worth considering, but buy one as soon as they come out. It is very unlikely that

and do not seem to have any experience of using the ST.

Since the printing is sometimes perfect, I assume that there are no hardware problems and that the trouble does not lie in the Qume driver. This leaves the configuration of the RS232 port as possibly suspect.

Is it possible for this to configure correctly on some occasions and not others? — **D. Hughes, Milton Keynes.**

● This is the problem that you always run up against by buying from a "box-shifting" dealer. We always recommend that you buy from an enthusiastic local dealer or from one of the advertisers in Atari ST User. They are always quite happy to solve your problems over the phone and are very experienced in doing so.

Atari tells us that a problem occurs occasionally with printers connected to

right decision

Languages: My current interest is in C, but I would find interesting any articles and comparisons (which language is good for what application etc) on all languages available on the ST range.

Applications software: Comparisons and info on word processors, spreadsheets and so on.

New user page: I would like articles relating to using the STs, not to using computers in general. I would say that most users of an ST are fluent in using computers and Basic but would need specialised information on the workings of the ST.

Gem: How to use and integrate it. I am totally ignorant of all things Atari, but am changing that as fast as I can. I can't wait to get my sticky hands on an ST. If Atari announces another machine, I'll top myself. Do you know anything about Unix/Xenix ever being made available on the ST range? - Paul Whyles, sent via MicroLink.

all the MegaST models will be available at once and it will be easy to upgrade a 1Mb MegaST to a 4Mb machine with blitter and other add-ons.

Thank you for your suggestions on articles and topics to be covered. As you probably know, we are starting a major new Gem programming series in this issue and will be following it with other in-depth articles for beginners and experts alike.

■ Paul's questions and suggestions were in response to a notice we placed on the MicroLink Atari bulletin board. His queries were answered by one of our editorial team the same day and he bought an ST the following week.

the RS232 port. To solve it, you must call up the RS232 desk accessory and alter the baud rate and then change it back to its original value. This has the effect of reinitialising the RS232 port.

Software compatibility

I have recently bought an Atari 1040STF and have two questions which I hope you can answer. In a recent article in Atari ST User, I am certain that you said that IBM PC software would run on an ST if an IBM-compatible disc drive was connected to the second drive port.

If this is the case, would any IBM PC software run normally, or are there exceptions? Also, who supplies the disc

drive and much does it cost?

What advantage would I have in buying a blitter chip, bearing in mind that I only run commercial software and do not write my own? - G. Pettican, Clacton-On-Sea.

● We have never said that the ST could run IBM programs simply by plugging in an extra disc drive. If you plug in a 5.25in drive such as those from AST or Cumania, you can read and write data to and from PC discs.

This means that if you use compatible programs such as Lotus 1-2-3 on your PC and VIP Professional on your ST, you can swap data with no problems whatsoever.

If you want to run PC programs on your ST, you will have to buy one of the IBM emulators which are now available. The most notable of these are a software based version from Robtek and a hardware based solution which will soon be available from Atari.

The blitter chip will speed up some commercial ST programs. For example, the screen scrolling in programs such as VIP Professional and 1st Word will be vastly speeded up when a blitter is fitted.

Not all programs will be able to use it however. For instance, both Colourspace and Starglider bypass the routines which the blitter speeds up, and therefore will be unaffected.

Gadgets for the ST

I HAVE been reading Gadgets in Atari User over the past few months. I am very friendly with a 520ST who would like to listen to the radio, talk to central heating or maybe drive a Scalextric car round Brands Hatch. Can you help me? - Mike Trewartha, Kingston-Upon-Hull.

● We are looking into the possibilities of having a Gadgets-type series for the ST. We have also heard that Michtron were working on a controller for the ST.

You might try getting in touch with their UK half, Microdeal, on 0726 68020 who will be able to tell you what became of the project.

International Fast Basic

I WOULD like some information about Computer Concepts' Fast Basic cartridge advertised in your magazine. I was feeling tempted to send the £85.90 required but I have some questions.

Are the Fast Basic and Backpack cartridges compatible with the NTSC video system which we use in Peru? - Ivan Antezana, Lima, Peru.

● Atari ST User certainly gets around! You shouldn't have any problems running programs or cartridges designed in the UK in Peru. The electricity into and the video out of your ST might be different,

but inside it's just the same as the ones that we use here.

Perhaps some of our foreign readers would like to write telling us about the ST and its impact on their countries and communities.

Discount disc specifications

I HAVE recently upgraded from a Commodore 64 to the Atari 1040STF and obviously there is no comparison between the two computers.

I am a newcomer to using a disc-based computer and am slightly confused about discs. Which 3.5 inch blank discs are the best to use with my ST and are there any I should avoid?

Although the prices seem to vary considerably, most advertisements state that the discs are "100% error free" or "guaranteed for life". I understand the difference between a TDK D 90 cassette and a TDK SAX 90 where the price reflects the quality of the audio tape - is this the same with blank discs?

I have been given a new box of Hewlett Packard discs which as yet I have not used as someone told me that they are not compatible with my Atari ST disc drive. I would be most grateful if you could clear up this matter for me. - Rob Anderson, Oxon.

● When a disc is manufactured it is tested to see if it is up to specification to become a double sided double density disc. Depending on which part of the tests it fails, the disc gets downgraded to single sided, single density or both. If it fails all the tests it is thrown away.

Some of the discs which pass are labelled with a big name such as TDK, Sony or Memorex, while others are sold to distributors who then sell them to duplicators and software houses. A small proportion also go into the discount market.

Therefore, if you have a big name disc in your disc box and a discount disc beside it, the chances are that they started life in the same factory. By all means pay £35 for a box of 10 discs - you are simply paying at least £10 for your peace of mind. Any 3.5 inch discs will work in your Atari drives, so your Hewlett Packard box should be OK.

Educational software

I AM a teacher at a London college and I was recently at the High Tech in Education Show at the Barbican. I have a 1040 STF at home and was very interested to see that Atari had a stand. I hope that this means that Atari will soon be releasing some educational software for the ST, as the machine is leagues ahead of anything that the BBCs we have at the moment are capable of.

I was especially impressed by the video camera superimposing software which was being shown, and wonder if >

◁ you will be printing any information about it.

Such a product, if they can sell it at the projected £125, would be very useful indeed in our TV workshop, which is used by the students and local societies. At the moment they use a BBC to generate simple captions, but I feel that the graphical power of the ST would provide some very professional results indeed. — **Mr. I. Chesterton, Coal Hill, London.**

● Let's hope that there will soon be lots more educational software for the ST at all levels, from primary school upwards.

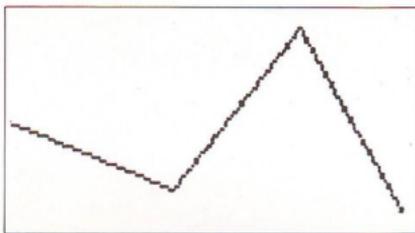
As to the GenLok video adapter, we will be running a feature on its development next month. It should prove very popular for both amateur and professional video users, plus home computer owners who just want to play around with clever graphics.

The results were astounding for the price, and it looks as though the product will contain even more features when it is finally released.

First Word crashes

WHEN using First Word on my 520 ST I

Printer graphics resolution



DO you know of any software that will allow my Atari 1040 STF to exploit the graphics resolution of a 24 pin printer? My problem is that when using a standard 9 pin printer, screen dumps produce a distinct 'staircase' appearance — as shown on the enclosed K-graph screen dump.

I am told that using a 24 pin printer without additional software will produce no improvement.

I would appreciate your advice, even if it is that nothing can be done. — **C. L. Morfe, Institute of Sound and Vibration Research, Southampton University.**

● The answer to your problem really comes in two parts. When doing a normal screen dump from the desktop, the stepping effect you are experiencing is caused by the size and placement of the pixels on the screen, not really those of

have found that the program sometimes crashes when I am selecting a file to load. It always seems to happen when I am entering a path name at the top of the file selector box, particularly when I type the underscore symbol in the folder DEMO.TXT. Can you give me any advice on this? — **Dr. H. Sullivan, London SW2.**

● The problem you have encountered is not with First Word, but with GemTOS itself. There is a bug in the File Selector routine which will crash the system completely if you enter an underscore in a file selector box pathname.

This only occurs if you enter the underscore manually from the keyboard, so your best way around it would be to start by changing the pathname to B:*.DOC. Click once on the vertical scroll bar to force a read of the new top level directory and then click on the new folder you wish to select.

You may continue to click on folders until you reach the directory level you require, even if their names contain underscore characters.

By the way, although you can't type a pathname containing an underscore, you CAN use one within the filename line without any problems.

the printer. Thus a 24 pin printer would not help you, even if you had the correct driver — it would just reproduce the setting of the screen display more accurately.

However, if you are using more advanced software packages, especially those which are capable of using the GDOS metafile format, you might have more luck.

These include such things as Easy Draw and Gem Draw, where the metafile system allows the software to send a description of the display rather than a plain pixel dump of it.

This can then be interpreted by the printer driver in question in the best way it can. There is currently a program with a 24 pin driver routine from a company in Germany, but perhaps it would be worth your while contacting GST in the UK, as we understand they are working on something similar.

Listing files from the desktop

ON page 11 of the March ST User you again draw attention to the More? display when listing files from the desktop. As in the previous October issue, you mention that while an Ascii textfile is being displayed on the screen, pressing Control+C returns you to the desktop.

While this works fine, I find that a quicker way to do this is to press the single key Q (presumably standing for Quit), as this involves only one keypress.

I am also glad to observe that unlike another magazine (!) you have not abandoned C altogether when it comes to program listings. Like many others who bought the ST when it first came out, I turned to C because of the inadequacies of Atari Basic — but the dearth of C listings makes learning the language an uphill and lonely (not to mention expensive) struggle.

I reckon that now that Fast ST Basic is available not so many new ST owners will look towards Pascal or C for structured programming.

I own several compilers (Metacomco Pascal, GST C, Megamax C) but have added Fast Basic primarily for the sake of my eight-year-old son who is already becoming quite computer literate. My current interest is in general practice computer software, looking at methods of improving the man-machine interface — the mouse and icons should revolutionise GP software. — **Alan Chin M.B., Whitehead, Co. Antrim.**

● As you quite rightly say, Q does indeed quit the listing mode, and you will probably already be familiar with the Return key for one more line and the spacebar for a further full screen of text.

Now that we at last have much more space in the magazine we will be printing articles and listings which cover all aspects of the ST, including, of course, both C and Fast Basic.

In fact, we encourage all Basic programmers to submit their work in Fast Basic rather than Atari Basic. Not only is it far more readable but it also allows much more complex operations in far shorter programs. Plus, it works! □

WE welcome letters from readers — about your experiences using the Atari ST, about tips you would like to pass on to other users... and about what you would like to see in future issues.

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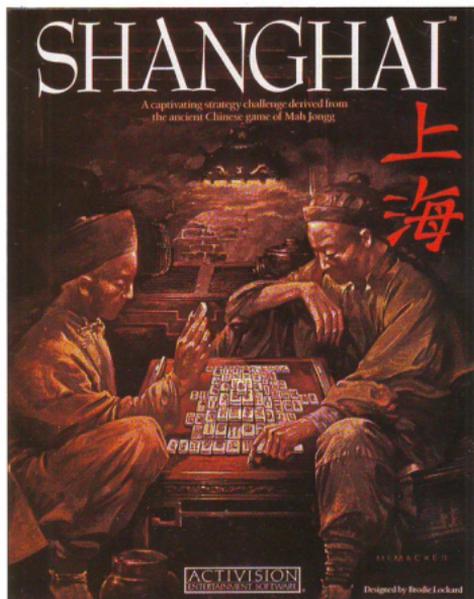
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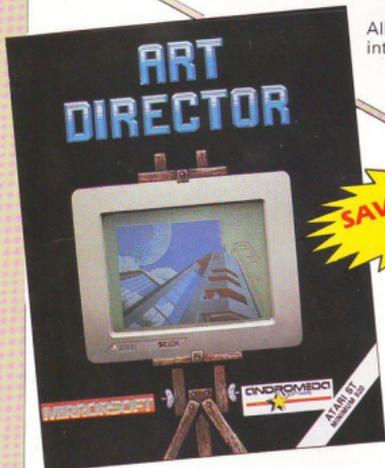


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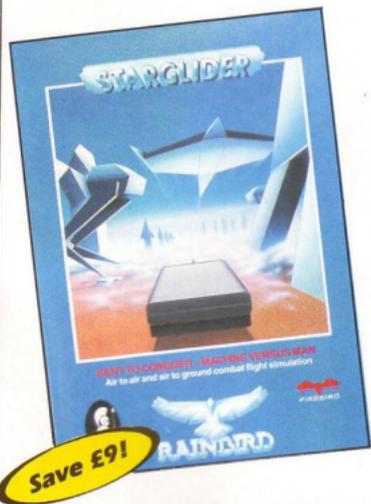
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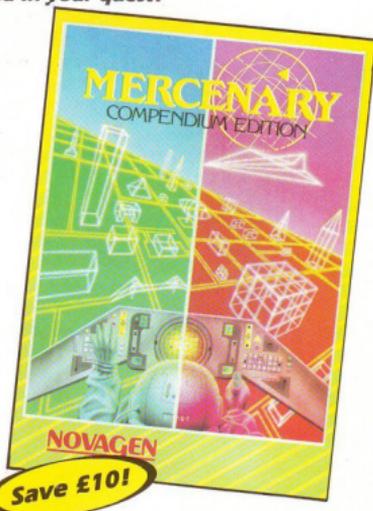
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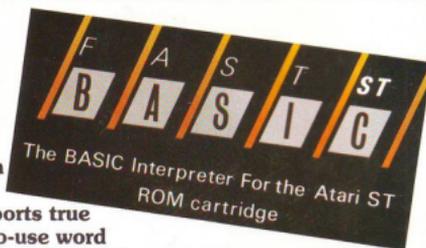
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